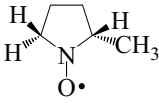
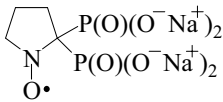
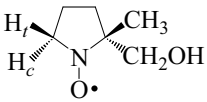
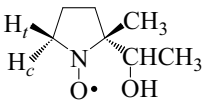
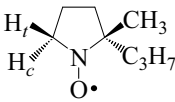
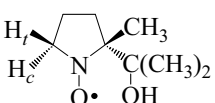
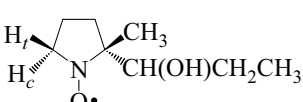
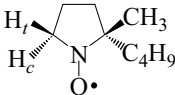
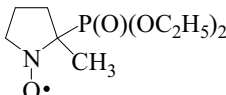
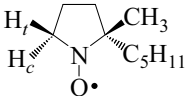
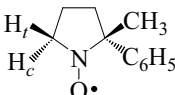
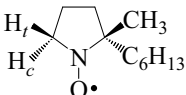
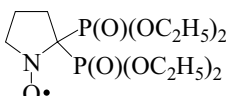
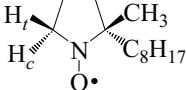
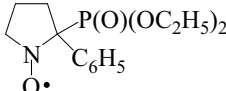
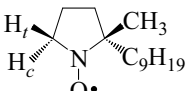
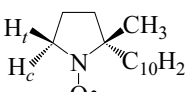
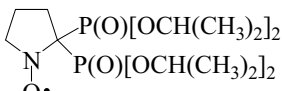


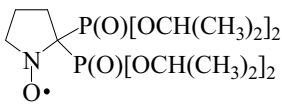
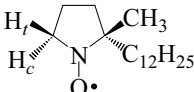
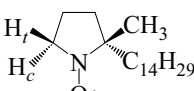
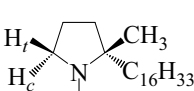
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
12.3 Cyclic nitroxides			
12.3.1 Pyrrolidinyl-N-oxyls			
12.3.1.1 Monosubstituted pyrrolidinyl-N-oxyls			
$[C_5H_{10}NO]$ 	Reduction of MPO with $LiAlH_4$ or $NaBH_4$ and oxidation with air Benzene ESR / 298	N: 1.430 $H_{\beta}(2)$: 2.00 $H_{\beta}(5)$: 2.00 (<i>trans</i>) $H_{\beta}(5)$: 1.75 (<i>cis</i>)	90Zha1
12.3.1.2 2,2-Disubstituted pyrrolidinyl-N-oxyls			
$[C_4H_6NO_7P_2^{4-} \cdot 4Na^+]$ 	Oxidation of (pyrrolidine 2,2-biphosphonic acid with CPBA in aqueous NaOH, pH 13 ESR / 298	2.0054 N: 1.61 $2H_{\beta}$: 2.11 $2^{31}P$: 4.06	98Oli1
$[C_6H_{12}NO_2]$ 	Photolysis of methanol and benzophenone in the presence of MPO Benzene ESR / 298	N: 1.41 $2H_{\beta}$: 1.90	90Zha1
$[C_7H_{14}NO_2]$ 	Photolysis of ethanol and benzophenone in the presence of MPO Benzene ESR / 298	N: 1.42 $H_{\beta}(c)$: 1.90 $H_{\beta}(t)$: 1.97	90Zha1
$[C_8H_{16}NO]$ 	Reduction of 2-methyl-2-propylpyrroline N -oxide with $LiAlH_4$ or $NaBH_4$ and oxidation with air Benzene ESR / 298	N: 1.44 $H_{\beta}(c)$: 1.82 $H_{\beta}(t)$: 2.00	89Zha1, 90Zha1
$[C_8H_{16}NO_2]$ 	Photolysis of 2-propanol and benzophenone in the presence of MPO Benzene ESR / 298	N: 1.44 $H_{\beta}(c)$: 1.91 $H_{\beta}(t)$: 1.96	90Zha1
$[C_8H_{16}NO_2]$ 	Photolysis of n -propanol and benzophenone in the presence of MPO Benzene ESR / 298	N: 1.43 $H_{\beta}(c)$: 1.90 $H_{\beta}(t)$: 1.96	90Zha1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[\text{C}_9\text{H}_{18}\text{NO}]$ 	Reduction of 2-methy-2-butylpyrrolidine <i>N</i> -oxide with LiAlH_4 or NaBH_4 and oxidation with air Benzene ESR / 298	N: 1.44 $H_\beta(c)$: 1.81 $H_\beta(t)$: 2.00	89Zha1, 90Zha1
$[\text{C}_9\text{H}_{19}\text{NO}_4\text{P}]$ 	Oxidation of diethyl (2-methylpyrrolidin-2-yl)phosphonate with CPBA Diethyl ether ESR / 298	N: 1.419 H_β : 1.839 H_β : 1.907 $3H_\gamma(\text{CH}_3)$: 0.047 H_γ : 0.011 H_γ : 0.027 H_γ : 0.037 H_γ : 0.040	99Bar1
$[\text{C}_{10}\text{H}_{20}\text{NO}]$ 	Reduction of 2-methy-2-pentylpyrrolidine <i>N</i> -oxide with LiAlH_4 or NaBH_4 and oxidation with air Benzene ESR / 298	N: 1.43 $H_\beta(c)$: 1.81 $H_\beta(t)$: 1.99	89Zha1, 90Zha1
$[\text{C}_{11}\text{H}_{14}\text{NO}]$ 	Photolysis of $\text{Bi}(\text{C}_6\text{H}_5)_3$ in the presence of MPO Benzene ESR / 298	N: 1.41 $H_\beta(c)$: 1.85 $H_\beta(t)$: 1.97	90Zha1
$[\text{C}_{11}\text{H}_{22}\text{NO}]$ 	Reduction of 2-methy-2-hexylpyrrolidine <i>N</i> -oxide with LiAlH_4 or NaBH_4 and oxidation with air Benzene ESR / 298	N: 1.42 $H_\beta(c)$: 1.79 $H_\beta(t)$: 1.97	89Zha1, 90Zha1
$[\text{C}_{12}\text{H}_{26}\text{NO}_7\text{P}_2]$ 	Oxidation of tetraethyl (pyrrolidine 2,2-diyl)bisphosphonate with CPBA ESR / 298 Water Benzene or CH_2Cl_2	2.0058 N: 1.45 ^{23}P : 4.43 $2H_\beta$: 1.93 2.0060 N: 1.39 to 1.40 ^{23}P : 4.23 to 4.28 $2H_\beta$: 1.78 to 1.81	98Oli1
Below 250 K chemical exchange takes place [97Roc1].			

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{26}NO]$ 	Reduction of 2-methyl-2-octylpyrrolidine <i>N</i> -oxide with $LiAlH_4$ or $NaBH_4$ and oxidation with air Benzene ESR / 298	N: 1.44 $H_\beta(c)$: 1.82 $H_\beta(t)$: 2.00	89Zha1, 90Zha1
$[C_{14}H_{21}NO_4P]$ 	Treating of 2-(diethoxyphosphoryl)-2-phenylpyrrolidine <i>N</i> -oxide with dimethyldioxirane Water ESR / 298	N: 1.40 ^{31}P : 3.42 H_β : 1.63 H_β : 2.02	99Kar1
$[C_{14}H_{28}NO]$ 	Reduction of 2-methyl-2-nonylpyrrolidine <i>N</i> -oxide with $LiAlH_4$ or $NaBH_4$ and oxidation with air Benzene ESR / 298	N: 1.44 $H_\beta(c)$: 1.80 $H_\beta(t)$: 1.98	89Zha1, 90Zha1
$[C_{15}H_{30}NO]$ 	Reduction of 2-methyl-2-decylpyrrolidine <i>N</i> -oxide with $LiAlH_4$ or $NaBH_4$ and oxidation with air Benzene ESR / 298	N: 1.41 $H_\beta(c)$: 1.78 $H_\beta(t)$: 1.97	89Zha1, 90Zha1
$[C_{16}H_{34}NO_7P_2]$ 	Oxidation of tetra- <i>i</i> -propyl (pyrrolidine 2,2-diyl) bisphosphonate with CPBA ESR / 193 Benzene	2.0060 <i>Conformer 1</i> (66%) N: 1.38 ^{31}P : 4.11 ^{31}P : 4.36 H_β : 1.71 H_β : 1.85 4H: 0.04 <i>Conformer 2</i> (34%) N: 1.38 ^{31}P : 4.49 ^{31}P : 3.88 H_β : 1.99 H_β : 1.56 4H: 0.04	97Roc1, 98Oli1

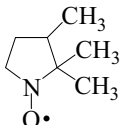
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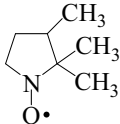
The conformational interconversion has been studied and the potential energy barriers are reported

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₆H₃₄NO₇P₂] (<i>continued</i>)</p> 	<p>Oxidation of tetra-<i>i</i>-propyl (pyrrolidine 2,2-diyl) bisphosphonate with CPBA CH₂Cl₂ ESR / 298</p>	<p>2.0060 <i>Conformer 1</i> (68%) N: 1.39 ³¹P: 4.12 ³¹P: 4.44 H_β: 1.72 H_β: 1.88 4H: 0.04 <i>Conformer 2</i> (32%) N: 1.43 ³¹P: 4.53 ³¹P: 4.00 H_β: 1.99 H_β: 1.63 4H: 0.04</p>	97Roc1, 98Oli1
The conformational interconversion has been studied and the rotational energy barriers are reported			
<p>[C₁₇H₃₄NO]</p> 	<p>Reduction of 2-methyldodecylpyrrolidine <i>N</i>-oxide with LiAlH₄ or NaBH₄ and oxidation with air Benzene ESR / 298</p>	<p>N: 1.38 H_{β(c)}: 1.75 H_{β(t)}: 1.91</p>	89Zha1, 90Zha1
<p>[C₁₉H₃₈NO]</p> 	<p>Reduction of 2-methyltetradecylpyrrolidine <i>N</i>-oxide with LiAlH₄ or NaBH₄ and oxidation with air Benzene ESR / 298</p>	<p>N: 1.39 H_{β(c)}: 1.75 H_{β(t)}: 1.92</p>	89Zha1, 90Zha1
<p>[C₂₁H₄₂NO]</p> 	<p>Reduction of 2-methylhexadecylpyrrolidine <i>N</i>-oxide with LiAlH₄ or NaBH₄ and oxidation with air Benzene ESR / 298</p>	<p>N: 1.38 H_{β(c)}: 1.74 H_{β(t)}: 1.93</p>	89Zha1, 90Zha1

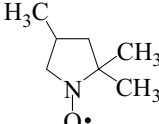
12.3.1.3 Trisubstituted pyrrolidiny-*N*-oxyls

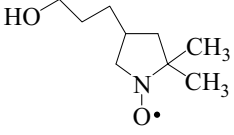
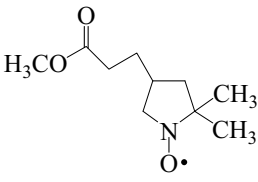
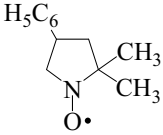
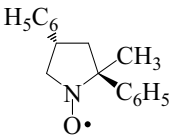
12.3.1.3.1 2,2,3-Trisubstituted pyrrolidiny-*N*-oxyls

<p>[C₇H₁₄NO]</p>  <p>(<i>continued</i>)</p>	<p>Reduction of corresponding nitron with NaBH₄ and oxidation with air ESR / 298 Water</p>	<p>N: 1.652 H_β: 1.926 H_β: 2.630</p>	91Zha1
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Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
[C ₇ H ₁₄ NO] (<i>continued</i>) 	Reduction of corresponding nitron with NaBH ₄ and oxidation with air ESR / 298 Methanol Chloroform Acetone Benzene Pentane	N: 1.545 H _β : 1.779 H _β : 2.410 N: 1.505 H _β : 1.725 H _β : 2.317 N: 1.471 H _β : 1.657 H _β : 2.248 N: 1.447 H _β : 1.642 H _β : 2.190 N: 1.403 H _β : 1.549 H _β : 2.077	91Zha1

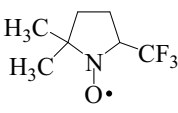
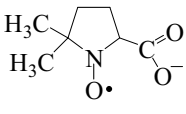
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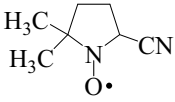
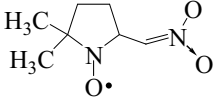
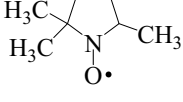
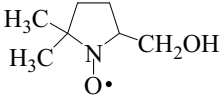
[C ₇ H ₁₄ NO] 	Reduction of corresponding nitron with NaBH ₄ and oxidation with air ESR / 298 Water Methanol Chloroform Acetone Benzene Pentane	N: 1.691 H _β : 1.691 H _β : 2.766 N: 1.549 H _β : 1.549 H _β : 2.522 N: 1.525 H _β : 1.525 H _β : 2.449 N: 1.476 H _β : 1.476 H _β : 2.380 N: 1.457 H _β : 1.457 H _β : 2.331 N: 1.398 H _β : 1.398 H _β : 2.239	91Zha1
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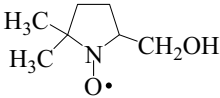
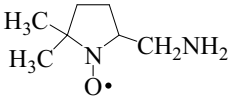
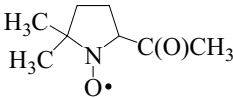
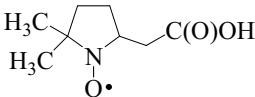
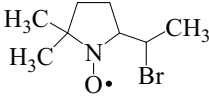
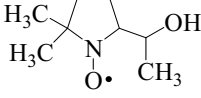
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_9H_{18}NO_2]$ 	Reduction of 5,5-dimethyl-3-(2-ethoxycarbonyl)ethyl-1-pyrroline <i>N</i> -oxide with NaBH ₄ and oxidation with air ESR / 298	N: 1.458 H _β : 1.458 H _β : 2.329	90Zha2
$[C_{10}H_{18}NO_3]$ 	Reduction of 5,5-dimethyl-3-(2-methoxycarbonyl)ethyl-1-pyrroline <i>N</i> -oxide with NaBH ₄ and oxidation with air ESR / 298	N: 1.455 H _β : 1.455 H _β : 2.329	90Zha1
$[C_{12}H_{16}NO]$ 	Oxidation of corresponding hydroxylamine with air Benzene ESR / 298	N: 1.425 H _β : 1.425 H _β : 2.338	96Mat1
$[C_{17}H_{18}NO]$ 	Oxidation of corresponding hydroxylamine with air Benzene (Toluene) ESR / 298	N: 1.375 H _β : 1.75 H _β : 2.213 2H _γ : 0.0112 3H _γ : 0.0371 H _γ : 0.0166 H _γ : 0.0410 H _γ : 0.0645	96Mat1, 98Mat1

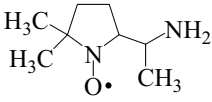
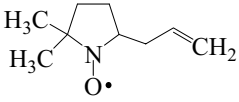
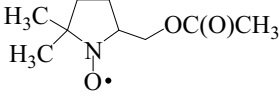
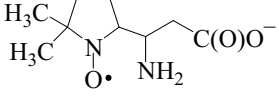
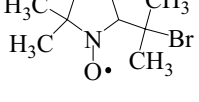
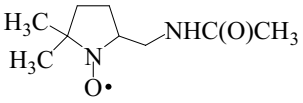
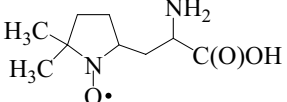
12.3.1.3.3 2,2,5-Trisubstituted pyrrolidiny-*N*-oxyls

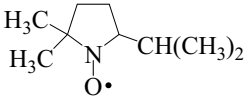
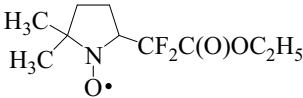
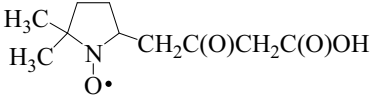
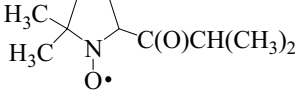
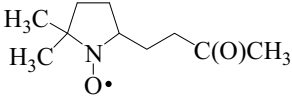
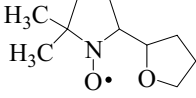
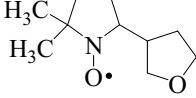
12.3.1.3.3.1 5-XR-Substituted 2,2-dimethylpyrrolidine-*N*-oxyls [X = Carbon]

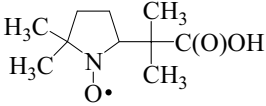
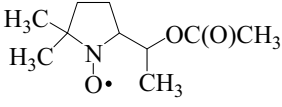
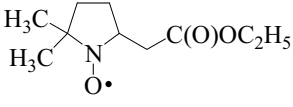
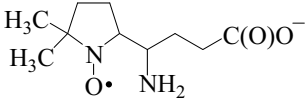
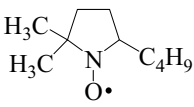
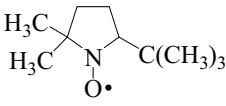
$[C_7H_{11}F_3NO]$ 	Reduction of corresponding nitron and oxidation with air Benzene ESR / 298	N: 1.320 3F: 0.114 H _β : 1.540	95Jan1
$[C_7H_{11}NO_3^-]$ 	Photolysis of DMPO, tetrabutylammonium (¹³ C) formate and H ₂ O ₂ Ethyl acetate ESR / 298 Reaction of amino acids, HOCl/CIO ⁻ and DMPO Water ESR / 298	N: 1.46 H _β : 1.64 ¹³ C _β : 1.16 N: 1.56 H _β : 1.88 ¹³ C _β : 1.21	99Ebel 97Par1, 98Haw1, 99Ebel

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_7H_{11}N_2O]$ 	Dark reaction of TCNE with DMPO Ethyl acetate/water or ACN or CH_2Cl_2 ESR / 298 Reaction of mitochondrial cytochrome c oxidase, KCN and DMPO Water ESR / 298	N: 1.35 to 1.37 H_β : 2.06 to 2.12 H_γ : 0.077 to 0.088 N: 1.543 H_β : 1.890	99Ebe1 99Che1
$[C_7H_{11}N_2O_3^-]$ 	Dark reaction of DMPO and aci-NM Photolysis of DMPO, NM and RB in the presence of DTPA Aqueous NaOH (0.2 M) ESR / 298	N: 1.608 H_β : 2.357	94Bil1
$[C_7H_{14}NO]$ 	Reaction of DMPO with ^{13}C -methylmagnesium iodide and oxidation ESR / 298 Toluene Methanol Water Photolysis of oxygenated reduced form of H_2LFe and 5-D-2,2,5-trimethyl- <i>N</i> -hydroxy pyrroline DMSO ESR / 298 $H_2LFe = N5,N6$ -Thiodipropionyl-bis[$N1,N10$ -bis(2,3-dihydroxy benzoylspermidine)]- Fe^{III} complex.	2.0058 ₈ N: 1.425 H_β : 2.064 $^{13}C_\beta$: 0.665 2.0056 ₀ N: 1.528 H_β : 2.184 $^{13}C_\beta$: 0.714 2.0053 ₉ N: 1.635 H_β : 2.371 $^{13}C_\beta$: 0.763 N: 1.658 D: 0.349	88Hai1 99Che2
$[C_7H_{14}NO_2]$  (continued)	Photolysis of DMPO, ^{13}C -methanol and benzophenone Toluene ESR / 298	2.0057 ₀ N: 1.471 H_β : 2.166 $^{13}C_\beta$: 0.749	88Hai1

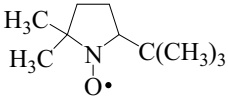
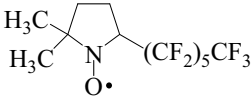
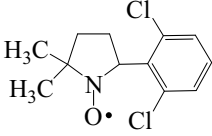
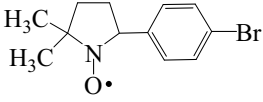
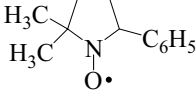
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₇H₁₄NO₂] (<i>continued</i>)</p> 	<p>Photolysis of DMPO, ¹³C-methanol and benzo- phenone ESR / 298 Methanol</p> <p>Water</p>	<p>2.0056₃ N: 1.519 H_β: 2.138 ¹³C_β: 0.842</p> <p>2.0053₉ N: 1.592 H_β: 2.256 ¹³C_β: 0.881</p>	88Hai1
<p>[C₇H₁₅N₂O]</p> 	<p>Photolysis of glycine, Fe^{III}T2MpPyP and DMPO Water, pH 9.0 ESR / 298</p>	<p>N: 1.56 H_β: 2.32</p>	97Gil1
<p>Fe^{III}T2MpPyP = Iron(III)tetrakis(2-<i>N</i>-methylpyridyl)porphyrin. No substantial spectral change upon protonation of the amino group (pH 3.1).</p>			
<p>[C₈H₁₄NO₂]</p> 	<p>Reaction of H₂O₂ and methylglyoxal in the presence of DMPO Phosphate buffer, pH 6.8 Photolysis of DMPO and methyl alkyl ketones ESR / 310</p>	<p>2.0056 N: 1.49 H_β: 1.82</p>	93Nuk1, 98Ada1
<p>[C₈H₁₄NO₃]</p> 	<p>Photolysis of malonic acid, Fe^{III}T2MpPyP and DMPO Water, pH 2.9 ESR / 298</p>	<p>2.0060 N: 1.534 H_β: 2.301</p>	96Gil1
<p>[C₈H₁₅NBrO]</p> 	<p>Photolysis of 2-bromo- propanoic acid, DMPO and Fe^{III}T2MpPyP Water, pH 2.9 ESR / 298</p>	<p>2.0060 N: 1.562 H_β: 2.301</p>	96Gil1
<p>[C₈H₁₆NO₂]</p> 	<p>Photolysis of sodium nitrite and DMPO Ethanol Water, pH 2.9 ESR / 298</p>	<p>2.0060 N: 1.607 H_β: 2.335</p>	92Bil1

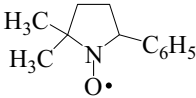
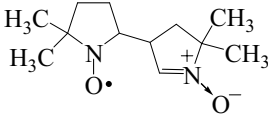
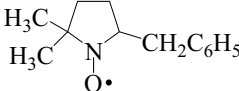
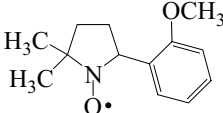
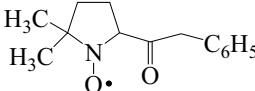
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_8H_{17}N_2O]$ 	Photolysis of L-alanine, $Fe^{III}T2MpPyP$ and DMPO Water, pH 9 ESR / 298	N: 1.58 H_β : 2.32	97Gil1
$[C_9H_{16}NO]$ 	Photolysis of vinylacetic acid, $Fe^{III}T2MpPyP$ and DMPO Water, pH 2.9 ESR / 298	2.0060 N: 1.589 H_β : 2.247	96Gil1
$[C_9H_{16}NO_3]$ 	Photolysis of H_2O_2 and DMPO in ethyl acetate ESR / 298	N: 1.45 H_β : 2.05	99Ebe1
$[C_9H_{16}N_2O_3]^-$ 	Photolysis of L-aspartic acid, $Fe^{III}T2MpPyP$ and DMPO Water, pH 9 ESR / 298	N: 1.57 H_β : 2.24	97Gil1
$[C_9H_{17}BrNO]$ 	Photolysis of 2-bromo-2-methylpropanoic acid, $Fe^{III}T2MpPyP$ and DMPO Water, pH 2.9 ESR / 298	2.0060 N: 1.553 H_β : 2.180	96Gil1
$[C_9H_{17}N_2O_2]$ 	Photolysis of <i>N</i> -acetyl-glycine, $Fe^{III}T2MpPyP$ and DMPO Water, pH 6.1 ESR / 298	N: 1.56 H_β : 2.22	97Gil1
$[C_9H_{17}N_2O_3]$ 	Reaction of $HOCl/ClO^-$ with alanine and DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.58 H_β : 2.23	98Haw1

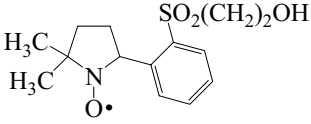
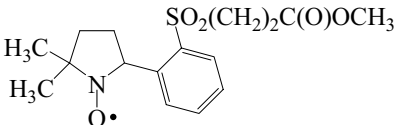
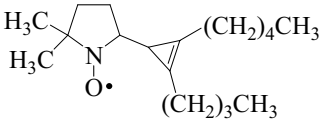
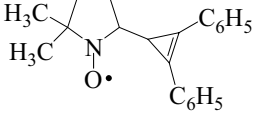
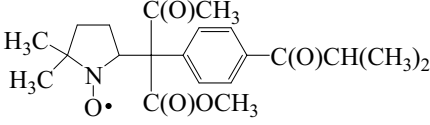
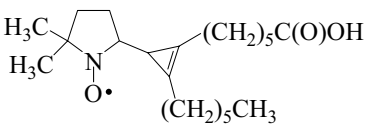
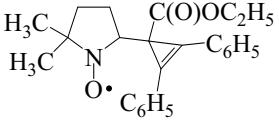
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₉ H ₁₈ NO] 	Photolysis of isobutyric acid, Fe ^{III} T2MpPyP and DMPO ESR / 298 Water Benzene	2.0060 N: 1.615 H _β : 2.295 N: 1.411 H _β : 2.142	93Gil1, 96Gil1 94Jan1
Fe ^{III} T2MpPyP = Iron(III)tetrakis(2- <i>N</i> -methylpyridyl)porphyrin.			
[C ₁₀ H ₁₆ F ₂ NO ₃] 	Reaction of DMPO and ethyl iododifluoroacetate with Zn and NiCl ₂ ·6H ₂ O Benzene ESR / 298	2.0058 N: 1.40 H _β : 1.91 H _γ : 0.08	00Jul1
[C ₁₀ H ₁₆ NO ₄] 	Photolysis of 3-oxopentanedioic acid, DMPO and Fe ^{III} T2MpPyP Water ESR / 298	2.0060 N: 1.424 H _β : 2.384	96Gil1
[C ₁₀ H ₁₈ NO ₂] 	Photolysis of 3-methyl-2-oxobutanoic acid, Fe ^{III} T2MpPyP and DMPO Water ESR / 298	2.0060 N: 1.507 H _β : 1.849	96Gil1
[C ₁₀ H ₁₈ NO ₂] 	Photolysis of 4-oxopentanoic acid, DMPO and Fe ^{III} T2MpPyP Water ESR / 298	2.0060 N: 1.589 H _β : 2.274	96Gil1
[C ₁₀ H ₁₈ NO ₂] 	Reaction of TFH, Fe ^{II} and H ₂ O ₂ in the presence of DMPO THF ESR / 298	N: 1.557 H _β : 1.954	91Zha1
[C ₁₀ H ₁₈ NO ₂] 	Reaction of TFH, Fe ^{II} and H ₂ O ₂ in the presence of DMPO THF ESR / 298	N: 1.581 H _β : 2.218	91Zha1

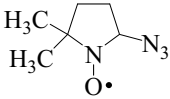
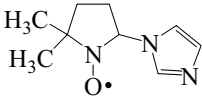
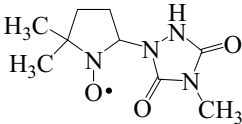
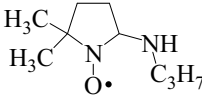
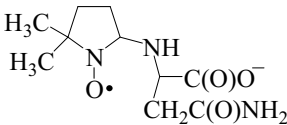
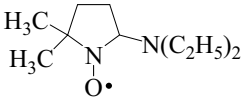
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{10}H_{18}NO_3]$ 	Photolysis of DMPO, 2,2-dimethylmalonic acid and $Fe^{III}T2MpPyP$ Water ESR / 298 $Fe^{III}T2MpPyP$ = Iron(III)tetrakis(2- <i>N</i> -methylpyridyl)porphyrin.	2.0060 N: 1.534 H_β : 2.630	96Gil1
$[C_{10}H_{18}NO_3]$ 	Photolysis of H_2O_2 and DMPO in ethyl acetate ESR / 298	<i>Diastereomer I</i> N: 1.42 H_β : 1.90 <i>Diastereomer II</i> N: 1.44 H_β : 2.06	98Ebel
$[C_{10}H_{18}NO_3]$ 	Reaction of ethyl iodo- acetate with Zn and $NiCl_2 \cdot 6H_2O$ in the pres- ence of DMPO Benzene ESR / 298	2.0058 N: 1.46 H_β : 2.20	00Jul1
$[C_{10}H_{18}N_2O_3]^-$ 	Photolysis of DMPO, 4-aminobutyric acid and $Fe^{III}T2MpPyP$ Water, pH 10.0 ESR / 298	N: 1.58 H_β : 2.27	97Gil1
$[C_{10}H_{20}NO]$ 	Reaction of <i>n</i> -butyl iodide with Zn and $NiCl_2 \cdot 6H_2O$ in the pres- ence of DMPO Benzene ESR / 298	2.0058 N: 1.46 H_β : 2.11	90Zha1, 00Jul1
$[C_{10}H_{20}NO]$ 	Thermolysis of <i>tert</i> - butyldiazene in the presence of DMPO ESR / 298 <i>n</i> -Hexane Benzene Chloroform Ethanol Acetic acid Water	N: 1.393 H_β : 1.994 N: 1.430 H_β : 2.058 N: 1.491 H_β : 2.116 N: 1.516 H_β : 2.168 N: 1.565 H_β : 2.209 N: 1.637 H_β : 2.341	

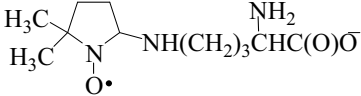
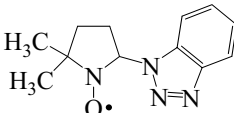
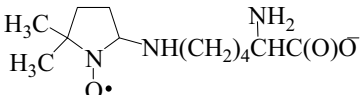
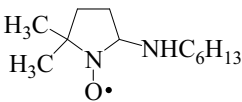
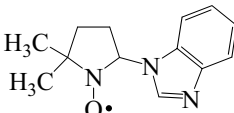
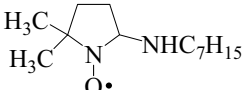
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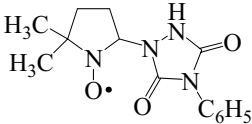
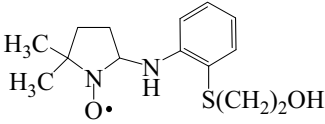
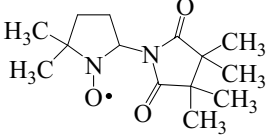
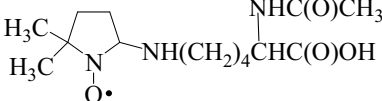
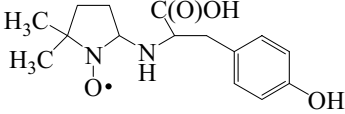
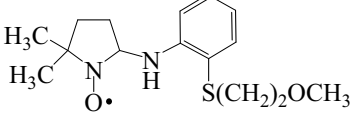
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₀H₂₀NO] (<i>continued</i>)</p> 	<p>Photolysis of pivalic acid, FeIII4TMPyP and DMPO Water ESR / 298</p>	<p>N: 1.625 H_β: 2.320</p>	93Gil1
<p>[C₁₂H₁₁F₁₃NO]</p> 	<p>Reaction of <i>n</i>-perfluorohexyl chloride with Zn and NiCl₂·6H₂O in the presence of DMPO Benzene ESR / 298</p>	<p>2.0062 N: 1.35 H_β: 1.45</p>	00Jul1
<p>[C₁₂H₁₄Cl₂NO]</p> 	<p>Photolysis of azo(2,6-dichlorophenyl)-isobutyronitrile and DMPO ESR / 295 Water Chloroform, Benzene, Toluene</p>	<p>2.0061 N: 1.504 H_β: 2.124 2.0061 N: 1.36 H_β: 1.93</p>	91Cho1
<p>[C₁₂H₁₅BrNO]</p> 	<p>Photolysis of azo(4-bromophenyl)-isobutyronitrile and DMPO ESR / 295 Ethanol Chloroform Benzene, Toluene, Carbon tetrachloride</p>	<p>2.0061 N: 1.504 H_β: 2.205 2.0061 N: 1.45 H_β: 2.06 2.0062 N: 1.39 H_β: 1.96</p>	91Cho1
<p>[C₁₂H₁₆NO]</p>  <p>(<i>continued</i>)</p>	<p>Reduction of 2-¹³C-2-phenyl-5,5-dimethylpyrrolidine-<i>N</i>-oxide with sodium borohydride and air oxidation ESR / 298 <i>n</i>-Hexane Benzene Chloroform</p>	<p>N: 1.362 ¹³C_α: 0.594 H_β: 1.834 N: 1.370 ¹³C_α: 0.591 H_β: 1.937 N: 1.449 ¹³C_α: 0.594 H_β: 2.034</p>	94Jan1, 94Jan2

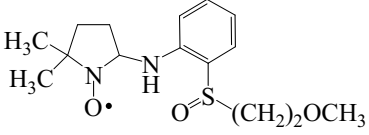
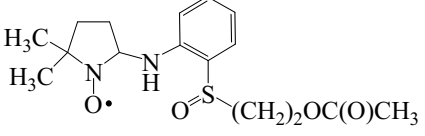
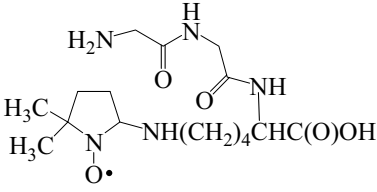
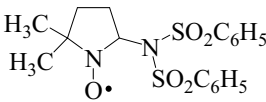
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₂H₁₆NO] (<i>continued</i>)</p> 	<p>Reduction of 2-¹³C-2-phenyl-5,5-dimethylpyrrolidine-<i>N</i>-oxide with sodium borohydride and air oxidation ESR / 298 Ethanol</p> <p>Acetic acid</p> <p>Water</p>	<p>N: 1.465 ¹³C_α: 0.611 H_β: 2.136</p> <p>N: 1.527 ¹³C_α: 0.675 H_β: 2.221</p> <p>N: 1.584 ¹³C_α: 0.656 H_β: 2.450</p>	<p>9aJan1, 94Jan2</p>
The correlation between a_N and solvent polarity [$E_{T(30)}$] is shown.			
<p>[C₁₂H₂₁N₂O₂]</p> 	<p>Photolysis of DMPO in acetone ESR / 298</p>	<p>2.0056 N: 1.56 H_β: 2.28</p>	<p>98Ada1</p>
<p>[C₁₃H₁₈NO]</p> 	<p>Photolysis of phenylacetic acid (or 3-phenyl-2-oxopropanoic acid) and Fe^{III}T2MpPyP in the presence of DMPO Water, pH 2.9 ESR / 298</p> <p>Photolysis of pyridine-2-thione in toluene ESR / 298</p>	<p>N: 1.600 H_β: 2.240</p> <p>N: 1.42 H_β: 2.06</p>	<p>93Gil1, 96Gil1</p> <p>94Res1</p>
Fe ^{III} T2MpPyP = Iron(III)tetrakis(2- <i>N</i> -methylpyridyl)porphyrin.			
<p>[C₁₃H₁₈NO₂]</p> 	<p>Photolysis of azo(2-anisyl)-isobutyronitrile and DMPO ESR / 295 Ethanol</p> <p>Water</p>	<p>2.0061 N: 1.509 H_β: 2.14</p> <p>2.0060 N: 1.59 H_β: 2.407</p>	<p>91Cho1</p>
<p>[C₁₄H₁₈NO₂]</p> 	<p>Photolysis of 3-phenyl-2-oxopropanoic acid) and Fe^{III}T2MpPyP in the presence of DMPO Water, pH 2.9 ESR / 298</p>	<p>N: 1.567 H_β: 1.863</p>	<p>96Gil1</p>

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₄H₂₀NO₄S]</p> 	<p>Reaction of isoamyl nitrite with 2-[(2-hydroxyethyl)sulphonyl]aniline in the presence of DMPO Benzene ESR / 298</p>	<p>N: 1.45 H_β: 2.22</p>	90Nag1
<p>[C₁₆H₂₂NO₅S]</p> 	<p>Reaction of isoamyl nitrite, 2-[(2-acetoxyethyl)sulphonyl]aniline and DMPO Benzene ESR / 298</p>	<p>N: 1.41 H_β: 2.12</p>	90Nag1
<p>[C₁₈H₃₂NO]</p> 	<p>Photolysis of substituted <i>N</i>-(2-cyclopropenylcarbonyloxy)-phthalimide and DMPO Benzene ESR / 298</p>	<p>2.0060 N: 1.475 H_β: 2.125</p>	99Can1
<p>[C₂₁H₂₂NO]</p> 	<p>Photolysis of substituted <i>N</i>-(2-cyclopropenylcarbonyloxy)-phthalimide and DMPO Benzene ESR / 298</p>	<p>2.0062 N: 1.45 H_β: 2.20</p>	99Can1
<p>[C₂₁H₂₈NO₅]</p> 	<p>Photolysis of appropriate bromoacetoacetate in the presence of DMPO Benzene ESR / 298</p>	<p>2.0057 N: 1.438 H_β: 2.331</p>	95Ton1
<p>[C₂₁H₃₆NO₃]</p> 	<p>Photolysis of substituted <i>N</i>-(2-cyclopropenylcarbonyloxy)-phthalimide and DMPO Benzene ESR / 298</p>	<p>2.0062 N: 1.50 H_β: 2.225</p>	99Can1
<p>[C₂₄H₂₆NO₃]</p> 	<p>Photolysis of substituted <i>N</i>-(2-cyclopropenylcarbonyloxy)-phthalimide and DMPO Benzene ESR / 298</p>	<p>2.0060 N: 1.55 H_β: 2.425</p>	99Can1

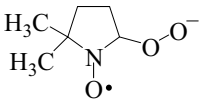
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
12.3.1.3.3.2 5-XR-Substituted 2,2-dimethylpyrrolidine-N-oxyls [X = Nitrogen]			
$[C_6H_{11}N_4O]$ 	Reaction of mitochondrial cytochrome c oxidase, $Na(^{15}N)N_3$, H_2O_2 and DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.48 H_β : 1.42 N_β : 0.31 [^{15}N : 0.43]	99Che1
$[C_9H_{14}N_3O]$ 	Reaction of imidazole, TBACoW and DMPO ACN ESR / 298	N: 1.32 H_β : 1.510 N_β : 0.450	97Alb
TBACoW = Tetrabutylammonium dodecatungstocobalt(III)ate.			
$[C_9H_{15}N_4O_3]$ 	Reaction of 4-methyl-1,2,4-triazolin-3,5-dione with DMPO ESR / 298 CH_2Cl_2 DMSO	2.0056 N: 1.295 H_β : 1.770 N_β : 0.255 2.0059 N: 1.426 H_β : 1.917 N_β : 0.269	99Als1
Also values in ACN, THF, CCl_4 , and Et_2O .			
$[C_9H_{19}N_2O]$ 	Photolysis of ZnO and propylamine in the presence of DMPO Heptane ESR / 298	N: 1.368 H_β : 1.606 N_β : 0.168	89Che1
$[C_{10}H_{17}N_3O_4]^-$ 	Reaction of $HOCl/ClO^-$ with asparagine in the presence of DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.54 H_β : 1.79 N_β : 0.25	98Haw1
$[C_{10}H_{21}N_2O]$ 	Photolysis of ZnO and diethylamine in the presence of DMPO Heptane ESR / 298	N: 1.413 H_β : 1.607 N_β : 0.191	89Che1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{21}N_3O_3]^-$ 	Reaction of HOCl/CIO ⁻ with ornithine in the presence of DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.46 H _β : 1.80 N _β : 0.30	98Haw1
$[C_{12}H_{15}N_4O]$ 	Reaction of benzotriazole, TBACoW and DMPO ESR / 298 ACN CH ₂ Cl ₂	N: 1.35 H _β : 1.540 N _β : 0.386 N: 1.336 H _β : 1.396 N _β : 0.403	97Alb
TBACoW = Tetrabutylammonium dodecatungstocobalt(III)ate.			
$[C_{12}H_{23}N_3O_3]^-$ 	Reaction of HOCl/CIO ⁻ with lysine in the presence of DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.49 H _β : 1.82 N _β : 0.29	98Haw1
No substantial spectral variations at pH 4.			
$[C_{12}H_{25}N_2O]$ 	Photolysis of ZnO and hexylamine in the presence of DMPO Heptane ESR / 298	N: 1.390 H _β : 1.600 N _β : 0.170	89Che1
$[C_{13}H_{16}N_3O]$ 	Reaction of benzimidazole, TBACoW and DMPO ESR / 298 ACN CH ₂ Cl ₂	N: 1.35 H _β : 1.630 N _β : 0.320 N: 1.31 H _β : 1.640 N _β : 0.352	97Alb
$[C_{13}H_{27}N_2O]$ 	Photolysis of ZnO and heptylamine in the presence of DMPO Heptane ESR / 298	N: 1.364 H _β : 1.568 N _β : 0.168	89Che1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₄H₁₇N₄O₃]</p> 	<p>Reaction of 4-phenyl-1,2,4-triazoline-3,5-dione with DMPO ESR / 298 THF CH₂Cl₂</p>	<p>2.0059 N: 1.315 H_β: 1.831 N_β: 0.250</p> <p>2.0059 N: 1.435 H_β: 1.965 N_β: 0.281</p>	99Als1
Also values in ACN, DMSO, CCl ₄ , and Et ₂ O.			
<p>[C₁₄H₂₁N₂O₂S]</p> 	<p>Reaction of isoamyl nitrite, 2-[(2-hydroxyethyl)sulphinyl]aniline and DMPO Benzene ESR / 298</p>	<p>N: 1.40 H_β: 1.41 N_β: 0.29</p>	90Nag1
<p>[C₁₄H₂₃N₂O₃]</p> 	<p>Reaction of tetramethylsuccinimide and TBPA in the presence of DMPO CH₂Cl₂ ESR / 298</p>	<p>N: 1.39 H_β: 2.07 N_β: 0.21 H_γ: 0.015</p>	94Ebe1
TBPA = Tris(4-bromophenyl)aminium hexachloroantimonate.			
<p>[C₁₄H₂₆N₃O₄]</p> 	<p>Reaction of HOCl/CIO⁻ with <i>N</i>-acetyl lysine in the presence of DMPO Phosphate buffer pH 7.4 ESR / 298</p>	<p>N: 1.49 H_β: 1.80 N_β: 0.28</p>	98Haw1
<p>[C₁₅H₂₁N₂O₄]</p> 	<p>Reaction of HOCl/CIO⁻ with tyrosine in the presence of DMPO Phosphate buffer pH 7.4 ESR / 298</p>	<p>N: 1.46 H_β: 1.79 N_β: 0.29</p>	98Haw1
<p>[C₁₅H₂₃N₂O₂S]</p> 	<p>Reaction of isoamyl nitrite, 2-[(2-methoxyethyl)sulphinyl]aniline and DMPO Benzene ESR / 298</p>	<p>N: 1.39 H_β: 1.41 N_β: 0.29</p>	90Nag1

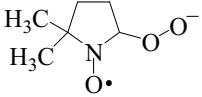
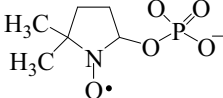
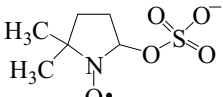
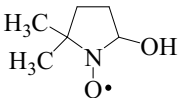
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{15}H_{23}N_2O_3S]$ 	Reaction of isoamyl nitrite, 2-[(2-methoxyethyl)sulphonyl]aniline and DMPO Benzene ESR / 298	N: 1.37 H_β : 1.39 N_β : 0.32	90Nag1
$[C_{16}H_{23}N_2O_4S]$ 	Reaction of isoamyl nitrite, 2-[(2-acetoxyethyl)sulphonyl]aniline and DMPO Benzene ESR / 298	N: 1.37 H_β : 1.39 N_β : 0.32	90Nag1
$[C_{16}H_{30}N_5O_5]$ 	Reaction of HOCl/CIO ⁻ with glycylglycyllysine in the presence of DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.49 H_β : 1.82 N_β : 0.29	98Haw1
$[C_{18}H_{21}N_2O_5S_2]$ 	Photolysis ($\lambda > 400$ nm) of (PhSO ₂) ₂ NH and DMPO CH ₂ Cl ₂ ESR / 298	N: 1.42 H_β : 1.98 N_β : 0.286	97Ebe1
The same spectrum is observed by thermal reaction.			

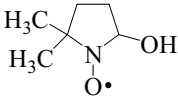
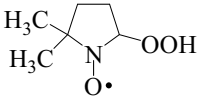
12.3.1.3.3.3 5-XR-Substituted 2,2-dimethylpyrrolidine-*N*-oxyls [X = Oxygen]

$[C_6H_{11}NO_3]^-$ 	Addition of DMPO to a solution of KO ₂ and 18-crown-6 ether Toluene Photolysis of oxygen containing solutions of {A ²⁺ [Pt(mnt) ₂] ²⁻ } and DMPO Propylene carbonate ESR / 298	N: 1.274 H_β : 1.041 H_γ : 0.14	94Res1, 97Amm1
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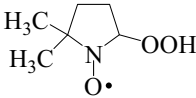
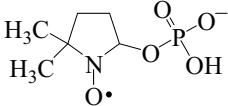
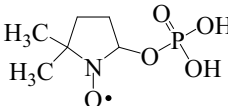
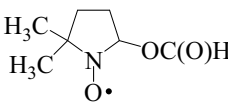
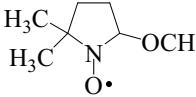
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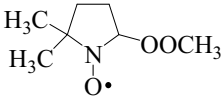
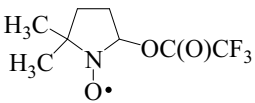
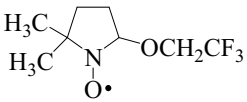
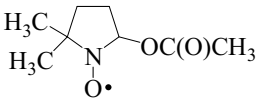
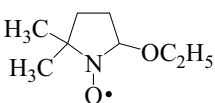
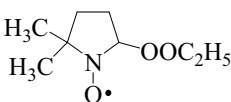
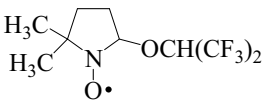
{A²⁺[Pt(mnt)₂]²⁻} – (A²⁺ = 2,2',-4,4'-bipyridinium or cycloalkylated biimidazolium dication; mnt²⁻ = maleonitriledithiolate).

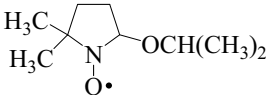
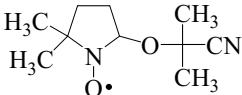
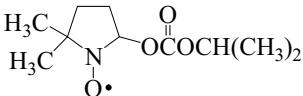
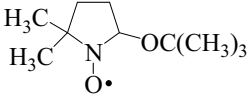
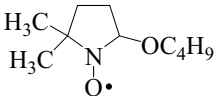
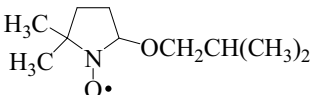
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_6\text{H}_{11}\text{NO}_3]^-$ (<i>continued</i>) 	Addition of DMPO to a solution of KO_2 and 18-crown-6 ether ACN (DMSO) Photolysis of oxygen containing solutions of pyridine 2-thione and DMPO Water, pH 7 Reaction of manganese peroxidase, Mn^{II} and H_2O_2 in the presence of DMPO Sodium acetate buffer ESR / 298	N: 1.42 H_β : 1.20 H_γ : 0.13	89Kim1, 94Res1, 97Amm1, 00Wat1
$[\text{C}_6\text{H}_{11}\text{NO}_3\text{P}]^{2-}$ 	Photolysis of peroxydiphosphate and DMPO Water ESR / 298	N: 1.42 H_β : 1.47 H_γ : 0.10 ^{31}P : 0.53	92Dav1
$[\text{C}_6\text{H}_{11}\text{NO}_3\text{S}]^-$ 	Photolysis of DMPO and persulphates Water ESR / 298	N: 1.42 H_β : 1.47 H_γ : 0.10 ^{31}P : 0.53	92Dav1
$[\text{C}_6\text{H}_{12}\text{NO}_2]$ 	Reaction of ^{17}O - H_2O_2 and Fe^{II} in the presence of DMPO Phosphate buffer pH 7.4 Photolysis of DMPO in (^{17}O)- H_2O_2^* ^{17}O -Aerobic incubation of NADPH, ferredoxin, ferredoxin:NADP $^+$ oxidoreductase Phosphate buffer pH 7.4 γ -Irradiation of ice containing DMPO at 203 K and annealing to room temperature γ -Irradiation of DMPO in CFCl_3 containing water at 77 K and annealing to room temperature ESR / 298	2.0054 N: 1.492 H_β : 1.492 $^{17}\text{O}_\beta$: 0.466	88Hai2, 88Mor1, 90Zha2, 91Lur1, 91Zha1, 92Bill1, 92Cha1, 92Dav1, 92Mak1, 93Jia1, 97Llo1, 95Jan1, 96Bha1, 96Bill1, 96Yos1, 97Par1, 98Ada1, 98Sár1
(<i>continued</i>)	* PEDRI, Proton-Electron Double-Resonance Imaging.		

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₆H₁₂NO₂] (<i>continued</i>)</p> 	<p>Photolysis of water, benzene, F-PPP-<i>n</i>[*] and DMPO ESR / 298</p> <p>Photolysis of MMPP[▲] and DMPO in aqueous solution Photolysis of DMPO and furocoumarin hydroperoxides ACN Photolysis of 2-thione-pyridine <i>N</i>-oxide and DMPO Water, pH 7 Photolysis of TiO₂ particles in air-saturated aqueous solutions containing DMPO Reaction of DMPO TBPA and Bu₄NF:3H₂O CH₂Cl₂ ESR (ENDOR) / 298</p> <p>γ-Radiation of DMPO or <i>d</i>₃-DMPO Phosphate buffer pH 7.8 ESR / 298</p> <p>Reaction of LP₃, DMPO, MnO₂ and 1,3-diphenylguanidine Toluene ESR / 298</p>	<p>2.006 N: 1.32 H_β: 1.32</p> <p>2.0053 N: 1.42 H_β: 1.42</p> <p>N: 1.48 H_β: 1.48 [D_β: 2.26]</p> <p>2.0061 N: 1.45 H_β: 1.27</p>	<p>95Kit1</p> <p>91Gil1, 94Res1, 95Ada1, 95Rie1</p> <p>93Hal1</p> <p>92Coa1</p>
<p>[C₆H₁₂NO₃]</p>  <p>(<i>continued</i>)</p>	<p>Autoxidation of 1,8-dihydroxy-9-anthrone in the presence of DMPO DMSO ESR / 298</p> <p>Reaction of LP₃, DMPO, MnO₂ and triethyl amine Toluene ESR / 298</p>	<p>N: 1.29 H_β: 1.04 H_γ: 0.14</p> <p>N: 1.37 H_β: 1.04</p>	<p>87Bru1</p> <p>92Coa1</p>

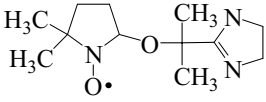
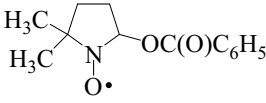
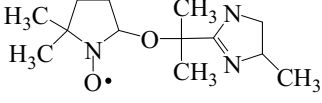
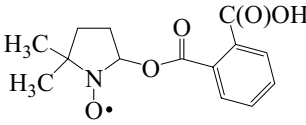
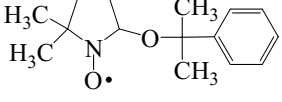
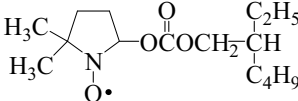
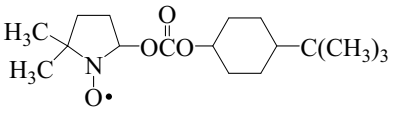
^{*} F-PPP-*n* = Rh-deposited perfluorinated poly(*p*-phenylene).
[▲] MMPP = Magnesium monoperoxyphthalate.
 TBPA = Tris(4-bromophenyl)aminium hexachloroantimonate.
 LP₃ = Liquid polysulfide polymers.

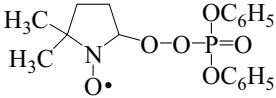
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>$[\text{C}_6\text{H}_{12}\text{NO}_3]$ (<i>continued</i>)</p> 	<p>Reaction of xanthine, xanthine oxidase, DPTA and (d_3)-(d_{11})-DMPO ESR / 298</p> <p>Photolysis of 2-thione-pyridine N-oxide and DMPO Water, pH 7 Reaction of H_2O_2, Fe^{II} and DMPO ESR (ENDOR) / 298</p>	<p>N: 1.43 H_β: 1.14 [D_β: 0.176] H_γ: 0.125 [D_γ: 0.019]</p> <p>N: 1.43 H_β: 1.15 H_γ: 0.13</p>	<p>93Hal1</p> <p>92Mak1, 94Res1</p>
<p>$[\text{C}_6\text{H}_{12}\text{NO}_3\text{P}]^-$</p> 	<p>Photolysis of $\text{Na}_4\text{P}_2\text{O}_8$ and DMPO Phosphate buffer pH 7.4 ESR / 298</p>	<p>N: 1.42 H_β: 1.47 H_γ: 0.10* ^{31}P: 0.53*</p>	<p>92Dav1</p>
* Assignment might be reversed.			
<p>$[\text{C}_6\text{H}_{13}\text{NO}_3\text{P}]$</p> 	<p>Photolysis of $\text{Na}_4\text{P}_2\text{O}_8$ and DMPO Phosphate buffer pH 1.5 ESR / 298</p>	<p>N: 1.42 H_β: 1.16 H_γ: 0.16* ^{31}P: 0.27*</p>	<p>92Dav1</p>
* Assignment might be reversed.			
<p>$[\text{C}_7\text{H}_{12}\text{NO}_3]$</p> 	<p>Photolysis ($\lambda > 400$ nm) of chloranil, DMPO and (d_2)-$\text{HC}(\text{O})\text{OH}$ CH_2Cl_2 ESR / 298</p>	<p>N: 1.26 H_β: 1.01 H: 0.074 H: 0.097 H: 0.190 [D: n.r.]</p>	<p>97Ebe2, 99Ebe1</p>
<p>$[\text{C}_7\text{H}_{14}\text{NO}_2]$</p> 	<p>Reaction of methanol and DMPO with PbO_2 or MnO_2 Methanol Photolysis of methane-water gas mixtures containing DMPO Benzene Thermolysis (323–343 K) of $\text{H}_3\text{COSSOCH}_3$ in the presence of DMPO Benzene ESR / 298</p>	<p>2.0061 N: 1.36 H_β: 0.75</p>	<p>87Shc1, 89Mig1, 96Bor1</p>

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_7H_{14}NO_3]$ 	Reaction of cytochrome P450 1A2 with cumene hydroperoxide and DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.45 H_β : 1.075 H_γ : 0.130	96Bar1
$[C_8H_{11}F_3NO_3]$ 	Photolysis of DMPO, chloranil and trifluoroacetic acid CH_2Cl_2 ESR / 298	N: 1.40 H_β : 1.24	97Ebe2
$[C_8H_{13}F_3NO_2]$ 	Photolysis of chloranil, CF_3CH_2OH and DMPO CH_2Cl_2 ESR / 298	N: 1.293 H_β : 0.789 H_γ : 0.194	99Ebe1
$[C_8H_{14}NO_3]$ 	Reaction of acetic acid, DMPO and TBPA Photolysis of chloranil, DMPO and acetic acid CH_2Cl_2 ESR / 298 TBPA = Tris(4-bromophenyl)aminium hexachloroantimonate. The same spectra were observed using d_4 -acetic acid.	N: 1.26 H_β : 1.03 H_γ : 0.109 3H: 0.018 3H: 0.036	94Ebe1, 97Ebe2
$[C_8H_{16}NO_2]$ 	Photolysis of $NaNO_2$ and DMPO Ethanol Thermolysis (323–343 K) of diethoxydisulfide and DMPO Benzene ESR / 298	N: 1.350 H_β : 0.74 H_γ : 0.17 2.0061 N: 1.30 H_β : 0.70 H_γ : 0.20	92Bill 96Bor1
$[C_8H_{16}NO_3]$ 	Incubation of DMPO, ethylhydroperoxide and polymorphonuclear leukocytes Phosphate buffer pH 7.4 ESR / 298	N: 1.470 H_β : 1.114 H_γ : 0.129	91Cha1
$C_9H_{12}F_6NO_2]$ 	Photolysis of chloranil, DMPO in hexafluoro-2-propanol Neat alcohol ESR / 298	N: 1.396 H_β : 0.759 H_γ : 0.201	99Ebe1

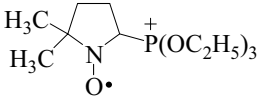
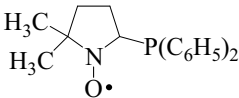
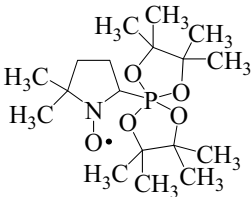
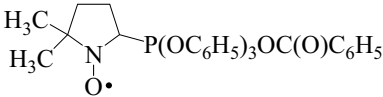
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_9\text{H}_{18}\text{NO}_2]$ 	ESR / 298 Thermolysis (323–343 K) of di(2-propoxy)disulfide in the presence of DMPO Benzene Photolysis of fluoranil, DMPO and isopropanol CH_2Cl_2 ESR / 298	2.0061 N: 1.343 H_β : 0.782 H_γ : 0.180	96Bor1, 99Ebe1
$[\text{C}_{10}\text{H}_{17}\text{N}_2\text{O}_2]$ 	Thermolysis of oxygen-containing solutions of AIBN and DMPO Benzene ESR / 298	N: 1.266 H_β : 0.837 H_γ : 0.189 H_γ : 0.062	90Jan1, 95Zha1
$[\text{C}_{10}\text{H}_{18}\text{NO}_4]$ 	Thermolysis (353 K) of <i>O</i> - <i>tert</i> -butyl <i>O</i> -isopropylmonoperoxy carbonate in the presence of DMPO Benzene ESR / 353	N: 1.244 H_β : 0.998 H_γ : 0.147 H_γ : 0.070	00Mek1
$[\text{C}_{10}\text{H}_{20}\text{NO}_2]$ 	Photolysis of BOOB in the presence of DMPO Toluene (Benzene) ESR 298 ENDOR / 200 to 230 Water ESR / 298 ♥ Only ENDOR measurement.	2.0061 N: 1.315 H_β : 0.762 H_γ : -0.195♥ H_γ : -0.072♥ H_γ : -0.031♥ $H_\gamma(\text{CH}_3)$: -0.012♥ N: 1.48 H_β : 1.60	88Hai2, 88Hai3, 91Zha1, 95Zha1, 96Bor1 88Hai2
$[\text{C}_{10}\text{H}_{20}\text{NO}_2]$ 	Photolysis of <i>n</i> -butyl nitrite and DMPO Benzene ESR / 298	N: 1.295 H_β : 0.635 H_γ : 0.196	95Zha1
$[\text{C}_{10}\text{H}_{20}\text{NO}_2]$ 	Photolysis of isobutyl nitrite and DMPO Thermolysis (323–353 K) of isobutoxydisulfide in the presence of DMPO Benzene ESR / 298	N: 1.293 H_β : 0.622 H_γ : 0.205	95Zha1, 96Bor1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{10}H_{20}NO_3]$ 	Incubation of DMPO, <i>tert</i> -butylhydroperoxide and polymorphonuclear leukocytes Phosphate buffer pH 7.4 ESR / 298	N: 1.459 H_β : 1.076 H_γ : 0.134	91Cha1
$[C_{10}H_{20}N_3O_2]$ 	Thermal decomposition of AAPH in the presence of DMPO Water ESR / 298 AAPH = 2,2'-azobis(2-methylpropionamidine) dihydrochloride. * Determined via computer simulation of spectral lineshape.	2.0084 N: 1.462 H_β : 1.529 H_γ : 0.071* $6H_\gamma$: 0.0224* $2H_\gamma$: 0.0135* H_γ : 0.0229*	96Kra1, 98Roj1
$[C_{11}H_{20}NO_3]$ 	Photolysis ($\lambda > 400$ nm) of chloranil, pivalic acid and DMPO CH_2Cl_2 ESR / 298	N: 1.27 H_β : 0.94 H_γ : 0.080 H_γ : 0.105	97Ebe2
$[C_{11}H_{22}NO_2]$ 	Photolysis of isoamyl nitrite and DMPO Benzene ESR / 298	N: 1.295 H_β : 0.642 H_γ : 0.199	95Zha1
$[C_{12}H_{15}N_2O_6S]$ 	Addition of an ACN solution of KO_2 and 18-crown-6 ether to a solution of DMPO and 2-nitrobenzenesulfonyl chloride ACN ESR / 298	N: 1.28 H_β : 1.00	89Kim1
$[C_{12}H_{15}N_2O_7S]$ 	Addition of an ACN solution of KO_2 and 18-crown-6 ether to a solution of DMPO and 2-nitrobenzenesulfonyl chloride ACN ESR / 298	N: 1.28 H_β : 1.01	89Kim1

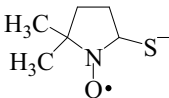
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{12}H_{22}N_3O_2]$ 	Thermal decomposition of VA-44 in the presence of DMPO Water, phosphate buffer ESR / 298	2.0084 N: 1.414 H_β : 1.452	98Roj1
$[C_{13}H_{16}NO_3]$ 	Photolysis ($\lambda > 400$ nm) of chloranil, benzoic acid and DMPO CH_2Cl_2 ESR / 298	N: 1.26 H_β : 0.97 $6H_\gamma$: 0.018 H_γ : 0.078 H_γ : 0.114	97Ebe2
Identical spectra observed when using fully deuterated benzoic acid.			
$[C_{13}H_{24}N_3O_2]$ 	Thermal decomposition of Me-VA-44 in the presence of DMPO Water, phosphate buffer ESR / 298	2.0084 N: 1.408 H_β : 1.451	98Roj1
$[C_{14}H_{16}NO_5]$ 	Photolysis of MMPP and DMPO Water, pH 7 ESR / 298	2.0060 N: 1.375 H_β : 1.025	91Gil1
MMPP = Magnesium monoperoxyphthalate.			
$[C_{15}H_{22}NO_2]$ 	Reaction of cytochrome P450 1A2 with cumene hydroperoxide and DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.48 H_β : 1.58	96Bar1
$[C_{15}H_{28}NO_4]$ 	Thermolysis (353 K) of bis(2-ethylhexyl)peroxy dicarbonate in the presence of DMPO Benzene ESR / 300	N: 1.325 H_β : 0.173	00Mek1
$[C_{17}H_{30}NO_4]$ 	Thermolysis (353 K) of bis(4- <i>tert</i> -butylcyclohexyl)peroxy dicarbonate in the presence of DMPO Benzene ESR / 300	N: 1.226 H_β : 0.988 H_γ : 0.0121 H_γ : 0.075	00Mek1

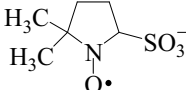
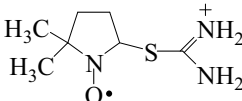
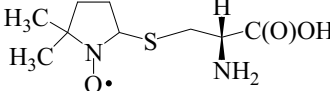
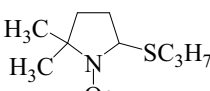
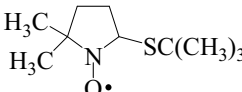
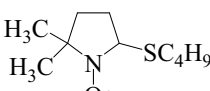
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{18}H_{21}NO_6P]$ 	Addition of an ACN solution of KO_2 and 18-crown-6 ether to a solution of DMPO, 2-nitrobenzenesulfinyl chloride and diphenylphosphoryl chloride ACN ESR / 298	N: 1.26 H_β : 1.03	89Kim1

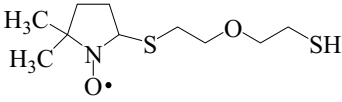
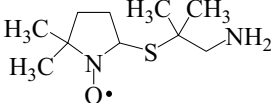
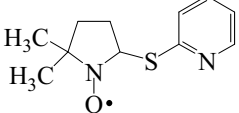
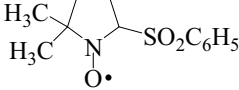
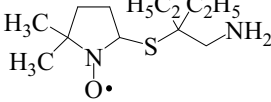
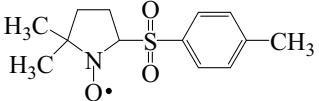
12.3.1.3.3.4 5-XR-Substituted 2,2-dimethylpyrrolidine-*N*-oxyls [X = Phosphorus]

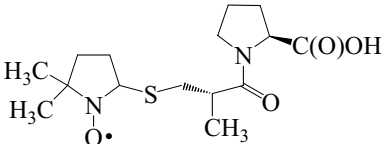
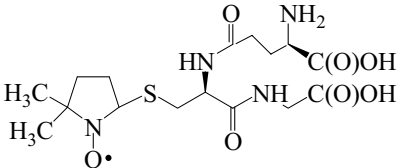
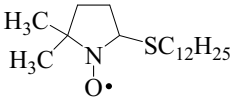
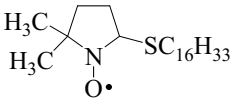
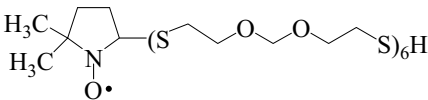
$[C_{12}H_{26}NO_4P]^+$ 	Photolysis of triethylphosphite, TBPA and DMPO CH_2Cl_2 ESR / 298	N: 1.43 H_β : 1.86 ^{31}P : 4.63	94Ebe1
$[C_{18}H_{21}NOP]$ 	Reaction of diphenylphosphine and DPPH in the presence of DMPO Benzene ESR / 298	2.0057 N: 1.36 H_β : 1.83 ^{31}P : 3.72	97Sue1
$[C_{18}H_{35}NO_5P]$ 	Photolysis of appropriate phosphorane and benzophenone in the presence of DMPO Reaction of appropriate phosphorane, LDA and DMPO Benzene ESR / 298	N: 1.488 H_β : 1.700 ^{31}P : 5.138	99Hai1
$[C_{31}H_{31}NO_6P]$ 	Thermal reaction of triphenyl phosphite with dibenzoyl peroxide in the presence of DMPO Benzene ESR / 348	2.0059 N: 1.36 H_β : 1.71 ^{31}P : 4.93	97Sue1

12.3.1.3.3.5 5-XR-Substituted 2,2-dimethylpyrrolidine-*N*-oxyls [X = Sulphur]

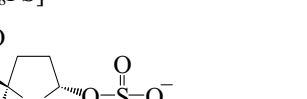
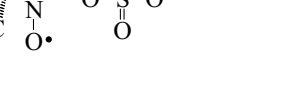
$[C_6H_{11}NOS]^-$ 	Photolysis of $NaNO_2$, Na_2S and DMPO	N: 1.609 H_β : 1.619	92Bil1
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Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_6\text{H}_{11}\text{NO}_4\text{S}]^-$ 	Reaction of sodium (^{33}S)-bisulphite, horse-radish peroxidase, H_2O_2 and DMPO Phosphate buffer pH 7.7 ESR / 298	2.0058 N: 1.47 H_β : 1.60 ^{33}S : 1.15	88Mot1, 91Cho1
$[\text{C}_7\text{H}_{15}\text{N}_3\text{OS}]^+$ 	Addition of H_2O_2 to a solution of thiourea and DMPO Citrate buffer, pH 2.8 ESR / 298	2.006 N: 1.46 H_β : 2.08	92Sah1
$[\text{C}_9\text{H}_{17}\text{N}_2\text{O}_3\text{S}]$ 	Aerobic reaction of $\cdot\text{NO}$ with L-cysteine in the presence of DMPO Reaction of HEM/MgO and cysteine in the presence of DMPO Reaction of Fe^{II} , H_2O_2 and cysteine in the presence of DMPO Water ESR / 298	N: 1.53 H_β : 1.72	98Pou1, 99Nod1
HEM = Hydroxo(protoporphyrinato)iron(III).			
$[\text{C}_9\text{H}_{18}\text{NOS}]$ 	Spontaneous decomposition of <i>n</i> -propylthionitrite in the presence of DMPO Toluene ESR / 298	N: 1.40 H_β : 1.13	94Roy1
$[\text{C}_{10}\text{H}_{20}\text{NOS}]$ 	Photolysis of <i>tert</i> -butyl disulphide in the presence of DMPO Benzene ESR / 258	2.006 ₅ N: 1.325 H_β : 1.0375	92Mil1, 92Mil2
$[\text{C}_{10}\text{H}_{20}\text{NOS}]$ 	Oxidation of liquid polysulfides with MnO_2 in the presence of DMPO Toluene ESR / 298	2.0064 N: 1.35 H_β : 1.11 $2\text{H}_\delta(\text{SCH}_2)$: 0.10	92Coa1

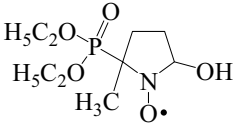
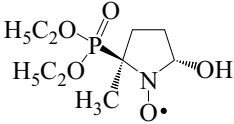
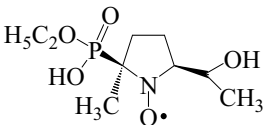
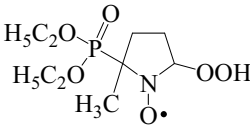
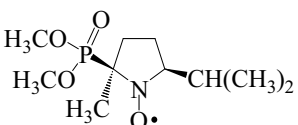
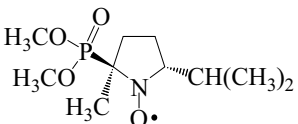
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{10}H_{20}NO_2S_2]$ 	Oxidation of liquid polysulfides with MnO_2 in the presence of DMPO Toluene ESR / 298	2.0064 N: 1.34 H_β : 1.14 $2H_\delta(SCH_2)$: 0.11	92Coa1
$[C_{10}H_{21}N_2OS]$ 	Spontaneous decomposition of corresponding thionitrite in the presence of DMPO Toluene ESR / 298	N: 1.39 H_β : 1.13	94Roy1
$[C_{11}H_{15}N_2OS]$ 	Photolysis of 2-thione-pyridine in the presence of DMPO ESR/ 298 Water, pH 7 Tolene	N: 1.50 H_β : 1.66 N: 1.31 H_β : 1.39	94Res1
Almost identical spectra are observed with the corresponding <i>N</i> -oxide.			
$[C_{12}H_{16}NO_3S]$ 	Photolysis of azocompound $C_6H_5N_2SO_2C_6H_5$ and DMPO ESR / 298 Toluene $CHCl_3$	2.0063 N: 1.255 H_β : 1.31 2.0065 N: 1.37 H_β : 1.60	91Cho1
$[C_{12}H_{25}N_2OS]$ 	Spontaneous decomposition of corresponding thionitrite in the presence of DMPO Toluene ESR / 298	N: 1.39 H_β : 1.13	94Roy1
$[C_{13}H_{18}NO_3S]$ 	Spontaneous decomposition of BTH in the presence of DMPO ESR / 298 Benzene $CHCl_3$	2.0061 ₇ N: 1.288 H_β : 1.303 2.0062 ₁ N: 1.259 H_β : 1.268	96Ba11

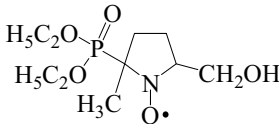
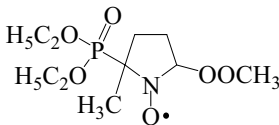
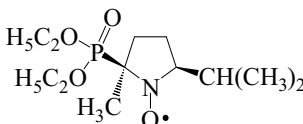
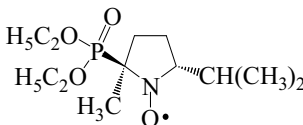
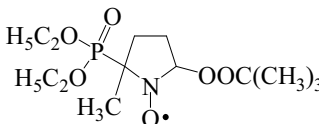
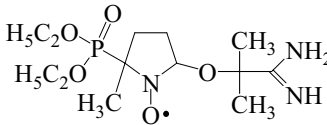
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₅H₂₅N₂O₄S]</p> 	Reaction of nitric oxide with captopril in the presence of DMPO Phosphate buffer p H7.4 ESR / 298	N: 1.540 H _β : 1.600	98Pou1
<p>[C₁₆H₂₇N₄O₇S]</p> 	Aerobic reaction of •NO with glutathione in the presence of DMPO Phosphate buffer pH 7.4 ESR / 298	N: 1.540 H _β : 1.620	98Pou1
<p>[C₁₈H₃₆NOS]</p> 	Photolysis of corresponding disulphide in the presence of DMPO Benzene ESR / 246	2.006 ₅ N: 1.31 H _β : 1.056 2H _δ (SCH ₂): 0.10	92Mil1, 92Mil2
<p>[C₂₂H₄₄NOS]</p> 	Photolysis of corresponding disulphide in the presence of DMPO Benzene ESR / 258	2.006 ₅ N: 1.31 H _β : 1.061 2H _δ (SCH ₂): 0.10	92Mil1, 92Mil2
<p>[C₃₆H₇₂NO₁₃S₁₂]</p> 	Oxidation of liquid polysulfides with MnO ₂ in the presence of DMPO Toluene ESR / 298	2.0064 N: 1.34 H _β : 1.14 2H _δ (SCH ₂): 0.11	92Coa1

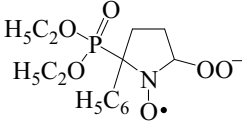
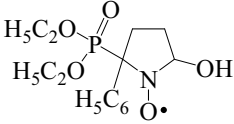
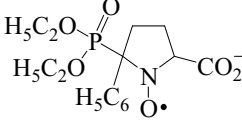
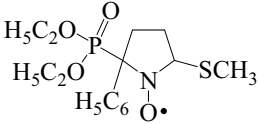
12.3.1.3.3.6 5-Substituted 2-methyl,2-(dialkoxyphosphoryl)pyrrolidine-*N*-oxyls

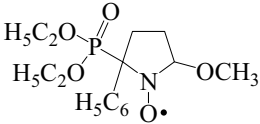
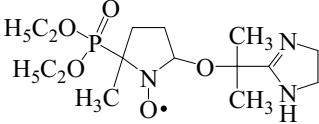
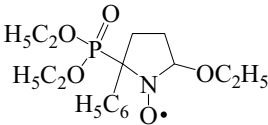
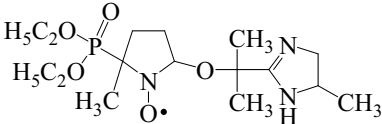
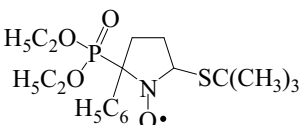
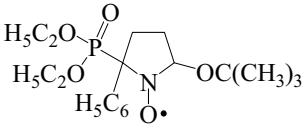
<p>$[C_9H_{18}NO_8PS]^-$</p> 	<p>Photolysis ($\lambda > 250$ nm) of sodium peroxydisulfate in the presence of DEPMPO Water, pH 7.4 ESR / 298</p>	<p>2.0061 N: 1.35 H_β: 0.92 ^{31}P: 4.58 H_γ: 0.16 H_γ: 0.04 H_γ: 0.02</p>	<p>98Clé1</p>
<p>$[C_9H_{19}NO_5P]$</p> 	<p>Reaction of Fe^{II}, H_2O_2 and DEPMPO Phosphate buffer pH 7.4 ESR / 298</p>	<p>2.0059 N: 1.40 H_β: 1.30 ^{31}P: 4.74 $3H_\gamma$: 0.27</p>	<p>95Fre1, 99Kar1, 00Ros1</p>

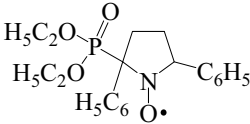
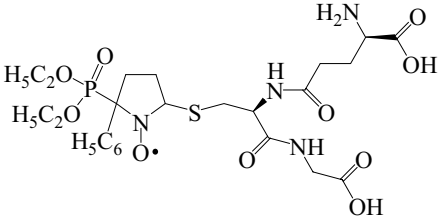
(continued)

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₉H₁₉NO₃P] (<i>continued</i>)</p> 	Reaction of DPPH and DEPMPO in the presence of water Dimethyl formamide ESR / 298	N: 1.34 H _β : 1.29 ³¹ P: 4.685	00Ion1
<p>[C₉H₁₉NO₃P]</p> 	Photolysis of (¹⁷ O)-H ₂ O ₂ and DEPMPO Water, pH 7.0 ESR / 298	2.0061 N: 1.35 H _β : 1.35 ³¹ P: 4.75 ¹⁷ O: 0.42	98Clé1
<p>[C₉H₁₉NO₃P]</p> 	Reaction of Fe ^{II} , H ₂ O ₂ and DEPMPO Photolysis ($\lambda > 250$ nm) of sodium peroxydisulfate in the presence of DEPMPO Phosphate buffer pH 7.4 ESR / 298	2.0061 N: 1.45 H _β : 2.20 ³¹ P: 4.60	98Clé1
This species is believed to originate from the loss of a proton and rearrangement of the radical cation of DEPMPO formed in the first stage of the above reactions.			
<p>[C₉H₁₉NO₆P]</p> 	Reaction of xanthine oxidase, hypoxanthine and DEPMPO Phosphate buffer pH 5.6 to 8.2 ESR / 298	2.0059 N: 1.34 H _β : 1.19 H _γ : 0.08 6H _γ : 0.043 ³¹ P: 5.25	95Fre1, 95Tuc1, 00Tsa1
Spectra exhibit a remarkably strong line-width alternation at room temperature due to conformational motions. The half-life of the nitroxides decreases with increasing pH.			
<p>[C₁₀H₂₁NO₄P]</p>  	Oxidation of the corresponding diastereomeric pyrrolidines with CPBA <i>n</i> -Pentane ESR / 298	<p><i>Cis-diastereomer</i></p> <p>2.0060 N: 1.40 H_β: 2.06 ³¹P: 4.61</p> <p><i>Trans-diastereomer</i></p> <p>2.0060 N: 1.35 H_β: 2.07 ³¹P: 5.12</p>	94LeM1

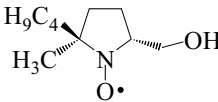
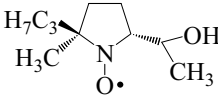
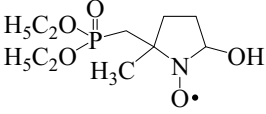
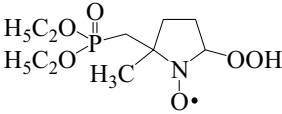
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<div>[C₁₀H₂₁NO₅P]</div> <div></div>	Reaction of H ₂ O ₂ , Fe ^{II} and methanol in the presence of DEPMPO Water ESR / 298	2.0059 N: 1.45 H _β : 2.07 ³¹ P: 4.995	95Fre1
<div>[C₁₀H₂₁NO₆P]</div> <div></div>	Photolysis of an oxygen containing solution of H ₂ O ₂ , DMSO and DEPMPO Water ESR / 298	<div><i>Conformer I</i> N: 1.35 H_β: 0.95 H_γ: 0.12 6H_γ: 0.043 ³¹P: 4.58</div> <div><i>Conformer II</i> N: 1.31 H_β: 1.09 H_γ: 0.09 6H_γ: 0.043 ³¹P: 4.98</div>	95Fre1
The room temperature exchange rate between the conformers is $k = 5 \times 10^7 \text{ s}^{-1}$			
<div>[C₁₂H₂₅NO₄P]</div> <div></div> <div></div>	Oxidation of the corresponding diastereomeric pyrrolidines with CPBA <i>n</i> -Pentane ESR / 298	<div><i>Cis-diastereomer</i> 2.0060 N: 1.40 H_β: 2.05 ³¹P: 4.60</div> <div><i>Trans-diastereomer</i> 2.0060 N: 1.35 H_β: 2.10 ³¹P: 5.12</div>	94LeM1
<div>[C₁₃H₂₇NO₆P]</div> <div></div>	Reaction of Co ^{II} -acetylacetonate, <i>tert</i> -butyl hydroperoxide and DEPMPO Benzene: <i>tert</i> -butanol: ethanol:phosphate buffer 1:1:2:1 ESR / 298	N: 1.251 H _β : 1.012 ³¹ P: 4.919	98Roj1
<div>[C₁₃H₂₇N₃O₅P]</div> <div></div>	Thermal decomposition of AAPH in the presence of DEPMPO Phosphate buffer, pH 7.2 ESR / 298 to 313	N: 1.335 H _β : 1.273 ³¹ P: 4.630	98Roj1
AAPH = 2,2'-Azobis(2-methylpropionamidine) dihydrochloride.			

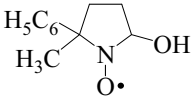
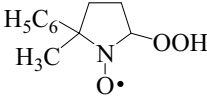
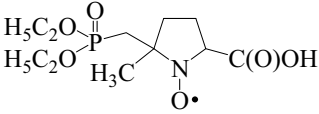
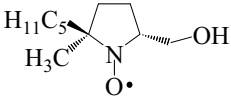
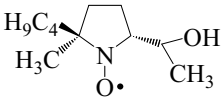
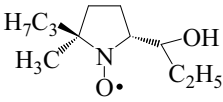
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[\text{C}_{14}\text{H}_{20}\text{NO}_6\text{P}]^-$ 	Reaction of xanthine oxidase, hypoxanthine and DEPPPO Phosphate buffer, pH 7.4 ESR / 298	<i>Diastereomer I</i> <i>Conformer A</i> N: 1.17 H _β : 0.83 ³¹ P: 3.72 <i>Conformer B</i> N: 1.35 H _β : 1.19 ³¹ P: 1.88 <i>Diastereomer II</i> <i>Conformer C</i> N: 1.25 H _β : 1.16 ³¹ P: 4.64 <i>Conformer D</i> N: 1.31 H _β : 1.02 ³¹ P: 3.32	99Kar1
$[\text{C}_{14}\text{H}_{21}\text{NO}_5\text{P}]$ 	Reaction of H ₂ O ₂ and Fe ^{II} in the presence of DEPPPO Phosphate buffer, pH 7.4 ESR / 298	<i>Diastereomer I</i> N: 1.37 H _β : 1.49 H _γ : 0.043 ³¹ P: 3.18 <i>Diastereomer II</i> N: 1.35 H _β : 1.05 ³¹ P: 3.06	99Kar1
$[\text{C}_{15}\text{H}_{20}\text{NO}_6\text{P}]^-$ 	Reaction of H ₂ O ₂ , Fe ^{II} and sodium formate in the presence of DEPPPO Water ESR / 298	<i>Diastereomer I</i> N: 1.44 H _β : 1.94 ³¹ P: 3.45 <i>Diastereomer II</i> N: 1.42 H _β : 1.80 ³¹ P: 2.60	99Kar1
$[\text{C}_{15}\text{H}_{23}\text{NO}_4\text{PS}]$ 	Photolysis of methyl disulphide in the presence of DEPPPO Benzene ESR / 298	<i>Diastereomer I</i> N: 1.31 H _β : 1.36 ³¹ P: 3.62 <i>Diastereomer II</i> N: 1.28 H _β : 1.36 ³¹ P: 3.01	99Kar1

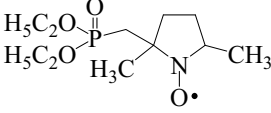
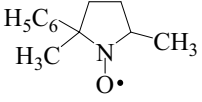
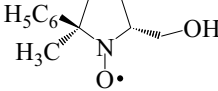
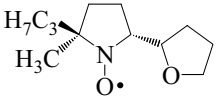
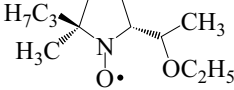
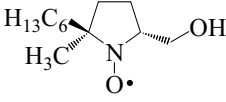
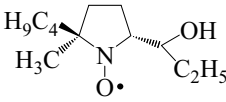
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₅H₂₃NO₅P]</p> 	Reaction of methanol and lead tetraacetate in the presence of DEPPPO Benzene ESR / 298	N: 1.28 H_β : 0.71 H_γ : 0.018 ^{31}P : 3.81	99Kar1
<p>[C₁₅H₂₉N₃O₅P]</p> 	Thermal decomposition of VA-44 in the presence of DEPMPO Phosphate buffer, pH 7.2 ESR / 295	N: 1.340 H_β : 1.274 ^{31}P : 4.631	98Roj1
VA-44 = 2,2'-Azobis[2-(2-imidazolin-2-yl)propane] dihydrochloride.			
<p>[C₁₆H₂₅NO₅P]</p> 	Reaction of ethanol and lead tetraacetate in the presence of DEPPPO Benzene ESR / 298	N: 1.28 H_β : 0.72 H_γ : 0.018 ^{31}P : 3.84	99Kar1
<p>[C₁₆H₃₁N₃O₅P]</p> 	Thermal decomposition of M3-VA-44 in the presence of DEPMPO Phosphate buffer, pH 7.2 ESR / 295	N: 1.337 H_β : 1.278 H_β : 0.061 ^{31}P : 4.647	98Roj1
VA-44 = 2,2'-Azobis{2-[2-(4-methyl)imidazolin-2-yl]propane} dihydrochloride.			
<p>[C₁₈H₂₉NO₄PS]</p> 	Photolysis of <i>tert</i> -butyl disulphide in the presence of DEPPPO Benzene ESR / 298	<i>Diastereomer I</i> N: 1.34 H_β : 1.37 ^{31}P : 3.49 <i>Diastereomer II</i> N: 1.29 H_β : 1.42 ^{31}P : 3.18	99Kar1
<p>[C₁₈H₂₉NO₅P]</p> 	Reaction of <i>tert</i> -butanol and lead tetraacetate in the presence of DEPPPO Benzene ESR / 298	N: 1.31 H_β : 0.94 H_γ : 0.017 H_γ : 0.007 H_γ : 0.002 ^{31}P : 3.70	99Kar1

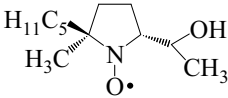
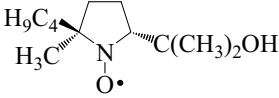
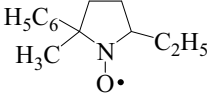
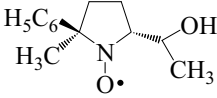
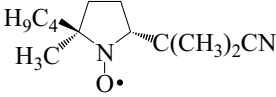
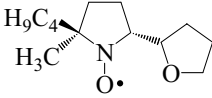
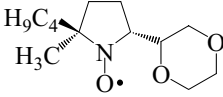
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₂₀H₂₅NO₄P]</p> 	Photolysis of dibenzoyl peroxide in the presence of DEPPPO Benzene ESR / 298	<p><i>Diastereomer I</i> N: 1.37 H_β: 1.92 ³¹P: 3.41</p> <p><i>Diastereomer II</i> N: 1.33 H_β: 1.94 ³¹P: 3.26</p>	99Kar1
<p>[C₂₄H₃₆N₄O₁₀PS]</p> 	Photolysis of nitrosoglutathione in the presence of DEPPPO Benzene ESR / 298	<p><i>Diastereomer I</i> N: 1.39 H_β: 1.62 ³¹P: 3.09</p> <p><i>Diastereomer II</i> N: 1.41 H_β: 1.54 ³¹P: 3.25</p>	99Kar1

12.3.1.3.3.7 Other 2,2,5-trisubstituted pyrrolidine-*N*-oxyls

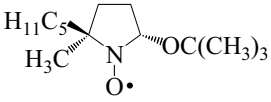
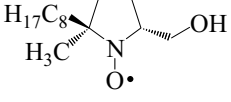
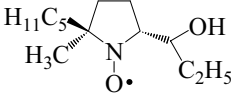
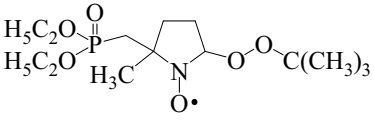
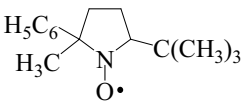
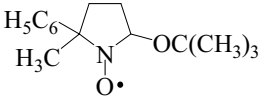
<p>[C₁₀H₂₀NO₂]</p> 	Photolysis of methanol and benzophenone in the presence of 5-methyl-5-butylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.47 H _β : 2.22	89Zha1
<p>[C₁₀H₂₀NO₂]</p> 	Photolysis of ethanol and benzophenone in the presence of 5-methyl-5-propylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.47 H _β : 2.32	89Zha1
<p>[C₁₀H₂₁NO₅P]</p> 	Reaction of H ₂ O ₂ and Fe ^{II} in the presence of 5-(diethoxyphosphorylmethyl)-5-methylpyrrolidine <i>N</i> -oxide Phosphate buffer, pH 5.8 ESR / 298	<p><i>Diastereomer I</i> N: 1.46 H_β: 1.56</p> <p><i>Diastereomer II</i> N: 1.44 H_β: 1.11</p>	97Rou1
<p>[C₁₀H₂₁NO₆P]</p> 	Reaction of xanthine oxidase, hypoxanthine and 5-(diethoxyphosphorylmethyl)-5-methylpyrrolidine <i>N</i> -oxide Phosphate buffer, pH 6.0 ESR / 298	<p>N: 1.37 H_β: 1.18 ³¹P: 0.13</p> <p>H_γ: 0.06 H_γ: 0.08 H_γ: 0.09</p>	97Rou1

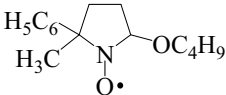
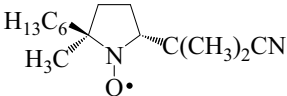
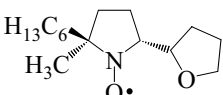
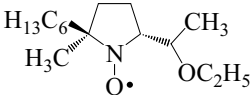
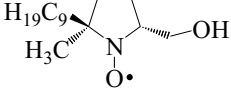
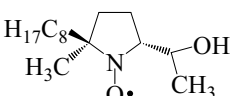
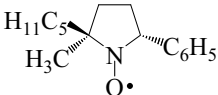
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{14}NO_2]$ 	Photolysis of H_2O_2 in the presence of MPPO Water ESR / 298	N: 1.435 H_β : 1.435	96Jan1, 97San1
$[C_{11}H_{14}NO_3]$ 	Photolysis of H_2O_2 in the presence of MPPO Water ESR / 298	<i>Diastereomer I</i> N: 1.40 H_β : 1.21 H_γ : 0.11 <i>Diastereomer II</i> N: 1.41 H_β : 0.76 H_γ : 0.07	96Jan1, 97San1
$[C_{11}H_{21}NO_6P]$ 	Reaction of H_2O_2 , Fe^{II} , sodium formate and 5-(diethoxyphosphorylmethyl)-5-methylpyrrolidine N -oxide Phosphate buffer, pH 6.0 ESR / 298	<i>Diastereomer I</i> N: 1.54 H_β : 1.67 ^{31}P : 0.21 H_γ : 0.05 H_δ : 0.07 <i>Diastereomer II</i> N: 1.52 H_β : 1.99 ^{31}P : 0.12 H_γ : 0.03 H_δ : 0.06	97Rou1
$[C_{11}H_{22}NO_2]$ 	Photolysis of methanol and benzophenone in the presence of 5-methyl-5-pentylpyrrolidine N -oxide Benzene ESR / 298	N: 1.47 H_β : 2.22	89Zha1
$[C_{11}H_{22}NO_2]$ 	Photolysis of ethanol and benzophenone in the presence of 5-methyl-5-butylpyrrolidine N -oxide Benzene ESR / 298	N: 1.46 H_β : 2.31	89Zha1
$[C_{11}H_{22}NO_2]$ 	Photolysis of n -propanol and benzophenone in the presence of 5-methyl-5-propylpyrrolidine N -oxide Benzene ESR / 298	N: 1.47 H_β : 2.32	89Zha1

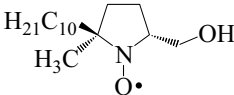
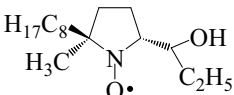
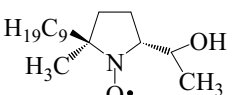
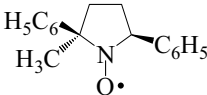
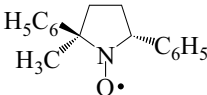
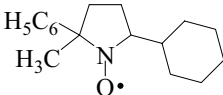
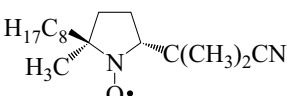
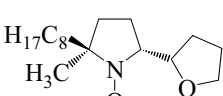
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₁H₂₃NO₄P]</p> 	Reaction of H ₂ O ₂ , Fe ^{II} , DMSO and 5-(diethoxyphosphorylmethyl)-5-methylpyrroline <i>N</i> -oxide Phosphate buffer, pH 6.0 ESR / 298	<p><i>Diastereomer I</i> N: 1.59 H_β: 2.43</p> <p><i>Diastereomer II</i> N: 1.61 H_β: 2.01</p>	97Rou1
<p>[C₁₂H₁₆NO]</p> 	Reaction of methylmagnesium bromide and MPPO Benzene ESR / 298	N: 1.393 H _β : 1.876	96Jan1
<p>[C₁₂H₁₆NO₂]</p> 	Photolysis of methanol, benzophenone and MPPO Benzene ESR / 298	N: 1.447 H _β : 2.039	96Jan1
<p>[C₁₂H₂₂NO₂]</p> 	Photolysis of tetrahydrofuran in the presence of 5-methyl-5-propylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H _β : 1.89	89Zha1
<p>[C₁₂H₂₄NO₂]</p> 	Photolysis of ethyl ether in the presence of 5-methyl-5-propylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H _β : 2.12	89Zha1
<p>[C₁₂H₂₄NO₂]</p> 	Photolysis of methanol, benzophenone and 5-methyl-5-hexylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.46 H _β : 2.21	89Zha1
<p>[C₁₂H₂₄NO₂]</p> 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-butylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.46 H _β : 2.29	89Zha1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{12}H_{24}NO_2]$ 	Photolysis of ethanol with benzophenone and 5-methyl-5-pentylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.47 H_β : 2.31	89Zha1
$[C_{12}H_{24}NO_2]$ 	Photolysis of 2-propanol with benzophenone and 5-methyl-5-butylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.45 H_β : 2.44	89Zha1
$[C_{13}H_{18}NO]$ 	Reaction of ethylmagnesium bromide and MPPO Benzene ESR / 298	N: 1.379 H_β : 1.916	96Jan1
$[C_{13}H_{18}NO_2]$ 	Photolysis of ethanol, benzophenone and MPPO Benzene ESR / 298	N: 1.453 H_β : 2.109	96Jan1
$[C_{13}H_{23}N_2O]$ 	Photolysis of AIBN and 5-methyl-5-butylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.25 H_β : 0.85 H_γ : 0.18	89Zha1
$[C_{13}H_{24}NO_2]$ 	Photolysis of tetrahydrofuran in the presence of 5-methyl-5-butylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H_β : 1.90	89Zha1
$[C_{13}H_{24}NO_3]$ 	Photolysis of dioxane in the presence of 5-methyl-5-butylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.40 H_β : 1.94	89Zha1

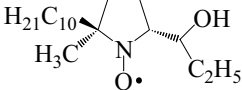
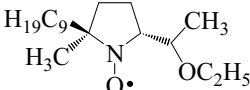
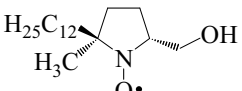
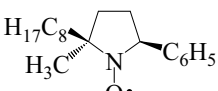
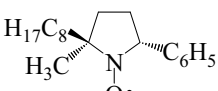
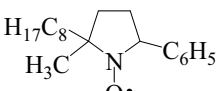
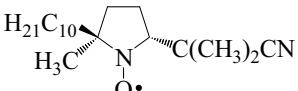
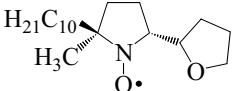
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{26}NO_2]$ 	Photolysis of ethyl ether and 5-methyl-5-butylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.38 H_β : 2.10	89Zha1
$[C_{13}H_{26}NO_2]$ 	Photolysis of ethanol, benzophenone and 5-methyl-5-hexylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.47 H_β : 2.34	89Zha1
$[C_{13}H_{26}NO_2]$ 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-pentylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.47 H_β : 2.31	89Zha1
$[C_{14}H_{20}NO]$ 	Photolysis of triphenylstibine and 5-methyl-5-propylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.37 H_β : 2.06	89Zha1
$[C_{14}H_{20}NO_2]$ 	Photolysis of 2-propanol with benzophenone and MPPO Benzene ESR / 298	N: 1.440 H_β : 2.229	96Jan1
$[C_{14}H_{25}N_2O]$ 	Photolysis of AIBN and 5-methyl-5-pentylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.25 H_β : 0.80 H_γ : 0.19	89Zha1
$[C_{14}H_{26}NO_2]$ 	Photolysis of tetrahydrofuran in the presence of 5-methyl-5-pentylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H_β : 1.89	89Zha1
$[C_{14}H_{28}NO_2]$ 	Photolysis of tetrahydrofuran and 5-methyl-5-hexylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.38 H_β : 1.86	89Zha1

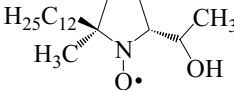
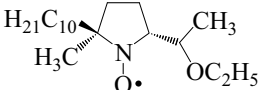
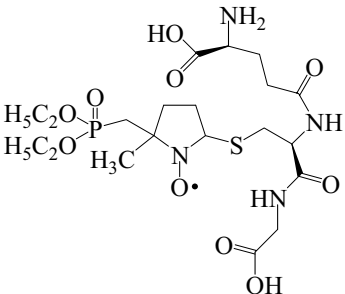
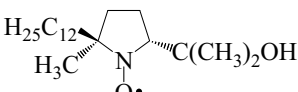
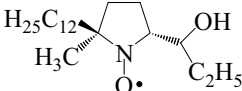
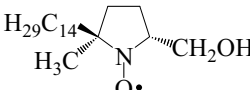
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{14}H_{28}NO_2]$ 	Photolysis of <i>tert</i> -butyl peroxide and 5-methyl-5-pentylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.33 H_β : 0.77 H_γ : 0.19	89Zha1
$[C_{14}H_{28}NO_2]$ 	Photolysis of methanol with benzophenone and 5-methyl-5-octylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.46 H_β : 2.22	89Zha1
$[C_{14}H_{28}NO_2]$ 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-pentylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H_β : 2.07	89Zha1
$[C_{14}H_{29}NO_6P]$ 	Photolysis of <i>tert</i> -butyl hydroperoxide and 5-(diethoxyphosphoryl-methyl)-5-methylpyrroline <i>N</i> -oxide Water ESR / 298	<i>Diastereomer I</i> N: 1.33 H_β : 1.12 ^{31}P : 0.14 H_γ : 0.08 H_δ : 0.06 <i>Diastereomer II</i> N: 1.33 H_β : 0.80 ^{31}P : 0.14 H_γ : 0.09 H_δ : 0.07	97Rou1
$[C_{15}H_{22}NO]$ 	Reaction of <i>tert</i> -butyl-magnesium bromide and MPPO Benzene ESR / 298	N: 1.379 H_β : 2.038	96Jan1
$[C_{15}H_{22}NO_2]$ 	Photolysis of di- <i>tert</i> -butyl peroxide and MPPO Benzene ESR / 298	N: 1.265 H_β : 0.841 $2H_\gamma$: 0.10	96Jan1

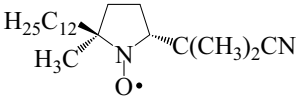
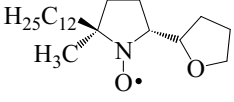
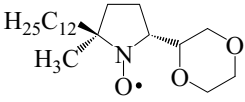
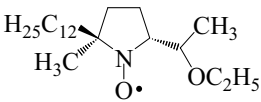
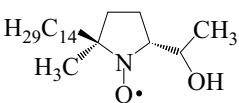
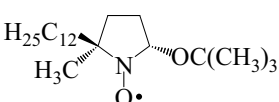
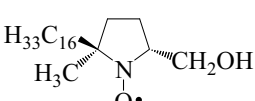
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₁₅ H ₂₂ NO ₂] 	Photolysis of <i>n</i> -butyl nitrite and MPPO Benzene ESR / 298	N: 1.263 H _β : 0.735	96Jan1
[C ₁₅ H ₂₇ N ₂ O] 	Photolysis of AIBN and 5-methyl-5-hexylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.24 H _β : 0.84 H _γ : 0.17	89Zha1
[C ₁₅ H ₂₈ NO ₂] 	Photolysis of tetrahydrofuran with benzophenone and 5-methyl-5-hexylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.38 H _β : 1.86	89Zha1
[C ₁₅ H ₃₀ NO ₂] 	Photolysis of ethyl ether with benzophenone and 5-methyl-5-hexylpyrrolidine <i>N</i> -oxide Benzene ESR	N: 1.39 H _β : 2.08	89Zha1
[C ₁₅ H ₃₀ NO ₂] 	Photolysis of methanol with benzophenone and 5-methyl-5-nonylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.46 H _β : 2.21	89Zha1
[C ₁₅ H ₃₀ NO ₂] 	Photolysis of ethanol with benzophenone and 5-methyl-5-octylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.45 H _β : 2.30	89Zha1
[C ₁₆ H ₂₄ NO] 	Photolysis of triphenyl stibine and 5-methyl-5-pentylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.36 H _β : 2.01	89Zha1

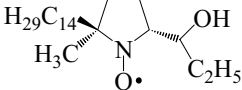
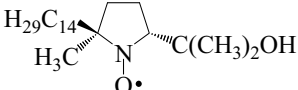
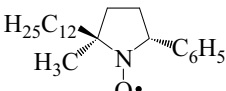
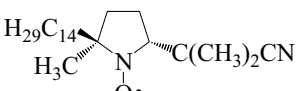
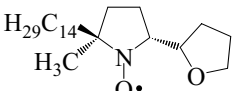
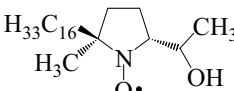
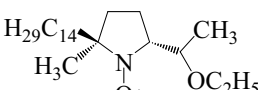
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{16}H_{32}NO_2]$ 	Photolysis of methanol with benzophenone and 5-methyl-5-decylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.48 H_β : 2.23	89Zha1
$[C_{16}H_{32}NO_2]$ 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-octylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.48 H_β : 2.33	89Zha1
$[C_{16}H_{32}NO_2]$ 	Photolysis of ethanol with benzophenone and 5-methyl-5-nonylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.46 H_β : 2.31	89Zha1
$[C_{17}H_{18}NO]$  	Room temperature decomposition of phenylazotriphenylmethane in the presence of MPPO Benzene ESR / 298	N: 1.347 H_β : 1.782 N: 1.456 H_β : 2.108	96Jan1
$[C_{17}H_{24}NO]$ 	Reaction of cyclohexylmagnesium bromide and MPPO Benzene ESR / 298	N: 1.382 H_β : 2.058	96Jan1
$[C_{17}H_{31}N_2O]$ 	Photolysis of AIBN and 5-methyl-5-octylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.26 H_β : 0.87 H_γ : 0.19	89Zha1
$[C_{17}H_{32}NO_2]$ 	Photolysis of tetrahydrofuran with benzophenone and 5-methyl-5-octylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H_β : 1.90	89Zha1

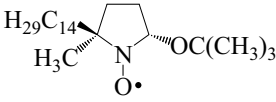
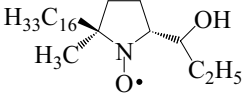
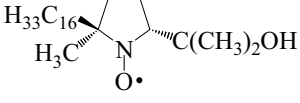
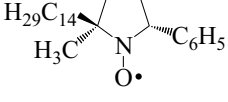
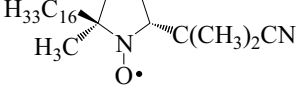
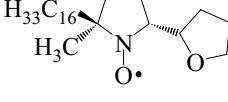
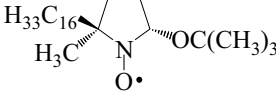
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{17}H_{32}NO_3]$ 	Photolysis of dioxane in the presence of 5-octyl-5-butylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.37 H _β : 1.93	89Zha1
$[C_{17}H_{34}NO_2]$ 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-nonylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.46 H _β : 2.31	89Zha1
$[C_{17}H_{34}NO_2]$ 	Photolysis of ethanol with benzophenone and 5-methyl-5-decylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.46 H _β : 2.27	89Zha1
$[C_{17}H_{34}NO_2]$ 	Photolysis of ethyl ether with benzophenone and 5-methyl-5-octylpyrroline <i>N</i> -oxide Benzene ESR	N: 1.38 H _β : 2.07	89Zha1
$[C_{18}H_{33}N_2O]$ 	Photolysis of AIBN and 5-methyl-5-nonylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.26 H _β : 0.86 H _γ : 0.16	89Zha1
$[C_{18}H_{34}NO_2]$ 	Photolysis of tetrahydrofuran with benzophenone and 5-methyl-5-nonylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.38 H _β : 1.89	89Zha1
$[C_{18}H_{36}NO_2]$ 	Photolysis of di- <i>tert</i> -butylperoxide and 5-methyl-5-nonylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.32 H _β : 0.80 H _γ : 0.19	89Zha1

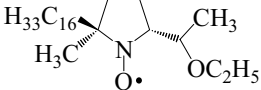
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{18}H_{36}NO_2]$ 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-decylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.47 H_β : 2.29	89Zha1
$[C_{18}H_{36}NO_2]$ 	Photolysis of ethyl ether with benzophenone and 5-methyl-5-nonylpyrrolidine <i>N</i> -oxide Benzene ESR	N: 1.39 H_β : 2.08	89Zha1
$[C_{18}H_{36}NO_2]$ 	Photolysis of methanol with benzophenone and 5-methyl-5-dodecylpyrrolidine <i>N</i> -oxide Benzene ESR	N: 1.49 H_β : 2.21	89Zha1
$[C_{19}H_{30}NO]$  	Reaction of phenylmagnesium bromide and MPPO followed by air oxidation Benzene ESR / 298	N: 1.38 H_β : 2.48 N: 1.38 H_β : 2.05	89Zha1
$[C_{19}H_{30}NO]$ 	Photolysis of triphenylstibine and 5-methyl-5-octylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.36 H_β : 2.012	89Zha1
$[C_{19}H_{35}N_2O]$ 	Photolysis of AIBN and 5-methyl-5-decylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.27 H_β : 0.87 H_γ : 0.16	89Zha1
$[C_{19}H_{36}NO_2]$ 	Photolysis of tetrahydrofuran with benzophenone and 5-methyl-5-decylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H_β : 1.92	89Zha1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₉H₃₈NO₂]</p> 	Photolysis of ethanol with benzophenone and 5-methyl-5-dodecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.45 H _β : 2.29	89Zha1
<p>[C₁₉H₃₈NO₂]</p> 	Photolysis of ethyl ether with benzophenone and 5-methyl-5-decylpyrrolidine <i>N</i> -oxide Benzene ESR	N: 1.38 H _β : 2.07	89Zha1
<p>[C₂₀H₃₆N₄O₁₀PS]</p> 	Photolysis of glutathione disulfide and 5-(diethoxyphosphorylmethyl)-5-methylpyrrolidine <i>N</i> -oxide Phosphate buffer, pH 7.4 ESR / 298	<p><i>Diastereomer I</i></p> <p>N: 1.61 H_β: 1.41 ³¹P: 0.11 H_γ: 0.09 H_γ: 0.05</p> <p><i>Diastereomer II</i></p> <p>N: 1.44 H_β: 1.50 ³¹P: 0.24 H_γ: 0.09 H_γ: 0.06</p>	97Rou1
<p>[C₂₀H₄₀NO₂]</p> 	Photolysis of 2-propanol with benzophenone and 5-methyl-5-dodecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.44 H _β : 2.47	89Zha1
<p>[C₂₀H₄₀NO₂]</p> 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-dodecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.47 H _β : 2.33	89Zha1
<p>[C₂₀H₄₀NO₂]</p> 	Photolysis of methanol with benzophenone and 5-methyl-5-tetradecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.45 H _β : 2.18	89Zha1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{21}H_{39}N_2O]$ 	Photolysis of AIBN and 5-methyl-5-dodecylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.26 H_β : 0.86 H_γ : 0.16	89Zha1
$[C_{21}H_{40}NO_2]$ 	Photolysis of tetrahydrofuran with benzophenone and 5-methyl-5-dodecylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.40 H_β : 1.90	89Zha1
$[C_{21}H_{40}NO_3]$ 	Photolysis of dioxane in the presence of 5-dodecyl-5-butylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H_β : 1.94	89Zha1
$[C_{21}H_{42}NO_2]$ 	Photolysis of ethyl ether with benzophenone and 5-methyl-5-dodecylpyrroline <i>N</i> -oxide Benzene ESR	N: 1.35 H_β : 2.02	89Zha1
$[C_{21}H_{42}NO_2]$ 	Photolysis of ethanol with benzophenone and 5-methyl-5-tetradecylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.41 H_β : 2.25	89Zha1
$[C_{21}H_{42}NO_2]$ 	Photolysis of di- <i>tert</i> -butylperoxide and 5-methyl-5-dodecylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.30 H_β : 0.82 H_γ : 0.18	89Zha1
$[C_{22}H_{44}NO_2]$ 	Photolysis of methanol with benzophenone and 5-methyl-5-hexadecylpyrroline <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H_β : 2.15	89Zha1

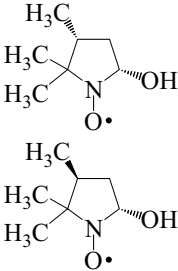
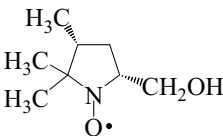
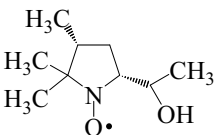
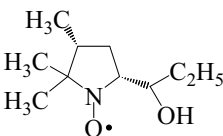
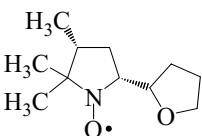
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₂₂ H ₄₄ NO ₂] 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-tetradecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.41 H _β : 2.24	89Zha1
[C ₂₂ H ₄₄ NO ₂] 	Photolysis of 2-propanol with benzophenone and 5-methyl-5-tetradecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H _β : 2.39	89Zha1
[C ₂₃ H ₃₈ NO] 	Photolysis of triphenylstibine and 5-methyl-5-dodecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.37 H _β : 2.06	89Zha1
[C ₂₃ H ₄₃ N ₂ O] 	Photolysis of AIBN and 5-methyl-5-tetradecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.23 H _β : 0.82 H _γ : 0.16	89Zha1
[C ₂₃ H ₄₄ NO ₂] 	Photolysis of tetrahydrofuran with benzophenone and 5-methyl-5-tetradecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.36 H _β : 1.85	89Zha1
[C ₂₃ H ₄₆ NO ₂] 	Photolysis of ethanol with benzophenone and 5-methyl-5-hexadecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.40 H _β : 2.23	89Zha1
[C ₂₃ H ₄₆ NO ₂] 	Photolysis of ethyl ether with benzophenone and 5-methyl-5-tetradecylpyrrolidine <i>N</i> -oxide Benzene ESR	N: 1.35 H _β : 2.00	89Zha1

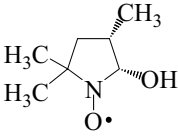
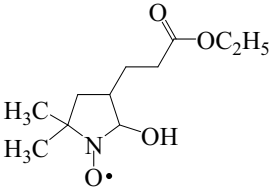
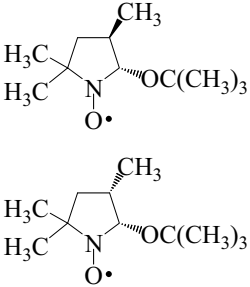
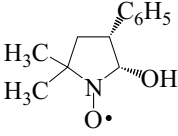
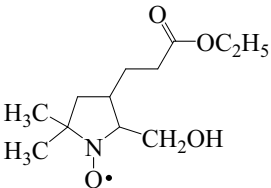
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{23}H_{46}NO_2]$ 	Photolysis of di- <i>tert</i> -butylperoxide and 5-methyl-5-tetradecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.24 H_β : 0.78 H_γ : 0.16	89Zha1
$[C_{24}H_{48}NO_2]$ 	Photolysis of <i>n</i> -propanol with benzophenone and 5-methyl-5-hexadecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.41 H_β : 2.24	89Zha1
$[C_{24}H_{48}NO_2]$ 	Photolysis of 2-propanol with benzophenone and 5-methyl-5-hexadecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.38 H_β : 2.37	89Zha1
$[C_{25}H_{42}NO]$ 	Photolysis of triphenylstibine and 5-methyl-5-tetradecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.38 H_β : 1.93	89Zha1
$[C_{25}H_{47}N_2O]$ 	Photolysis of AIBN and 5-methyl-5-hexadecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.20 H_β : 0.79 H_γ : 0.16	89Zha1
$[C_{25}H_{48}NO_2]$ 	Photolysis of tetrahydrofuran with benzophenone and 5-methyl-5-hexadecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.33 H_β : 1.83	89Zha1
$[C_{25}H_{50}NO_2]$ 	Photolysis of di- <i>tert</i> -butylperoxide and 5-methyl-5-hexadecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.25 H_β : 0.79 H_γ : 0.14	89Zha1

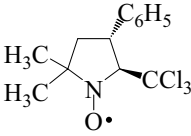
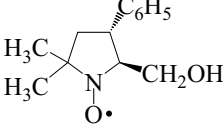
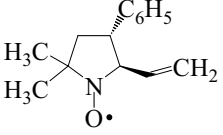
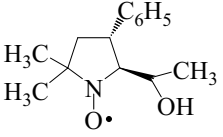
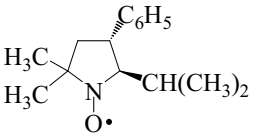
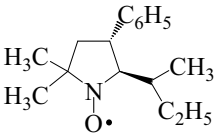
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{25}H_{50}NO_2]$ 	Photolysis of ethyl ether with benzophenone and 5-methyl-5-hexadecylpyrrolidine <i>N</i> -oxide Benzene ESR / 298	N: 1.39 H _β : 2.08	89Zha1

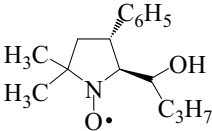
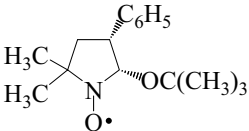
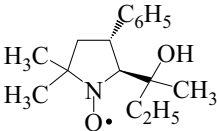
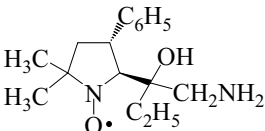
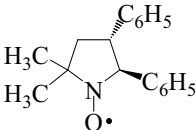
12.3.1.4 Tetrasubstituted pyrrolidine-*N*-oxyls

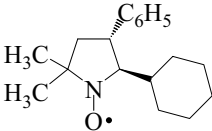
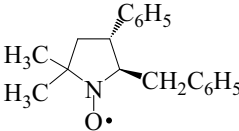
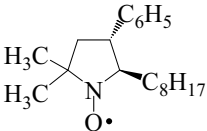
12.3.1.4.1 3,5-Disubstituted 2,2-dimethylpyrrolidine-*N*-oxyls

$[C_7H_{14}NO_2]$ 	Reaction of H ₂ O ₂ , Fe ^{II} and 4,5,5-trimethylpyrrolidine <i>N</i> -oxide Photolysis of H ₂ O ₂ and 4,5,5-trimethylpyrrolidine <i>N</i> -oxide Reaction of H ₂ O ₂ , ammonium persulfate and 4,5,5-trimethylpyrrolidine <i>N</i> -oxide Water ESR / 298 <i>Cis/trans</i> = 1.7 to 4.2 according to generation procedure.	N: 1.477 H _β : 1.072 H _γ : 0.114 N: 1.498 H _β : 1.888	91Zha1
$[C_8H_{16}NO_2]$ 	Reaction of H ₂ O ₂ , Fe ^{II} , methanol and 4,5,5-trimethylpyrrolidine <i>N</i> -oxide Water ESR / 298	N: 1.588 H _β : 1.945	91Zha1
$[C_9H_{18}NO_2]$ 	Reaction of H ₂ O ₂ , Fe ^{II} , ethanol and 4,5,5-trimethylpyrrolidine <i>N</i> -oxide Water ESR / 298	N: 1.600 H _β : 2.041	91Zha1
$[C_{10}H_{20}NO_2]$ 	Reaction of H ₂ O ₂ , Fe ^{II} , propanol and 4,5,5-trimethylpyrrolidine <i>N</i> -oxide Water ESR / 298	N: 1.587 H _β : 1.983	91Zha1
$[C_{11}H_{20}NO_2]$ 	Reaction of H ₂ O ₂ , Fe ^{II} , THF and 4,5,5-trimethylpyrrolidine <i>N</i> -oxide Water ESR / 298	N: 1.572 H _β : 1.654	91Zha1

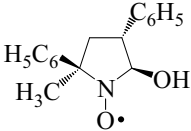
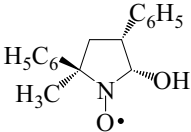
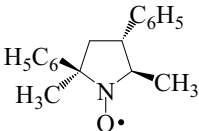
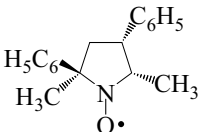
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₇H₁₄NO₂] (<i>continued</i>)</p> 	<p>Reaction of H₂O₂, Fe^{II} and 3,5,5-trimethylpyrrolidine <i>N</i>-oxide Water ESR / 298</p>	<p>N: 1.508 H_β: 2.085</p>	91Zha1
<i>Trans/cis</i> = 1.2.to 2.7.			
<p>[C₁₁H₂₀NO₄]</p> 	<p>Photolysis of ZnO and 3-(2-ethoxycarbonyl-ethyl)-5,5-trimethylpyrrolidine <i>N</i>-oxide Water ESR / 298</p>	<p>N: 1.553 H_β: 1.553</p>	90Zha2
<p>[C₇H₁₄NO₂]</p> 	<p>Reaction of BOOB and 3,5,5-trimethylpyrrolidine <i>N</i>-oxide Benzene THF-benzene Ethanol-benzene 2-Propanol-benzene <i>n</i>-Butanol-benzene ESR / 298</p>	<p>N: 1.326 H_β: 0.489 H_γ: 0.133</p> <p>N: 1.337 H_β: 1.508</p>	91Zha1
The ratio <i>trans/cis</i> varies between 0.625 in pure benzene and 5.1 in <i>n</i> -butanol-benzene.			
<p>[C₁₂H₁₆NO₂]</p> 	<p>Addition of hydroxyl radicals to 3-phenyl-5,5-dimethylpyrrolidine <i>N</i>-oxide Water ESR / 293</p>	<p>2.0058₃ N: 1.296 H_β: 1.416</p>	96Mat1
<p>[C₁₂H₂₂NO₄]</p> 	<p>Photolysis of 3-(2-ethoxycarbonyl-ethyl)-5,5-trimethylpyrrolidine <i>N</i>-oxide and ZnO or benzophenone ESR / 298 Methanol – water Methanol – benzene</p>	<p>N: 1.586 H_β: 2.558</p> <p>N: 1.365 H_β: 5.90</p>	90Zha2

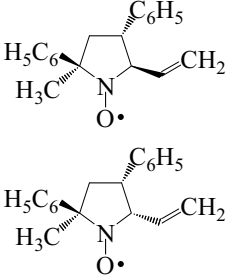
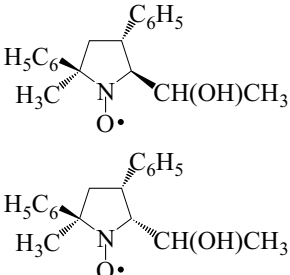
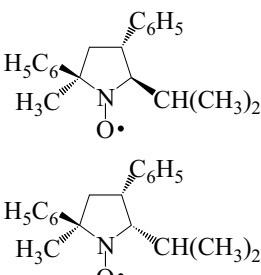
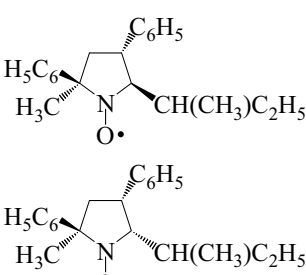
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{15}Cl_3NO]$ 	Addition of trichloromethyl radicals to 3-phenyl-5,5-dimethylpyrrolidine <i>N</i> -oxide Chloroform ESR / 293	$N: 1.327$ $H_\beta: 1.776$	96Mat1
$[C_{13}H_{18}NO_2]$ 	Photolysis of methanol, benzophenone and 3-phenyl-5,5-dimethylpyrrolidine <i>N</i> -oxide Toluene ESR / 293	2.0056_3 $N: 1.475$ $H_\beta: 2.438$	96Mat1
$[C_{14}H_{18}NO]$ 	Reaction of vinylmagnesium bromide and 3-phenyl-5,5-dimethylpyrrolidine <i>N</i> -oxide followed by air oxidation Benzene ESR / 293	2.0055_2 $N: 1.391$ $H_\beta: 2.217$	96Mat1
$[C_{14}H_{20}NO_2]$ 	Photolysis of ethanol, benzophenone and 3-phenyl-5,5-dimethylpyrrolidine <i>N</i> -oxide Toluene (or ethanol) ESR / 293	2.0056_2 $N: 1.500$ $H_\beta: 2.425$	96Mat1
$[C_{15}H_{22}NO]$ 	Reaction of 2-propylmagnesium bromide and 3-phenyl-5,5-dimethylpyrrolidine <i>N</i> -oxide followed by air oxidation Benzene ESR / 293	2.0058_4 $N: 1.391$ $H_\beta: 2.391$	96Mat1
$[C_{16}H_{24}NO]$ 	Reaction of 2-butylmagnesium bromide and 3-phenyl-5,5-dimethylpyrrolidine <i>N</i> -oxide followed by air oxidation Benzene ESR / 293	2.0057_5 $N: 1.425$ $H_\beta: 2.450$	96Mat1

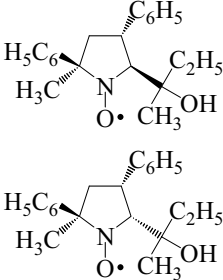
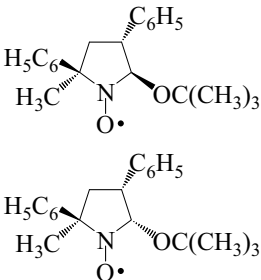
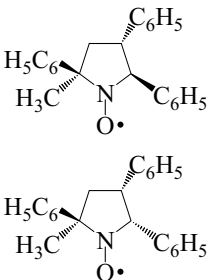
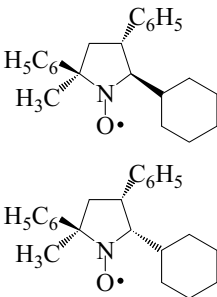
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₆H₂₄NO₂]</p> 	<p>Photolysis of <i>n</i>-butylamine, benzophenone and 3-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide Toluene ESR / 293</p>	<p>N: 1.416 H_β: 2.266 H_γ: 0.107</p>	96Mat1
Assignment based on the absence of a γ-N splitting.			
<p>[C₁₆H₂₄NO₂]</p> 	<p>Photolysis of BOOB and 3-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide Toluene ESR / 293</p>	<p>N: 1.321 H_β: 1.548 H_γ: 0.0421* H_γ: 0.0686*</p>	96Mat1
* Measured by ENDOR at 213 K.			
<p>[C₁₆H₂₄NO₂]</p> 	<p>Photolysis of 2-butanol, benzophenone and 3-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide ESR / 293 Toluene Methanol</p>	<p>2.0056₂ N: 1.475 H_β: 2.550 (2.245)* N: 1.513 H_β: 2.550</p>	96Mat1
* As measured by ENDOR at 213 K.			
<p>[C₁₆H₂₅N₂O₂]</p> 	<p>Photolysis of 2-hydroxybutylamine, benzophenone and 3-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide ESR / 293 Toluene Methanol</p>	<p>2.0057₂ N: 1.475 H_β: 2.350 (2.180)* N: 1.513 H_β: 2.475</p>	96Mat1
* As measured by ENDOR at 213 K.			
<p>[C₁₈H₂₀NO]</p> 	<p>Reaction of phenylmagnesium bromide and 3-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide followed by air oxidation Benzene ESR / 293</p>	<p>2.0058₁ N: 1.370 H_β: 2.283</p>	96Mat1

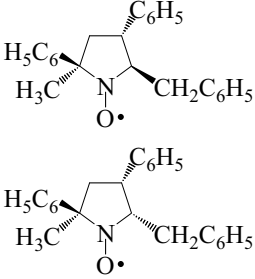
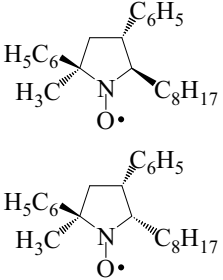
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{18}H_{26}NO]$ 	Reaction of cyclohexylmagnesium bromide and 3-phenyl-5,5-dimethylpyrroline <i>N</i> -oxide followed by air oxidation Benzene ESR / 293	2.0057 ₅ N: 1.391 H _β : 2.413	96Mat1
$[C_{19}H_{22}NO]$ 	Reaction of benzylmagnesium bromide and 3-phenyl-5,5-dimethylpyrroline <i>N</i> -oxide followed by air oxidation Benzene ESR / 293	2.0057 ₅ N: 1.391 H _β : 2.370	96Mat1
$[C_{20}H_{32}NO]$ 	Reaction of <i>n</i> -octylmagnesium bromide and 3-phenyl-5,5-dimethylpyrroline <i>N</i> -oxide followed by air oxidation Benzene ESR / 293	2.0058 ₁ N: 1.391 H _β : 2.348	96Mat1

12.3.1.4.3 5-Substituted 2,4-diphenyl-2-methylpyrrolidine-*N*-oxyls

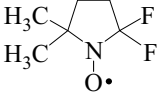
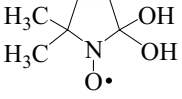
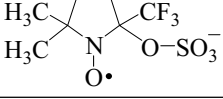
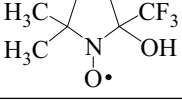
$[C_{17}H_{18}NO_2]$  	Photolysis of H ₂ O ₂ and 3,5-diphenyl-5-methylpyrroline <i>N</i> -oxide Water ESR / 298	N: 1.386 H _β : 1.386 N: 1.415 H _β : 0.950	98Mat1
$[C_{18}H_{20}NO]$  	Reaction of methylmagnesium bromide and 3,5-diphenyl-5-methylpyrroline <i>N</i> -oxide followed by air oxidation Toluene ESR / 298	N: 1.408 H _β : 2.266 N: 1.430 H _β : 1.430	98Mat1

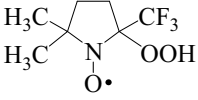
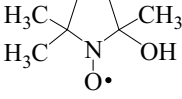
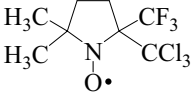
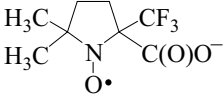
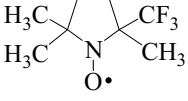
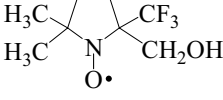
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₉H₂₀NO]</p> 	<p>Reaction of vinylmagnesium bromide and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide followed by air oxidation Toluene ESR / 298</p>	<p>N: 1.452 H_β: 2.200</p> <p>N: 1.364 H_β: 1.364</p>	98Mat1
<p>[C₁₉H₂₂NO₂]</p> 	<p>Photolysis of ethanol, benzophenone and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide Toluene ESR / 298</p>	<p>N: 1.451 H_β: 2.274</p> <p>N: 1.387 H_β: 1.660</p>	98Mat1
<p>[C₂₀H₂₄NO]</p> 	<p>Reaction of 2-propylmagnesium bromide and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide followed by air oxidation Toluene ESR / 298</p>	<p>N: 1.430 H_β: 2.156</p> <p>N: 1.386 H_β: 2.024</p>	98Mat1
<p>[C₂₁H₂₆NO]</p> 	<p>Photolysis of 2-butanol, benzophenone and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide Toluene ESR – ENDOR / 298</p>	<p>N: 1.452 H_β: 2.332</p> <p>N: 1.386 H_β: 1.892</p>	98Mat1

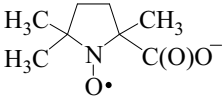
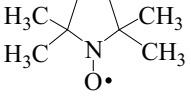
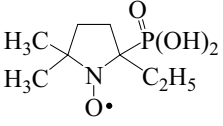
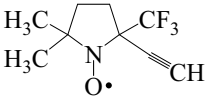
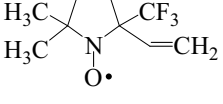
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₂₁H₂₆NO₂]</p> 	<p>Photolysis of 2-butanol, benzophenone and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide Toluene ESR / 298</p>	<p>N: 1.496 H_β: 2.376</p> <p>N: 1.452 H_β: 1.958</p>	98Mat1
<p>[C₂₁H₂₆NO₂]</p> 	<p>Photolysis of BOOB and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide Toluene ESR – ENDOR / 298</p>	<p>N: 1.300 H_β: 1.550 H_γ: 0.15</p> <p>N: 1.250 H_β: 0.725 H_γ: 0.125</p>	98Mat1
<p>[C₂₃H₂₂NO]</p> 	<p>Reaction of phenylmagnesium bromide and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide followed by air oxidation Toluene ESR / 298</p>	<p>N: 1.430 H_β: 2.135 H_γ: 0.138</p> <p>N: 1.330 H_β: 1.602 H_γ: 0.138</p>	98Mat1
<p>[C₂₃H₂₈NO]</p> 	<p>Reaction of cyclohexylmagnesium bromide and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide followed by air oxidation Toluene ESR / 298</p>	<p>N: 1.430 H_β: 2.288</p> <p>N: 1.408 H_β: 1.892</p>	98Mat1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₂₄H₂₄NO]</p> 	<p>Reaction of benzylmagnesium bromide and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide followed by air oxidation Toluene ESR / 298</p>	<p>N: 1.430 H_β: 2.288</p> <p>N: 1.408 H_β: 1.672</p>	98Mat1
<p>[C₂₅H₃₄NO]</p> 	<p>Reaction of <i>n</i>-octylmagnesium bromide and 3,5-diphenyl-5-methylpyrrolidine <i>N</i>-oxide followed by air oxidation Toluene ESR / 298</p>	<p>N: 1.430 H_β: 2.288</p> <p>N: 1.408 H_β: 1.914</p>	98Mat1

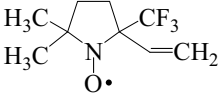
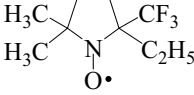
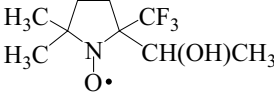
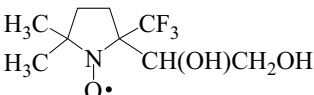
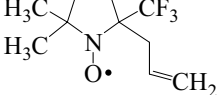
12.3.1.4.4 5,5-Disubstituted 2,2-dimethylpyrrolidine-*N*-oxyls

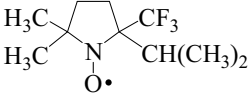
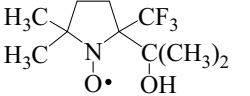
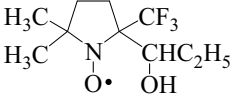
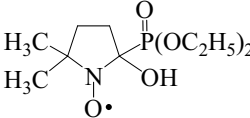
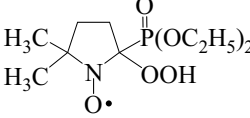
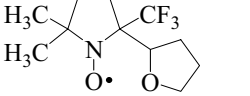
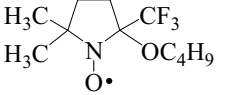
<p>[C₆H₁₀F₂NO]</p> 	<p>Reaction of DMPO with XeF₂ CH₂Cl₂ ESR / 298</p>	<p>N: 1.12 2F_β: 2.18 2H_γ: 0.196</p>	97Ebe1
<p>[C₆H₁₂NO₃]</p> 	<p>Photolysis ($\lambda = 260$ nm) of HDMPN and H₂O₂ Water ESR / 298</p>	<p>2.0063 N: 1.53 3H_γ: 0.12</p>	92Mak1
HDMPN = 1-Hydroxy-5,5-dimethyl-1-pyrrolid-2-one			
<p>[C₇H₁₀F₃NO₅S][−]</p> 	<p>Reaction of 2-TFDMPO and sodium persulphate Water ESR / 298</p>	<p>N: 1.297 3F: 0.321</p>	95Jan1
<p>[C₇H₁₁F₃NO₂]</p> 	<p>Photolysis of H₂O₂ and 2-TFDMPO Water ESR / 298</p>	<p>N: 1.398 3F: 0.270</p>	95Jan1

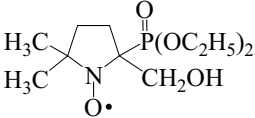
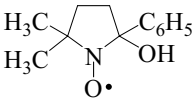
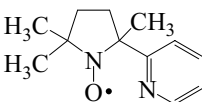
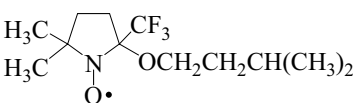
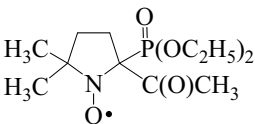
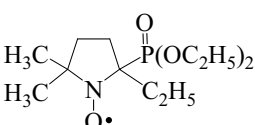
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_7H_{11}F_3NO_3]$ 	Photolysis of H_2O_2 and 2-TFDMPO Water ESR / 298	N: 1.314 3F: 0.280 2H γ : 0.083	95Jan1
$[C_7H_{14}NO_2]$ 	Sonolysis of an aqueous solution of α - ^{13}C -M $_3$ PO γ -Irradiation of a N_2O saturated aqueous solution of α - ^{13}C -M $_3$ PO Water ESR / 298 γ -Irradiation of a N_2O saturated aqueous solution of β - ^{13}C -M $_3$ PO Water ESR / 298	N: 1.587 $^{13}C_\alpha$: 0.600 N: 1.476 $^{13}C_\beta$: 0.430	94Bar1
$[C_8H_{10}Cl_3F_3NO]$ 	Incubation of rat liver with 2-TFDMPO and (^{13}C)- CCl_4 Chloroform ESR / 298	N: 1.254 3F: 0.341 $^{13}C_\beta$: 1.266	95Jan1
$[C_8H_{10}F_3NO_3]^-$ 	Reaction of sodium formate with H_2O_2 and 2-TFDMPO Water ESR / 298	N: 1.457 F: 0.325 F: 0.17 F: 0.076	95Jan1
Linewidth alternation at room temperature.			
$[C_8H_{13}F_3NO]$ 	Photolysis of DMSO, H_2O_2 and 2-TFDMPO Water ESR / 298	N: 1.490 3F: 0.205	95Jan1
$[C_8H_{13}F_3NO_2]$ 	Photolysis of methanol, H_2O_2 and 2-TFDMPO Water ESR / 298	N: 1.442 3F: 0.233	95Jan1

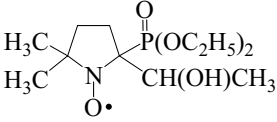
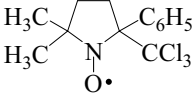
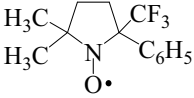
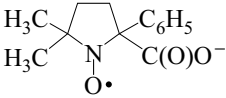
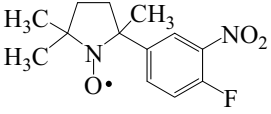
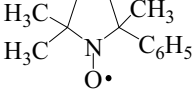
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[\text{C}_8\text{H}_{13}\text{NO}_3]^-$ 	γ -Irradiation of α - ^{13}C -M ₃ PO and sodium formate Water ESR / 298 γ -Irradiation of β - ^{13}C -M ₃ PO and sodium formate Water ESR / 298 * Carboxylate carbon. * Methyl carbon.	N: 1.587 $^{13}\text{C}_\alpha$: 0.671 $^{13}\text{C}_\beta$: 1.308* N: 1.535 $^{13}\text{C}_\beta$: 0.514*	94Bar1
$[\text{C}_8\text{H}_{16}\text{NO}]$ 	γ -Irradiation of DMSO and α - ^{13}C -M ₃ PO Water ESR / 298 γ -Irradiation of DMSO and β - ^{13}C -M ₃ PO Water ESR / 298	N: 1.641 $^{13}\text{C}_\alpha$: 0.612 N: 1.588 $^{13}\text{C}_\beta$: 0.718	94Bar1
$[\text{C}_8\text{H}_{17}\text{NO}_4\text{P}]$ 	Treatment of corresponding diethoxyphosphoryl nitroxide with lithium isopropylamide ESR / 298 Benzene Methanol Water, pH 1.0 (pH 14.0)	N: 1.347 ^{31}P : 5.404 N: 1.494 ^{31}P : 4.563 N: 1.513 (1.540) ^{31}P : 5.104 (4.814)	99Hai2
$[\text{C}_9\text{H}_{11}\text{F}_3\text{NO}]$ 	Reaction of ethynylmagnesium bromide and 2-TFDMPO followed by air oxidation ESR / 298 Benzene Water	N: 1.344 ^{31}F : 0.166 N: 1.491 ^{31}F : 0.176	95Jan1
$[\text{C}_9\text{H}_{13}\text{F}_3\text{NO}]$ 	Reaction of 2-TFDMPO and vinylmagnesium bromide followed by air oxidation Benzene ESR / 298 * Linewidth alternation at room temperature.	N: 1.325 ^{19}F : 0.27 ^{19}F : 0.18 ^{19}F : 0.14	95Jan1

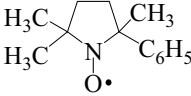
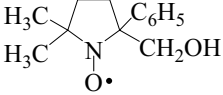
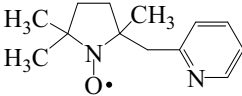
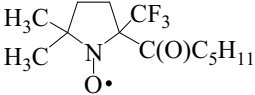
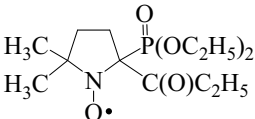
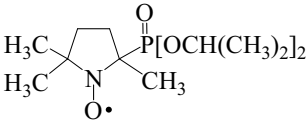
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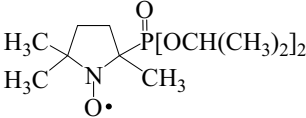
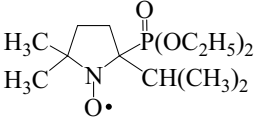
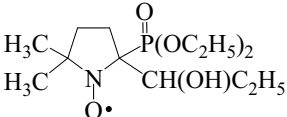
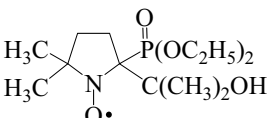
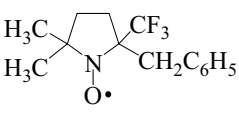
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₉H₁₃F₃NO] (<i>continued</i>)</p> 	<p>Reaction of 2-TFDMPO and vinylmagnesium bromide followed by air oxidation ESR / 298 Water</p> <p>Toluene ENDOR / 200</p>	<p>N: 1.474* F: 0.26 F: 0.17 F: 0.13 H: 0.092 H: 0.069 H: 0.034</p> <p>N: 1.474 F: 0.494 F: 0.112 F: 0.081 H: 0.1 H: 0.051 H: 0.019</p>	95Jan1
* Linewidth alternation at room temperature.			
<p>[C₉H₁₅F₃NO]</p> 	<p>Reaction of 2-TFDMPO and ethylmagnesium bromide followed by air oxidation ESR / 298 Benzene</p> <p>Water</p>	<p>N: 1.293 3F: 0.264</p> <p>N: 1.466 3F: 0.251</p>	95Jan1
<p>[C₉H₁₅F₃NO₂]</p> 	<p>Photolysis of ethanol, H₂O₂ and 2-TFDMPO Water ESR / 298</p>	<p>N: 1.447 3F: 0.287</p>	95Jan1
<p>[C₉H₁₅F₃NO₃]</p> 	<p>Photolysis of ethylene glycol with H₂O₂ and 2-TFDMPO Water ESR / 298</p>	<p>N: 1.437 3F: 0.264</p>	95Jan1
<p>[C₁₀H₁₅F₃NO]</p> 	<p>Reaction of 2-TFDMPO and allylmagnesium bromide followed by air oxidation ESR / 298 Benzene</p> <p>Water</p>	<p>N: 1.290 3F: 0.253</p> <p>N: 1.459 3F: 0.244</p>	95Jan1

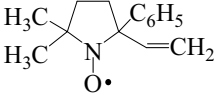
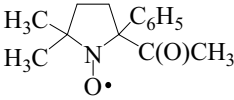
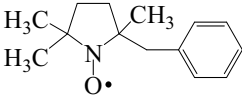
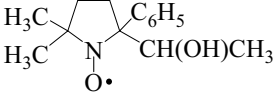
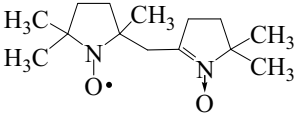
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[\text{C}_{10}\text{H}_{17}\text{F}_3\text{NO}]$ 	Reaction of 2-TFDMPO and isopropylmagnesium bromide followed by air oxidation ESR / 298 Benzene Water	N: 1.295 3F: 0.319 N: 1.469 3F: 0.297	95Jan1
$[\text{C}_{10}\text{H}_{17}\text{F}_3\text{NO}_2]$ 	Photolysis of 2-propanol with 2-TFDMPO and H_2O_2 Water ESR / 298	N: 1.432 3F: 0.293	95Jan1
$[\text{C}_{10}\text{H}_{17}\text{F}_3\text{NO}_2]$ 	Photolysis of <i>n</i> -propanol with 2-TFDMPO and H_2O_2 Water ESR / 298	N: 1.452 3F: 0.274	95Jan1
$[\text{C}_{10}\text{H}_{21}\text{NO}_5\text{P}]$ 	Photolysis of H_2O_2 and DEP-DMPO Water ESR / 298	N: 1.353 ^{31}P : 3.226	95Jan2
$[\text{C}_{10}\text{H}_{21}\text{NO}_6\text{P}]$ 	Photolysis of H_2O_2 and DEP-DMPO Water ESR / 298	N: 1.341 ^{31}P : 3.257	95Jan2
$[\text{C}_{11}\text{H}_{17}\text{F}_3\text{NO}_2]$ 	Photolysis of THF with H_2O_2 and 2-TFDMPO Water ESR / 298	N: 1.437 3F: 0.264	95Jan1
$[\text{C}_{11}\text{H}_{19}\text{F}_3\text{NO}_2]$ 	Photolysis of <i>n</i> -butyl nitrite and 2-TFDMPO Benzene ESR / 298	N: 1.188 3F: 0.274	95Jan1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{23}NO_5P]$ 	Photolysis of methanol, H ₂ O ₂ and DEP-DMPO Water ESR / 298	N: 1.483 ³¹ P: 5.026	95Jan2
$[C_{12}H_{16}NO_2]$ 	Photolysis of sodium persulfate and ¹³ C-2-phenyl-5,5-dimethylpyrrolidine <i>N</i> -oxide Water ESR / 298	N: 1.472 ¹³ C _α : 0.405 2H _γ : 0.074	94Jan1
$[C_{12}H_{17}N_2O]$ 	Generation not described Toluene ESR	N: 1.386 2 ¹³ C _α : 0.56 ¹³ C _β : 1.20 ¹³ C _β : 0.7 ¹³ C _β : 0.6 ¹³ C _β : 0.5	93Roc1
$[C_{12}H_{21}F_3NO_2]$ 	Photolysis of <i>i</i> -amyl nitrite and 2-TFDMPO Benzene ESR / 298	N: 1.183 3F: 0.269 2H: 0.075	95Jan1
$[C_{12}H_{23}NO_5P]$ 	Photolysis of acetaldehyde, BHP, and DEP-DMPO ESR / 298 Benzene Water	N: 1.338 ³¹ P: 3.814 N: 1.433 ³¹ P: 3.918	95Jan2
$[C_{12}H_{25}NO_4P]$ 	Reaction of ethylmagnesium bromide and DEP-DMPO followed by air oxidation ESR / 298 Methanol Toluene	N: 1.438 ³¹ P: 4.814 N: 1.378 ³¹ P: 4.971	99Hai2

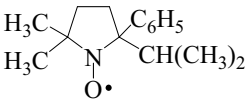
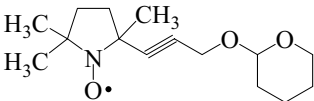
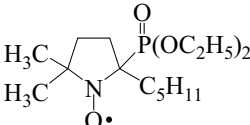
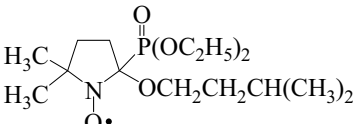
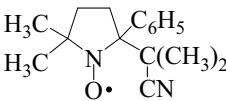
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{12}H_{25}NO_5P]$ 	Photolysis of ethanol, H_2O_2 , and DEP-DMPO Water ESR / 298	N: 1.3477 ^{31}P : 5.208	95Jan2
$[C_{13}H_{15}Cl_3NO]$ 	Photolysis of $CBrCl_3$ and ^{13}C -2-phenyl-5,5-dimethylpyrroline N -oxide Benzene ESR / 298	N: 1.320 $^{13}C_{\alpha}$: 0.603	94Jan1
$[C_{13}H_{15}F_3NO]$ 	Reaction of phenylmagnesium bromide and 2-TFDMPO ESR / 298 Water Toluene ESR / 383 ENDOR / 200	N: 1.454* F: 0.305 F: 0.144 F: 0.082 H_{γ} : 0.03 N: 1.307 3F: 0.196 F: 0.492 F: 0.112 F: 0.081 H_{γ} : 0.031	95Jan1
* Linewidth alternation at room temperature.			
$[C_{13}H_{15}NO_3]^-$ 	Photolysis of sodium formate, sodium persulfate and ^{13}C -2-phenyl-5,5-dimethylpyrroline N -oxide Water ESR / 298	N: 1.536 $^{13}C_{\alpha}$: 0.657	94Jan1
$[C_{13}H_{16}FN_2O_3]$ 	Generation not described Toluene ESR	N: 1.376 $2^{13}C_{\alpha}$: 0.58 $^{13}C_{\beta}$: 1.09 $^{13}C_{\beta}$: 0.7 $^{13}C_{\beta}$: 0.6 $^{13}C_{\beta}$: 0.5	93Roc1
$[C_{13}H_{18}NO]$  (continued)	Generation not described Toluene ESR	N: 1.388 $2^{13}C_{\alpha}$: 0.57 $^{13}C_{\beta}$: 1.10 $^{13}C_{\beta}$: 0.71 $^{13}C_{\beta}$: 0.61 $^{13}C_{\beta}$: 0.51	93Roc1, 94Jan1

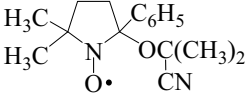
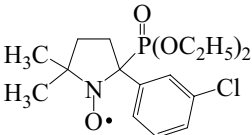
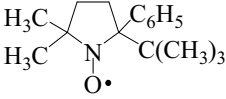
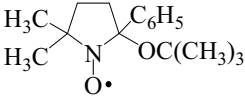
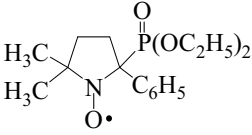
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₃H₁₈NO] (<i>continued</i>)</p> 	<p>Reaction of methylmagnesium bromide and ¹³C-2-phenyl-5,5-dimethylpyrrolidine <i>N</i>-oxide Water ESR / 298</p>	<p>N: 1.576 ¹³C_α: 0.607</p>	94Jan1
<p>[C₁₃H₁₈NO₂]</p> 	<p>Photolysis of methanol, benzophenone and ¹³C-2-phenyl-5,5-dimethylpyrrolidine <i>N</i>-oxide ESR / 298 Benzene Water</p>	<p>N: 1.428 ¹³C_α: 0.603</p> <p>N: 1.516 ¹³C_α: 0.630</p>	94Jan1
<p>[C₁₃H₁₉N₂O]</p> 	<p>Generation not described Toluene ESR</p>	<p>N: 1.405 2¹³C_α: 0.56 ¹³C_β: 0.72 2¹³C_β: 0.68 ¹³C_β: 0.65</p>	93Roc1
<p>[C₁₃H₂₁F₃NO₂]</p> 	<p>Photolysis of hexanal, BOOB and 2-TFDMPO Water ESR / 298</p>	<p>N: 1.388* F: 0.265 F: 0.215 F: 0.140</p>	95Jan1
* Linewidth alternation at room temperature.			
<p>[C₁₃H₂₅NO₅P]</p> 	<p>Photolysis of propanal, BHP, and DEP-DMPO ESR / 298 Benzene Water</p>	<p>N: 1.342 ³¹P: 3.796</p> <p>N: 1.430 ³¹P: 3.907</p>	95Jan2
<p>[C₁₃H₂₇NO₄P]</p> 	<p>Synthesis described Phosphate buffer, pH 7.4 ESR / 298 Water / Water – SDS ESR / 298</p>	<p>N: 1.54 ³¹P: 4.76</p> <p><i>Free nitroxide</i> N: 1.538 ³¹P: 4.741 <i>Included nitroxide</i> N: 1.500 ³¹P: 4.394</p>	97Mat1 99Riz1
(<i>continued</i>)	* Partition coefficient between water and micelles, <i>K</i> _p = 450.		

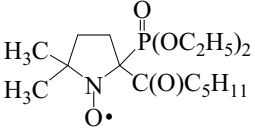
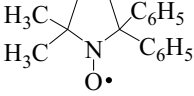
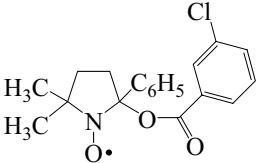
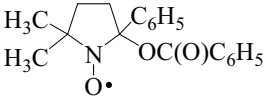
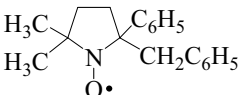
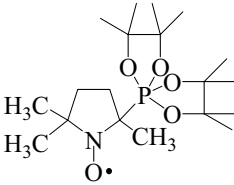
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>$[C_{13}H_{27}NO_4P]$ (<i>continued</i>)</p> 	<p>Glycerol (fluid solution) ESR / > 330 Glycerol (rigid matrix) ESR / 200</p>	<p>N: 1.484 ^{31}P: 4.705 2.0026 \pm 2.0074 iso 2.0058 <i>Conformer I</i> N: 3.39 \pm 0.53 iso 1.48 ^{31}P: 6.02 \pm 5.21 iso 5.48 <i>Conformer II</i> N: 3.45 \pm 0.52 iso 1.495 ^{31}P: 3.75 \pm 3.68 iso 3.7</p>	98Cha1
<p>$[C_{13}H_{27}NO_4P]$</p> 	<p>Reaction of 2-propyl-magnesium bromide and DEP-DMPO followed by air oxidation Toluene ESR / 298</p>	<p>N: 1.375 ^{31}P: 4.850</p>	99Hai2
<p>$[C_{13}H_{27}NO_5P]$</p> 	<p>Reaction of <i>n</i>-propanol, H₂O₂ and DEP-DMPO Water ESR / 298</p>	<p>N: 1.489 ^{31}P: 5.216</p>	95Jan2
<p>$[C_{13}H_{27}NO_5P]$</p> 	<p>Reaction of 2-propanol, H₂O₂ and DEP-DMPO Water ESR / 298</p>	<p>N: 1.454 ^{31}P: 5.457</p>	95Jan2
<p>$[C_{14}H_{17}F_3NO]$</p> 	<p>Reaction of benzylmagnesium bromide and 2-TFDMPO followed by air oxidation ESR / 298 Water Benzene Toluene ESR / 110 ENDOR / 200</p>	<p>N: 1.447* F: 0.299 F: 0.269 F: 0.239 H_{γ}: 0.088 N: 1.76* F: 0.315 F: 0.284 F: 0.253 H_{γ}: 0.088 N: 1.281 3F: 0.282 H_{γ}: 0.081 H_{γ}: 0.020</p>	95Jan1
* Linewidth alternation at room temperature.			

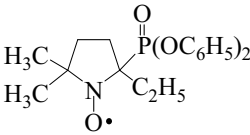
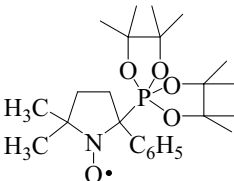
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₄H₁₈NO]</p> 	<p>Reaction of vinylmagnesium bromide and ¹³C-2-phenyl-5,5-dimethylpyrrolidine <i>N</i>-oxide ESR / 298 Benzene</p> <p>Water</p>	<p>N: 1.371 ¹³C_α: 0.581</p> <p>N: 1.548 ¹³C_α: 0.608</p>	94Jan1
<p>[C₁₄H₁₈NO₂]</p> 	<p>Photolysis of acetaldehyde, benzophenone and ¹³C-2-phenyl-5,5-dimethylpyrrolidine <i>N</i>-oxide ESR / 298 Benzene</p> <p>Water</p>	<p>N: 1.326 ¹³C_α: 0.617</p> <p>N: 1.471 ¹³C_α: 0.653</p>	94Jan1
<p>[C₁₄H₂₀NO]</p> 	<p>Generation not described Toluene ESR</p>	<p>N: 1.415 2¹³C_α: 0.57 ¹³C_β: 0.75 ¹³C_β: 0.70 2¹³C_β: 0.65</p>	93Roc1
<p>[C₁₄H₂₀NO₂]</p> 	<p>Photolysis of ethanol, benzophenone and ¹³C-2-phenyl-5,5-dimethylpyrrolidine <i>N</i>-oxide ESR / 298 Benzene</p> <p>Water</p>	<p>N: 1.455 ¹³C_α: 0.590</p> <p>N: 1.539 ¹³C_α: 0.626</p>	94Jan1
<p>C₁₄H₂₅N₂O₂]</p> 	<p>Self reaction of α-¹³C-M₃PO Phosphate buffer, pH 7 ESR / 298</p> <p>Self reaction of β-¹³C-M₃PO Phosphate buffer, pH 7 ESR / 298</p>	<p>N: 1.580 ¹³C_α: 0.600</p> <p>N: 1.530 2¹³C_β: 0.725</p>	94Bar1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₄H₂₇NO₅P]</p>	<p>Photolysis of THF, H₂O₂ and DEP-DMPO Water ESR / 298</p>	<p><i>Conformer I</i> N: 1.497 ³¹P: 5.071 <i>Conformer II</i> N: 1.460 ³¹P: 4.968</p>	95Jan2
	Ratio <i>I/II</i> = 1.4		
<p>[C₁₄H₂₉NO₄P]</p>	<p>Reaction of <i>tert</i>-butyl-magnesium bromide with DEP-DMPO followed by air oxidation Toluene ESR / 298</p>	<p>N: 1.369 ³¹P: 4.988</p>	99Hai2
<p>[C₁₄H₂₉NO₅P]</p>	<p>Photolysis of <i>n</i>-butyl nitrite and DEP-DMPO ESR / 298 Benzene Water</p>	<p>N: 1.247 ³¹P: 2.579 N: 1.353 ³¹P: 3.446</p>	95Jan2
<p>[C₁₄H₂₉NO₅P]</p>	<p>Photolysis of <i>i</i>-butyl nitrite and DEP-DMPO ESR / 298 Benzene Water</p>	<p>N: 1.240 ³¹P: 2.598 N: 1.354 ³¹P: 3.441</p>	95Jan2
<p>[C₁₄H₂₉NO₆P]</p>	<p>Photolysis of BHP and DEP-DMPO Isooctane ESR / 298</p>	<p>N: 1.260 ³¹P: 3.191</p>	95Jan2
<p>[C₁₄H₃₀NO₇P₂]</p>	<p>Synthesis described Cyclopropane ESR / 140 to 343</p>	<p><i>Conformer I</i> N: 1.352 ³¹P: 4.34 <i>Conformer I</i> N: 1.330 ³¹P: 4.44 <i>Conformer III</i> N: 1.352 ³¹P: 4.93 <i>Conformer IV</i> N: 1.330 ³¹P: 3.69</p>	97Roc1
	Detailed conformational analysis reported.		

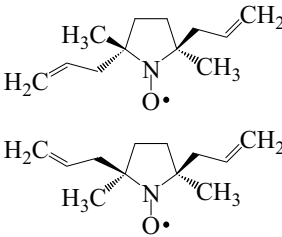
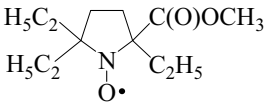
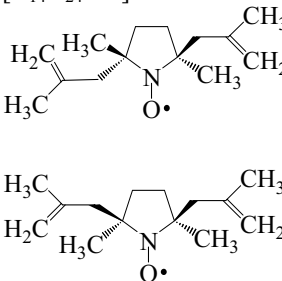
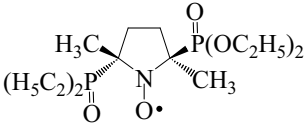
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₅H₂₂NO]</p> 	<p>Reaction of 2-propylmagnesium bromide and ¹³C-2-phenyl-5,5-dimethylpyrrolidine <i>N</i>-oxide followed by air oxidation</p> <p>ESR / 298</p> <p>Benzene</p> <p>Water</p>	<p>N: 1.394 ¹³C_α: 0.594</p> <p>N: 1.559 ¹³C_α: 0.609</p>	94Jan1
<p>[C₁₅H₂₄NO₃]</p> 	<p>Generation not described</p> <p>Toluene</p> <p>ESR</p>	<p>N: 1.435 2¹³C_α: 0.47 ¹³C_β: 1.30 ¹³C_β: 0.71 ¹³C_β: 0.56 ¹³C_β: 0.40</p>	93Roc1
<p>[C₁₅H₃₁NO₄P]</p> 	<p>Reaction of <i>n</i>-pentylmagnesium bromide with DEP-DMPO followed by air oxidation</p> <p>ESR / 298</p> <p>Toluene</p> <p>Water, pH 7.0</p>	<p>N: 1.381 ³¹P: 5.383</p> <p>N: 1.500 ³¹P: 5.292</p>	99Hai2
<p>[C₁₅H₃₁NO₅P]</p> 	<p>Photolysis of <i>i</i>-amyl nitrite and DEP-DMPO</p> <p>ESR / 298</p> <p>Benzene</p> <p>Water</p>	<p>N: 1.244 ³¹P: 2.615</p> <p>N: 1.348 ³¹P: 3.415</p>	95Jan2
<p>[C₁₆H₂₁N₂O]</p> 	<p>Photolysis (thermolysis) of AIBN and ¹³C-2-phenyl-5,5-dimethylpyrrolidine <i>N</i>-oxide</p> <p>ESR / 298</p> <p>Benzene</p>	<p>N: 1.350 ¹³C_α: 0.612</p>	94Jan1

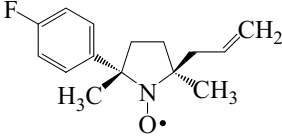
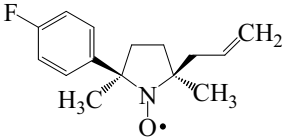
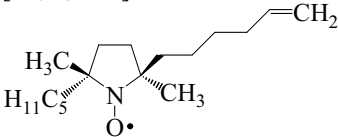
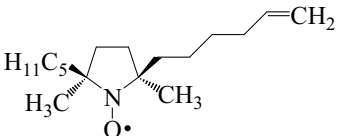
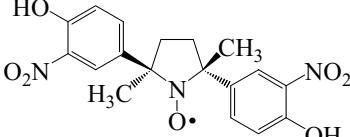
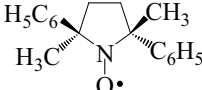
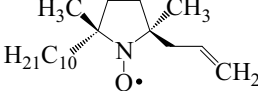
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{16}H_{21}N_2O_2]$ 	Photolysis (thermolysis) of AIBN and ^{13}C -2-phenyl-5,5-dimethylpyrrolidine N -oxide in the presence of O_2 ESR / 298 Benzene Water	N: 1.232 $^{13}C_{\alpha}$: 0.320 $2H_{\gamma}$: 0.153 N: 1.407 $^{13}C_{\alpha}$: 0.468 $2H_{\gamma}$: 0.081	94Jan1
$[C_{16}H_{24}ClNO_4P]$ 	Photolysis of CPBA and DEP-DMPO ESR / 298 Benzene	N: 1.363 ^{31}P : 3.460	95Jan2
$[C_{16}H_{24}NO]$ 	Reaction of <i>tert</i> -butylmagnesium bromide and ^{13}C -2-phenyl-5,5-dimethylpyrrolidine N -oxide followed by air oxidation ESR / 298 Benzene Water	N: 1.391 $^{13}C_{\alpha}$: 0.576 N: 1.529 $^{13}C_{\alpha}$: 0.626	94Jan1
$[C_{16}H_{24}NO_2]$ 	Photolysis of BOOB and ^{13}C -2-phenyl-5,5-dimethylpyrrolidine N -oxide ESR / 298 Benzene Water	N: 1.276 $^{13}C_{\alpha}$: 0.479 $2H_{\gamma}$: 0.169 N: 1.468 $^{13}C_{\alpha}$: 0.504	94Jan1
$[C_{16}H_{25}NO_4P]$ 	Photolysis of diethylphosphite, benzophenone and 2-phenyl-5,5-dimethylpyrrolidine N -oxide ESR / 298 Benzene Water	N: 1.347 ^{31}P : 3.458 N: 1.494 ^{31}P : 3.166	95Jan2, 99Hai1, 99Hai2

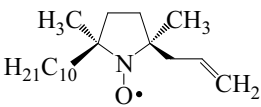
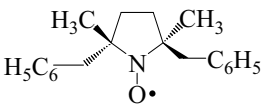
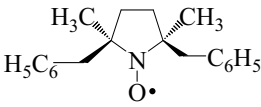
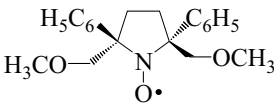
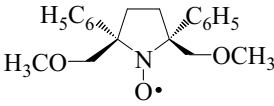
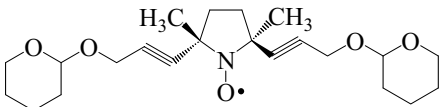
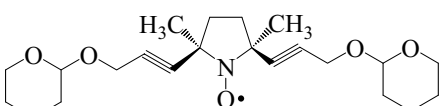
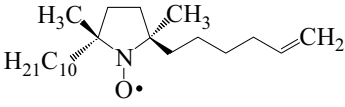
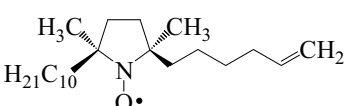
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₆H₃₁NO₅P]</p> 	<p>Photolysis of hexanal, BHP and DEP-DMPO ESR / 298 Benzene Water</p>	<p>N: 1.388 ³¹P: 3.776 N: 1.435 ³¹P: 3.864</p>	95Jan2
<p>[C₁₈H₂₀NO]</p> 	<p>Reaction of phenylmagnesium bromide and ¹³C-2-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide followed by air oxidation ESR / 298 Benzene Water</p>	<p>N: 1.370 ¹³C_α: 0.558 N: 1.539 ¹³C_α: 0.606</p>	94Jan1
<p>[C₁₉H₁₉ClNO₃]</p> 	<p>Photolysis of CPBA and ¹³C-2-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide ESR / 298 Benzene</p>	<p>N: 1.280 ¹³C_α: 0.376</p>	96San1
<p>[C₁₉H₂₀NO₃]</p> 	<p>Photolysis of dibenzoyl peroxide and ¹³C-2-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide ESR / 298 Benzene</p>	<p>N: 1.266 ¹³C_α: 0.320 2H_γ: 0.061</p>	94Jan1
<p>[C₁₉H₂₂NO]</p> 	<p>Reaction of benzylmagnesium bromide and ¹³C-2-phenyl-5,5-dimethylpyrroline <i>N</i>-oxide ESR / 298 Benzene Water</p>	<p>N: 1.377 ¹³C_α: 0.603 N: 1.528 ¹³C_α: 0.635</p>	94Jan1
<p>[C₁₉H₃₇NO₅P]</p> 	<p>Photolysis of the phosphorane, benzophenone and 2,5,5-trimethylpyrroline <i>N</i>-oxide ESR / 298 Benzene</p>	<p>N: 1.381 ³¹P: 5.165</p>	99Hai1

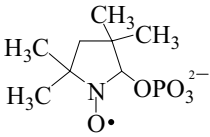
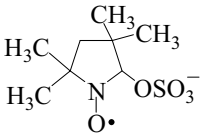
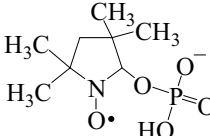
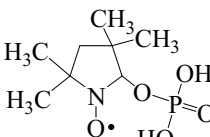
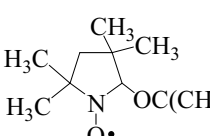
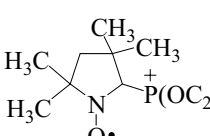
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{20}H_{25}NO_4P]$ 	Synthesis described ESR / 298 Toluene Water	N: 1.331 ^{31}P : 5.788 N: 1.380 ^{31}P : 5.7650	95Jan2
$[C_{24}H_{39}NO_5P]$ 	Photolysis of the phosphorane, benzophenone and 2-phenyl-5,5-dimethylpyrrolidine <i>N</i> -oxide ESR / 298 Benzene	N: 1.353 ^{31}P : 3.813	99Hai1

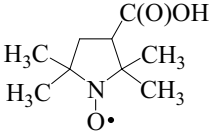
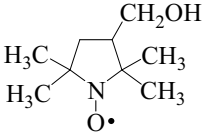
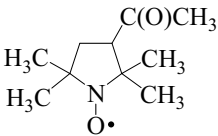
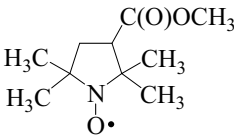
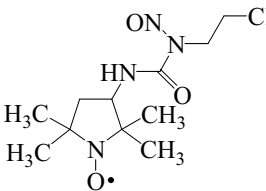
12.3.1.4.5 Other 2,2,5,5-tetrasubstituted pyrrolidine-*N*-oxyls

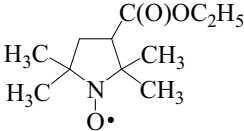
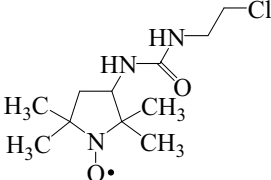
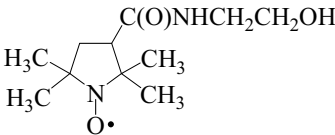
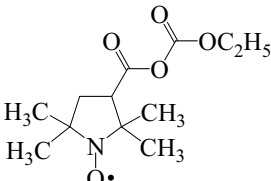
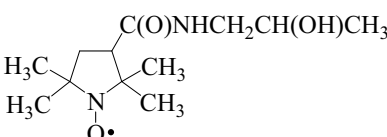
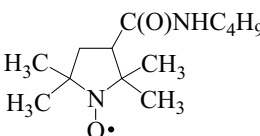
$[C_{12}H_{20}NO]$ 	Generation not described Toluene ESR	N: 1.385 $2^{13}C_{\alpha}$: 0.56 $2^{13}C_{\beta}$: 0.79 $2^{13}C_{\gamma}$: 0.62 N: 1.395 $2^{13}C_{\alpha}$: 0.58 $2^{13}C_{\beta}$: 0.70 $2^{13}C_{\gamma}$: 0.63	93Roc1
$[C_{12}H_{22}NO_3]$ 	Synthesis described Chloroform ESR / 298	N: 1.37	89Kea1
$[C_{14}H_{24}NO]$ 	Generation not described Toluene ESR	N: 1.409 $2^{13}C_{\alpha}$: 0.57 $2^{13}C_{\beta}$: 0.80 $2^{13}C_{\gamma}$: 0.59 N: 1.420 $2^{13}C_{\alpha}$: 0.53 $2^{13}C_{\beta}$: 0.68 $2^{13}C_{\gamma}$: 0.63	93Roc1
$[C_{14}H_{30}NO_7P_2]$ 	Synthesis described Cyclopropane ESR / 140 to 313	N: 1.330 ^{31}P : 5.10	97Roc1

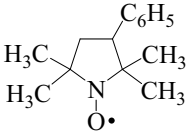
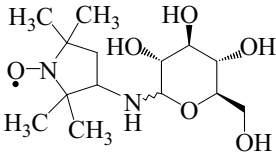
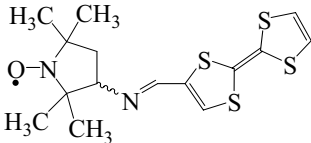
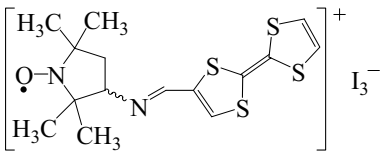
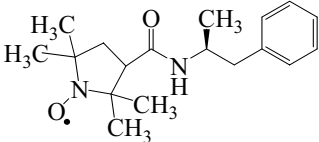
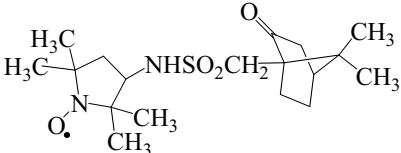
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₅H₁₉FNO]</p>  	Generation not described Toluene ESR	<p>N: 1.376 ²¹³C_α: 0.60 ¹³C_β: 1.10 ¹³C_β: 0.69 ¹³C_β: 0.65 ¹³C_β: 0.50</p> <p>N: 1.370 ²¹³C_α: 0.59 ¹³C_β: 1.06 ¹³C_β: 0.67 ¹³C_β: 0.62 ¹³C_β: 0.50</p>	93Roc1
<p>[C₁₇H₃₂NO]</p>  	Generation not described Toluene ESR	<p>N: 1.400 ²¹³C_α: 0.58 ¹³C_β: 0.80 ¹³C_β: 0.76 ²¹³C_β: 0.62</p> <p>N: 1.413 ²¹³C_α: 0.57 ²¹³C_β: 0.72 ²¹³C_β: 0.60</p>	93Roc1
<p>[C₁₈H₁₈N₃O₇]</p> 	Generation not described Toluene ESR	<p>N: 1.322 ²¹³C_α: 0.57 ²¹³C_β: 1.08 ²¹³C_β: 0.48</p>	93Roc1
<p>[C₁₈H₂₀NO]</p> 	Synthesis described Toluene ESR / 298	<p>2.0066 N: 1.33 <i>Racemic</i> 2.0059 N: 1.312</p>	97Ben1, 97Ein1
<p>[C₁₉H₃₆NO]</p>  (continued)	Generation not described Toluene ESR	<p>N: 1.398 ²¹³C_α: 0.56 ²¹³C_β: 0.79 ²¹³C_β: 0.62</p>	93Roc1

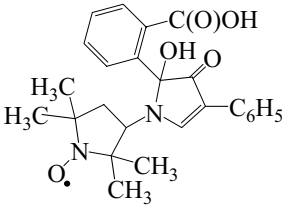
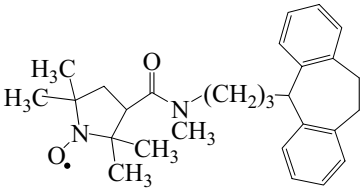
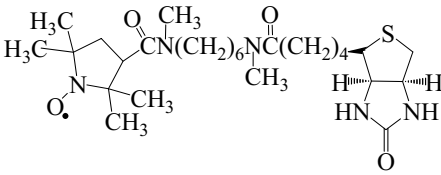
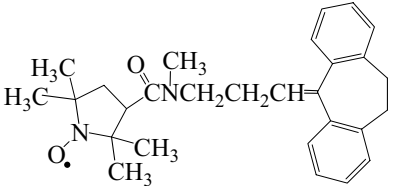
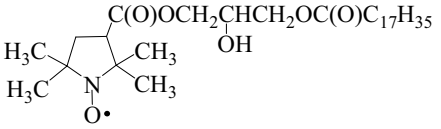
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₉H₃₆NO] (<i>continued</i>)</p> 	Generation not described Toluene ESR	N: 1.415 2 ¹³ C _α : 0.57 2 ¹³ C _β : 0.80 2 ¹³ C _γ : 0.59	93Roc1
<p>[C₂₀H₂₄NO]</p>  	Generation not described Toluene ESR	N: 1.396 2 ¹³ C _α : 0.58 2 ¹³ C _β : 0.83 2 ¹³ C _γ : 0.62 N: 1.416 2 ¹³ C _α : 0.58 4 ¹³ C _β : 0.68	93Roc1
<p>[C₂₀H₂₄NO₃]</p>  	Synthesis described Toluene ESR	2.006 N: 1.390 2.007 N: 1.381	00Shi1
<p>[C₂₂H₃₂NO₅]</p>  	Generation not described Toluene ESR	N: 1.440 2 ¹³ C _α : 0.42 2 ¹³ C _β : 1.26 2 ¹³ C _γ : 0.46 N: 1.435 2 ¹³ C _α : 0.42 2 ¹³ C _β : 1.13 2 ¹³ C _γ : 0.53	93Roc1
<p>[C₂₂H₄₂NO]</p>  	Generation not described Toluene ESR	N: 1.400 2 ¹³ C _α : 0.57 13C _β : 0.83 13C _γ : 0.79 2 ¹³ C _δ : 0.61 N: 1.419 2 ¹³ C _α : 0.57 2 ¹³ C _β : 0.73 2 ¹³ C _γ : 0.62	93Roc1

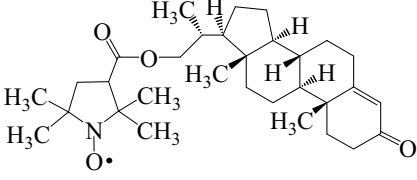
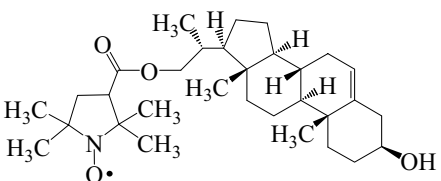
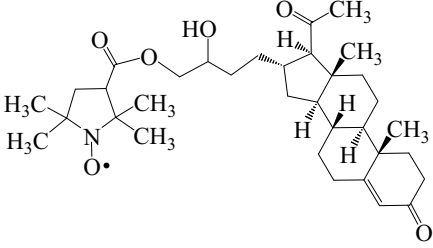
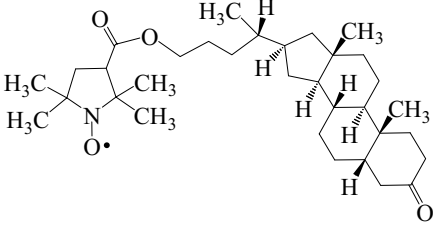
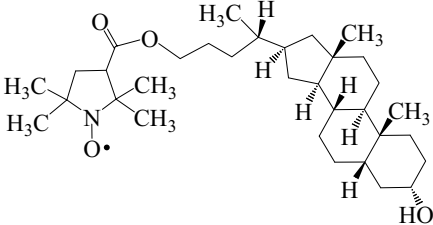
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
12.3.1.5 Pentasubstituted pyrrolidine-<i>N</i>-oxyls			
12.3.1.5.1 5-Substituted 2,2,4,4-tetramethylpyrrolidine-<i>N</i>-oxyls			
$[C_8H_{15}NO_3P]^{2-}$ 	Photolysis of Na ₄ P ₂ O ₈ and M ₄ PO Phosphate buffer, pH 7.4 ESR / 298	N: 1.50 H _β : 1.35	92Dav1
$[C_8H_{15}NO_3S]^-$ 	Photolysis of Na ₂ S ₂ O ₈ and M ₄ PO Phosphate buffer, pH 7.4 ESR / 298	N: 1.39 H _β : 0.84	92Dav1
$[C_8H_{16}NO_3P]^-$ 	Photolysis of Na ₄ P ₂ O ₈ and M ₄ PO Phosphate buffer, pH 7.4 ESR / 298	N: 1.51 H _β : 1.33	92Dav1
$[C_8H_{17}NO_3P]$ 	Photolysis of Na ₄ P ₂ O ₈ and M ₄ PO Phosphate buffer, pH 1.5 ESR / 298	N: 1.44 H _β : 1.04	92Dav1
$[C_{12}H_{24}NO_2]$ 	Photolysis of BOOB and M ₄ PO Toluene ESR – ENDOR / 200 to 230	2.0060 ₇ N: +1.309 H _β : +1.737 H _γ : -0.196 H _γ : -0.085 H _γ : -0.034	88Hai3
$[C_{14}H_{30}NO_4P]^+$ 	Reaction of triethylphosphite, M ₄ PO and TBPA CH ₂ Cl ₂ ESR / 298	N: 1.41 H _β : 1.74 ³¹ P: 4.59	94Ebe1
TBPA = Tris(4-bromophenyl)aminium hexachloroantimonate.			

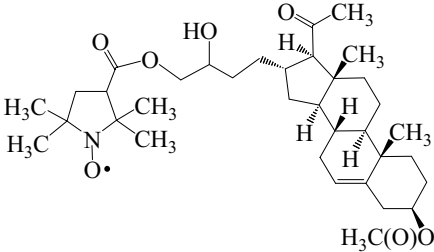
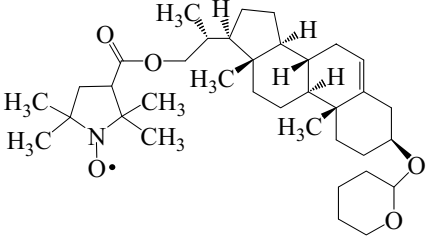
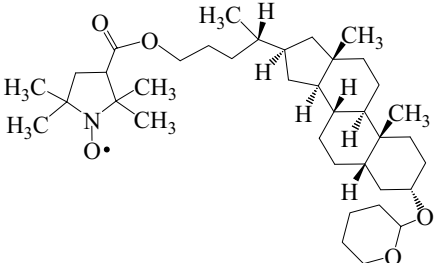
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
12.3.1.5.2 3-Substituted 2,2,5,5-tetramethylpyrrolidine-N-oxyls			
$[C_9H_{16}NO_3]$ 	Water ESR / 293 AOT reversed micelles – Isooctane – Water 9.1% ESR / 283 to 323 Toluene ESR / 133	2.0060 N: 1.62 N: 1.46 (pH 1.0) N: 1.64 (pH 13.0) 2.0022, 2.0058, 2.0088 iso 2.0056 N: 3.33, 0.45, 0.45 iso 1.41	95Sos1, 97Mat1, 97Sch1, 99Riz1, 00Kat1 89Oka1 90Bra1
AOT = Bis(2-ethylhexyl) sodium sulfosuccinate. Rotational correlation times at 298 K determined in water, n -octane, SOBS, SOBS-benzene and SOBS- n -octane [90Bra1].			
$[C_9H_{18}NO_2]$ 	Generation not described Toluene ESR	N: 1.423 $2^{13}C_{\alpha}$: 0.56 $^{13}C_{\beta}$: 0.92 $^{13}C_{\beta}$: 0.88 $^{13}C_{\beta}$: 0.54 $^{13}C_{\beta}$: 0.48	93Roc1
$[C_{10}H_{18}NO_2]$ 	Synthesis described ESR	N: 1.40	95Sos1
$[C_{10}H_{18}NO_3]$ 	Synthesis described ESR Chloroform Phosphate buffer, pH 7	N: 1.46 1.51	95Mar1
$[C_{11}H_{20}ClN_4O_3]$ 	Synthesis described Benzene ESR / 298	N: 1.40	93Sen1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{20}NO_3]$ 	Synthesis described ESR Chloroform Phosphate buffer, pH 7	N: 1.44 N: 1.56	95Mar1, 95Sos1
Identical spectra observed in both solvents when replacing the ethyl group with cyclohexyl, 4-methylen-2,2,dimethyl-1,3-dioxolane, benzyl or 3,4-dimethoxybenzyl [95Mar1].			
$[C_{11}H_{21}ClN_3O_2]$ 	Synthesis described Benzene ESR / 298	N: 1.42	93Sen2
$[C_{11}H_{21}N_2O_3]$ 	Synthesis described ESR	N: 1.45	95Sos1
$[C_{12}H_{20}NO_5]$ 	Reaction of 3-carboxy-2,2,5,5-tetramethylpyrrolidine- <i>N</i> -oxyl with ethylchloroformate and triethylamine Chloroform ESR	2.0060 N: 1.450	92Ban1
$[C_{12}H_{23}N_2O_3]$ 	Synthesis described ESR	N: 1.43	95Sos1
$[C_{13}H_{25}N_2O_2]$ 	Synthesis described ESR	N: 1.40	95Sos1

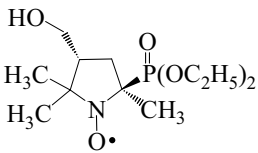
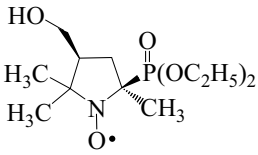
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{14}H_{20}NO]$ 	Generation not described Toluene ESR	N: 1.420 $2^{13}C_{\alpha}$: 0.54 $^{13}C_{\beta}$: 0.95 $^{13}C_{\beta}$: 0.90 $^{13}C_{\beta}$: 0.57 $^{13}C_{\beta}$: 0.44	93Roc1
$[C_{14}H_{27}N_2O_6]$ 	Synthesis described Water ESR	N: 1.60	89Sos1
$[C_{15}H_{19}N_2OS_4]$ 	Synthesis described <i>n</i> -Heptane ESR /298	2.0067 N: 1.440 [^{15}N : 1.845] ^{13}C : 0.265 ^{13}C : 0.195	93Sug1
Redox potentials vs SCE are given.			
$[C_{15}H_{19}N_2OS_4]^+$ 	Treatment of corresponding nitroxide with excess iodine in chlorobenzene ACN ESR /298	2.0079 N: 0.725	93Sug1
$[C_{18}H_{27}N_2O_2]$ 	Synthesis described ACN ESR / 298	2.0058 N: 1.38	93Deg1
Voltammetry of the nitroxide is reported.			
$[C_{18}H_{31}N_2O_4S]$ 	Synthesis described ESR / 298 Water, pH 7 0.1 M NaOH	N: 1.57 N: 1.63	93Sen3

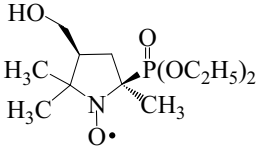
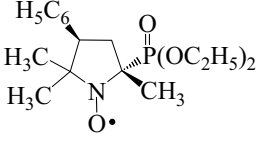
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{25}H_{27}N_2O_5]$ 	Synthesis described ESR	N: 1.60	97Li1
$[C_{27}H_{36}N_3O_2]$ 	Synthesis described ACN ESR / 298	2.0056 N: 1.40	93Deg1
$[C_{27}H_{48}N_5O_4S]$ 	Synthesis described ACN ESR / 298	2.0064 N: 1.37	93Deg1
$[C_{28}H_{35}N_2O_2]$ 	Synthesis described ACN ESR / 298	2.0057 N: 1.41	93Deg1
$[C_{30}H_{56}NO_6]$ 	Synthesis described Chloroform ESR / 298	2.0055 N: 1.462	99Kat1
Incorporation into a L- α -dipalmitoyl phosphatidyl choline model membrane studied by ESR, 1H and ^{31}P -NMR.			

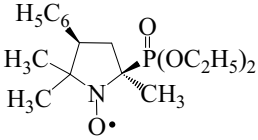
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{31}H_{48}NO_4]$ 	Synthesis described Chloroform ESR / 298	2.0069 N: 1.462 ₅	99Kat2
$[C_{31}H_{50}NO_4]$ 	Synthesis described Chloroform ESR / 298	2.0056 N: 1.47	99Kat2
$[C_{33}H_{50}NO_6]$ 	Synthesis described Chloroform ESR / 298	2.0059 N: 1.475	99Kat2
$[C_{33}H_{54}NO_4]$ 	Synthesis described Chloroform ESR / 298	2.0057 ₂ N: 1.450	92Ban1
$[C_{33}H_{56}NO_4]$ 	Synthesis described Chloroform ESR / 298	2.0057 ₂ N: 1.480	92Ban1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₃₅H₅₄NO₇]</p> 	Synthesis described Chloroform ESR / 298	2.0057 N: 1.475	99Kat2
<p>[C₃₆H₅₈NO₅]</p> 	Synthesis described Chloroform ESR / 298	2.0055 N: 1.45	99Kat2
<p>[C₃₈H₆₄NO₅]</p> 	Synthesis described Chloroform ESR / 298	2.0057 ₃ N: 1.400	92Ban1

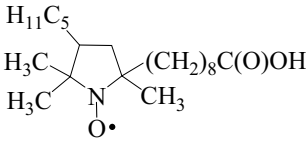
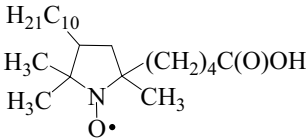
12.3.1.5.3 4-Substituted 2-(dialkoxyphosphoryl)-2,5,5-trimethylpyrrolidine-*N*-oxyls

<p>[C₁₂H₂₅NO₅P]</p> 	Synthesis described ESR / 298 CH ₂ Cl ₂	2.0060 ₄ N: 1.410 ³¹ P: 5.320	93Sti1
	Benzene	2.0061 ₃ N: 1.396 ³¹ P: 5.336	
	<i>tert</i> -Butylbenzene	2.0061 ₂ N: 1.365 ³¹ P: 5.283	
 <p>(continued)</p>	CH ₂ Cl ₂	2.0058 ₆ N: 1.404 ³¹ P: 3.578	

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₂H₂₅NO₅P] (<i>continued</i>)</p> 	<p>Benzene</p> <p><i>tert</i>-Butylbenzene</p>	<p>2.0059₇ N: 1.395 ³¹P: 3.679</p> <p>2.0059₆ N: 1.391 ³¹P: 3.724</p>	93Sti1
<p>[C₁₇H₂₇NO₄P]</p> 	<p>Reaction of 4-phenyl-2,5,5-trimethylpyrroline <i>N</i>-oxide and triethyl phosphite ESR / 298 Benzene</p> <p>Phosphate buffer, pH 7.4</p> <p>Water – SDS</p> <p>Glycerol (fluid solution) ESR / > 330 Glycerol (rigid matrix) ESR / 200</p> <p>Benzene</p> <p>Phosphate buffer, pH 7.4</p> <p>Water – SDS</p>	<p>2.0059 N: 1.375 ³¹P: 5.298 3H_γ: 0.043 6H_γ: 0.045 ¹³C: 0.76 ¹³C: 0.50</p> <p>N: 1.52 ³¹P: 5.50</p> <p><i>Free nitroxide</i>[*] N: 1.524 ³¹P: 5.452 <i>Included Nitroxided</i> N: 1.492 ³¹P: 5.305</p> <p>N: 1.48 ³¹P: 5.365 2.0085, 2.0068, 2.0021 iso 2.0058 N: 0.65, 0.54, 3.35 iso 1.51 ³¹P: 4.93, 5.34, 5.89 iso 5.39</p> <p>2.0059 N: 1.375 ³¹P: 3.600</p> <p>N: 1.52 ³¹P: 3.64</p> <p><i>Free nitroxide</i>[*] N: 1.520 ³¹P: 3.638 <i>Included Nitroxided</i> N: 1.487 ³¹P: 3.520</p>	<p>91Mer1, 97Mat1</p> <p>99Riz1</p> <p>98Cha1</p> <p>91Mer1, 97Mat1</p> <p>99Riz1</p>
(<i>continued</i>)	<p>* Partition coefficient, $K_p = 813$. [♠] Partition coefficient, $K_p = 2122$.</p>		

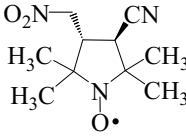
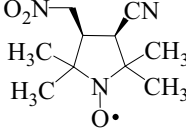
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₇H₂₇NO₄P] (<i>continued</i>)</p> 	<p>Glycerol (fluid solution) ESR / > 330 Glycerol (rigid matrix) ESR / 200</p>	<p>N: 1.486 ³¹P: 3.578 2.0083, 2.0067, 2.0024 iso 2.0058 N: 0.48, 0.48, 3.44 iso 1.47 ³¹P: 3.34, 3.81, 3.73 iso 3.63</p>	98Cha1

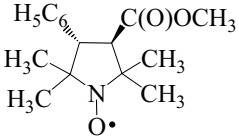
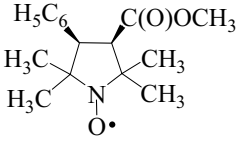
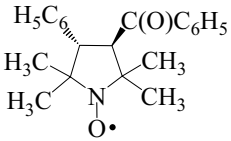
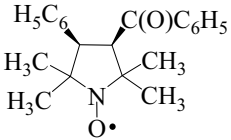
12.3.1.5.4 Other 2,2,4,5,5-pentasubstituted pyrrolidine-*N*-oxyls

<p>[C₂₁H₄₀NO₃]</p> 	<p>Synthesis described Oriented bilayers of DMPC: cholesterol (70:30 mol/mol) ESR / 283 to 303</p>	<p>N: 0.47, 0.47, 3.10 iso 1.346</p>	91Hei1
DMPC = Dimyristoylphosphatidylcholine.			
<p>[C₂₂H₄₂NO₃]</p> 	<p>Synthesis described Oriented bilayers of DMPC: cholesterol (70:30 mol/mol) ESR / 283 to 303</p>	<p>N: 0.47, 0.47, 3.10 iso 1.346</p>	91Hei1

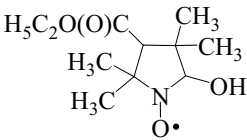
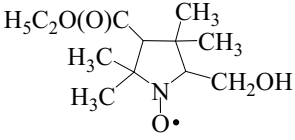
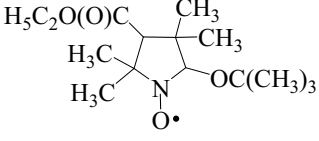
12.3.1.6 Hexasubstituted pyrrolidine-*N*-oxyls

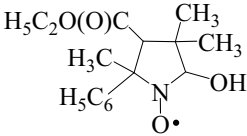
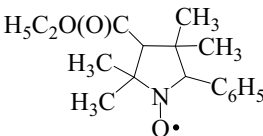
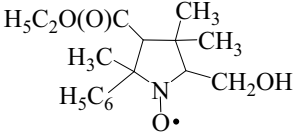
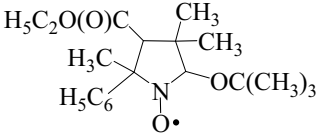
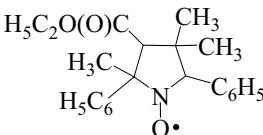
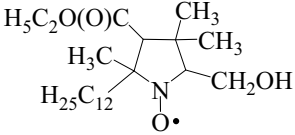
12.3.1.6.1 3,4-Disubstituted 2,2,5,5-tetramethylpyrrolidine-*N*-oxyls

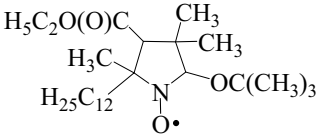
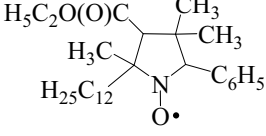
<p>[C₁₀H₁₆N₃O₃]</p> 	<p>Generation not described Toluene ESR</p>	<p>N: 1.388 2¹³C_α: 0.55 ¹³C_β: 0.88 ¹³C_β: 0.83 ¹³C_β: 0.45 ¹³C_β: 0.38</p>	93Roc1
		<p>N: 1.391 2¹³C_α: 0.52 ¹³C_β: 0.87 ¹³C_β: 0.82 ¹³C_β: 0.56 ¹³C_β: 0.40</p>	

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₆H₂₂NO₃]</p>  	Generation not described Toluene ESR	<p>N: 1.422 $2^{13}C_{\alpha}$: 0.60 $^{13}C_{\beta}$: 0.90 $^{13}C_{\beta}$: 0.87 $^{13}C_{\beta}$: 0.50 $^{13}C_{\beta}$: 0.45</p> <p>N: 1.445 $2^{13}C_{\alpha}$: 0.58 $^{13}C_{\beta}$: 0.95 $^{13}C_{\beta}$: 0.80 $^{13}C_{\beta}$: 0.68 $^{13}C_{\beta}$: 0.52</p>	93Roc1
<p>[C₂₁H₂₄NO₂]</p>  	Generation not described Toluene ESR	<p>N: 1.421 $2^{13}C_{\alpha}$: 0.58 $^{13}C_{\beta}$: 0.90 $^{13}C_{\beta}$: 0.85 $2^{13}C_{\beta}$: 0.45</p> <p>N: 1.445 $2^{13}C_{\alpha}$: 0.56 $^{13}C_{\beta}$: 0.97 $^{13}C_{\beta}$: 0.80 $^{13}C_{\beta}$: 0.65 $^{13}C_{\beta}$: 0.50</p>	93Roc1

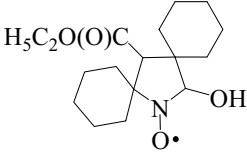
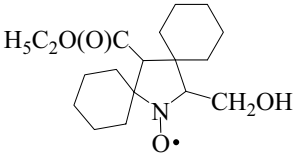
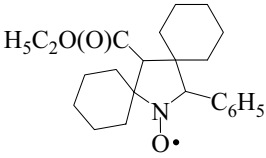
12.3.1.6.2 2,4,5-Trisubstituted 3,3,5-trimethylpyrrolidine-*N*-oxyls

<p>[C₁₁H₂₀NO₄]</p> 	Photolysis of H ₂ O ₂ and 4-(ethoxycarbonyl)-3,3,5,5-tetramethylpyrrolidine- <i>N</i> -oxide Phosphate buffer, pH 6.0 ESR / 298	N: 1.55 H_{β} : 1.55	88Deh1
<p>[C₁₂H₂₂NO₄]</p> 	Photolysis of methanol H ₂ O ₂ , and 4-(ethoxycarbonyl)-3,3,5,5-tetramethylpyrrolidine- <i>N</i> -oxide Phosphate buffer, pH 6.0 ESR / 298	N: 1.54 H_{β} : 1.80	88Deh1
<p>[C₁₅H₂₈NO₄]</p> 	Photolysis of BOOB and 4-(ethoxycarbonyl)-3,3,5,5-tetramethylpyrrolidine- <i>N</i> -oxide Benzene ESR / 298	N: 1.29 H_{β} : 0.40	88Deh1

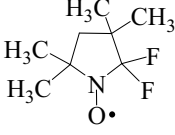
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₆H₂₂NO₄]</p> 	<p>Photolysis of H₂O₂ and 4-(ethoxycarbonyl)-5-phenyl-3,3,5-trimethylpyrrolidine-<i>N</i>-oxide Phosphate buffer, pH 6.0 ESR / 298</p>	<p>N: 1.44 H_β: 1.91</p>	88Deh1
<p>[C₁₇H₂₄NO₃]</p> 	<p>Photolysis of PATPM and 4-(ethoxycarbonyl)-3,3,5,5-tetramethylpyrrolidine-<i>N</i>-oxide Phosphate buffer, pH 6.0 ESR / 298</p>	<p>N: 1.40 H_β: 2.13</p>	88Deh1
PATPM = Phenylazotriphenylmethane.			
<p>[C₁₇H₂₄NO₄]</p> 	<p>Photolysis of methanol, H₂O₂ and 4-(ethoxycarbonyl)-5-phenyl-3,3,5-trimethylpyrrolidine-<i>N</i>-oxide Phosphate buffer, pH 6.0 ESR / 298</p>	<p>N: 1.50 H_β: 2.59</p>	88Deh1
<p>[C₂₀H₃₀NO₄]</p> 	<p>Photolysis of BOOB and 4-(ethoxycarbonyl)-5-phenyl-3,3,5-trimethylpyrrolidine-<i>N</i>-oxide Benzene ESR / 298</p>	<p>N: 1.30 H_β: 1.05</p>	88Deh1
<p>[C₂₂H₂₆NO₃]</p> 	<p>Photolysis of PATPM and 4-(ethoxycarbonyl)-5-phenyl-3,3,5-trimethylpyrrolidine-<i>N</i>-oxide Benzene ESR / 298</p>	<p>N: 1.32 H_β: 2.40</p>	88Deh1
PATPM = Phenylazotriphenylmethane.			
<p>[C₂₃H₄₄NO₄]</p> 	<p>Photolysis of H₂O₂ and 4-(ethoxycarbonyl)-5-dodecyl-3,3,5-trimethylpyrrolidine-<i>N</i>-oxide Methanol (60%)-water ESR / 298</p>	<p>N: 1.50 H_β: 2.20</p>	88Deh1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{26}H_{50}NO_4]$ 	Photolysis of BOOB and 4-(ethoxycarbonyl)-5-dodecyl-3,3,5-trimethylpyrroline- <i>N</i> -oxide Benzene ESR / 298	N: 1.33 H_β : 0.54	88Deh1
$[C_{28}H_{46}NO_3]$ 	Photolysis of PATPM and 4-(ethoxycarbonyl)-5-dodecyl-3,3,5-trimethylpyrroline- <i>N</i> -oxide Benzene ESR / 298	N: 1.40 H_β : 2.35	88Deh1

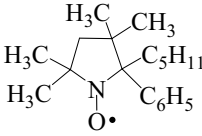
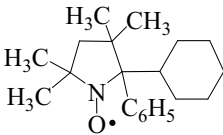
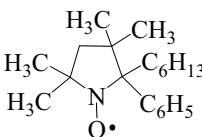
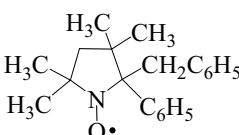
12.3.1.6.3 2,4-Disubstituted 3,5-di(spirocyclohexyl)pyrrolidine-*N*-oxyls

$[C_{17}H_{28}NO_4]$ 	Photolysis of H_2O_2 and 4-(ethoxycarbonyl)-3,5-di(spirocyclohexyl)pyrrolidine- <i>N</i> -oxide Phosphate buffer, pH 6.0 ESR / 298	N: 1.47 H_β : 1.47	88Deh1
$[C_{18}H_{30}NO_4]$ 	Photolysis of methanol, H_2O_2 and 4-(ethoxycarbonyl)-3,5-di(spirocyclohexyl)pyrrolidine- <i>N</i> -oxide Phosphate buffer, pH 6.0 ESR / 298	N: 1.450 H_β : 2.50	88Deh1
$[C_{23}H_{32}NO_3]$ 	Photolysis of PATPM and 4-(ethoxycarbonyl)-3,5-di(spirocyclohexyl)pyrrolidine- <i>N</i> -oxide Benzene ESR / 298	N: 1.43 H_β : 2.50	88Deh1

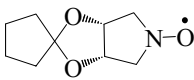
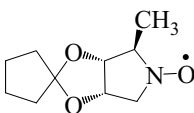
12.3.1.6.4 2,2-Disubstituted 3,3,5,5-tetramethylpyrrolidine-*N*-oxyls

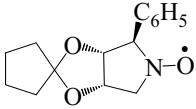
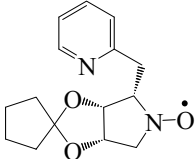
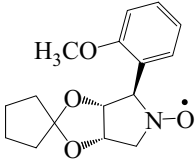
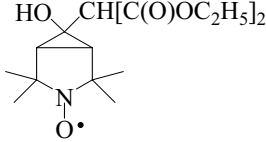
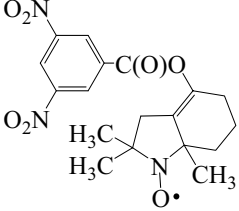
$[C_8H_{14}F_2NO]$ 	Reaction of XeF_2 with 3,3,5,5-tetramethyl-2-aldopyrrolidine- <i>N</i> -oxyl CH_2Cl_2 ESR / 298	2.0067 N: 1.238 2F: 2.241	89Gri1
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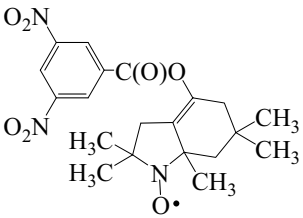
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{15}H_{22}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.466 N: 1.630	95Zha2
$[C_{16}H_{24}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.389 H_γ : 0.472 N: 1.558 H_γ : 0.525	95Zha2
$[C_{17}H_{24}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.397 H_γ : 0.459 N: 1.557 H_γ : 0.489	95Zha2
$[C_{17}H_{26}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.398 H_γ : 0.459 N: 1.560 H_γ : 0.512	95Zha2
$[C_{18}H_{28}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.393 H_γ : 0.459 N: 1.563 H_γ : 0.520	95Zha2
$[C_{18}H_{28}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.310 H_γ : 0.202 N: 1.492 H_γ : 0.247	95Zha2
$[C_{18}H_{28}NO]$ 	Synthesis described ESR / 298 Benzene	N: 1.363 H_γ : 0.347	95Zha2

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{19}H_{30}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.393 H_γ : 0.459 N: 1.560 H_γ : 0.520	95Zha2
$[C_{20}H_{30}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.315 H_γ : 0.200 N: 1.475 H_γ : 0.235	95Zha2
$[C_{20}H_{32}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.398 H_γ : 0.459 N: 1.568 H_γ : 0.511	95Zha2
$[C_{21}H_{26}NO]$ 	Synthesis described ESR / 298 Benzene Water	N: 1.344 H_γ : 0.318 N: 1.493 H_γ : 0.420	95Zha2

12.3.1.7 Fused-ring pyrrolidine-*N*-oxyls

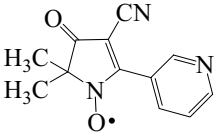
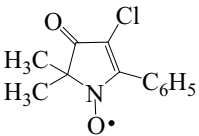
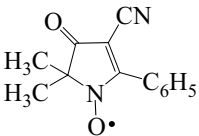
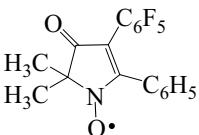
$[C_9H_{14}NO_3]$ 	Spontaneous oxidation of the <i>N</i> -hydroxypyrro- lidine in air Diglime ESR / 298 Substitution of a β -hy- drogen with deuterium Digline ESR / 348	2.0062 N: 1.48 $2H_\beta$: 2.25 $2H_\beta$: 1.53 $2H_\gamma$: 0.04 2.0051 N: 1.53 H_β : 2.24 H_β : 1.85 H_β : 1.15 D_β : 0.315 $2H_\gamma$: 0.05	95Tro1
$[C_{10}H_{16}NO_3]$ 	Spontaneous oxidation of the <i>N</i> -hydroxypyrro- lidine in air Diglime ESR / 348	2.0062 N: 1.48 H_β : 2.06 $2H_\beta$: 1.71 $2H_\gamma$: 0.06	95Tro1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₅H₁₈NO₃]</p> 	<p>Spontaneous oxidation of the <i>N</i>-hydroxypyrrolidine in air ESR CCl₄ / 348</p> <p>Diglime / 349</p> <p>Diglime / 363</p>	<p>2.0060 N: 1.39 H_β: 2.0 2H_β: 1.59</p> <p>2.0060 N: 1.42 H_β: 2.20 H_β: 2.10 H_β: 1.58</p> <p>2.0060 N: 1.41 H_β: 2.12 H_β: 1.55 H_β: 1.55</p>	95Tro1
<p>[C₁₅H₁₉N₂O₃]</p> 	<p>Spontaneous oxidation of the <i>N</i>-hydroxypyrrolidine in air Diglyme ESR / 398</p>	<p>2.0060 N: 1.50 H_β: 2.26 H_β: 2.10 H_β: 1.35</p>	95Tro1
<p>[C₁₆H₂₀NO₄]</p> 	<p>Spontaneous oxidation of the <i>N</i>-hydroxypyrrolidine in air Diglyme ESR / 373</p>	<p>2.0060 N: 1.40 H_β: 2.17 2H_β: 1.575</p>	95Tro1
<p>[C₁₆H₂₆NO₆]</p> 	<p>Synthesis described ESR / 298</p>	<p>N: 1.45</p>	95Sos1
<p>[C₁₈H₂₀N₃O₇]</p> 	<p>Synthesis described THF ESR / 298</p>	<p>2.0057 N: 1.42</p>	94Tam1, 94Tam2


Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{20}H_{24}N_3O_7]$ 	Synthesis described THF ESR / 298	2.0059 N: 1.46	94Tam1, 94Tam2, 95Tam1

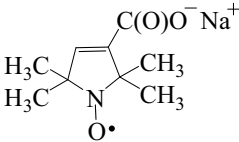
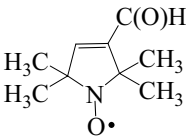
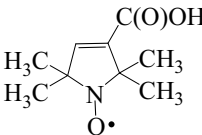
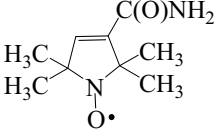
12.3.2 Pyrrolinyl-*N*-oxyls

12.3.2.1 2-Pyrrolinyl-*N*-oxyls

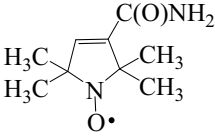
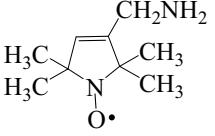
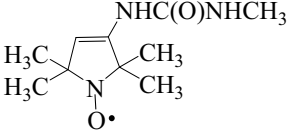
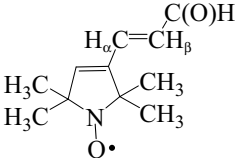
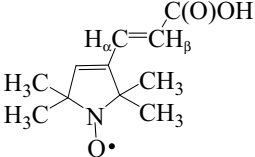
$[C_{12}H_{10}N_3O_2]$ 	Synthesis described Chloroform ESR / 298	N: 0.612	00Rez1
$[C_{12}H_{11}ClNO_2]$ 	Reaction of corresponding <i>N</i> -hydroxy compound with bases Aqueous methanol ESR / 298	N: 0.710	90Rez1
$[C_{13}H_{11}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 0.59	00Rez1
$[C_{18}H_{11}F_5NO_2]$ 	Reaction of corresponding <i>N</i> -hydroxypyrroline with MnO_2 Chloroform ESR / 298	N: 0.702	00Rez1

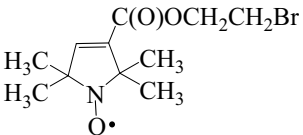
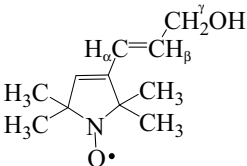
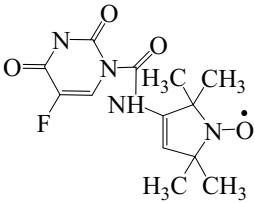
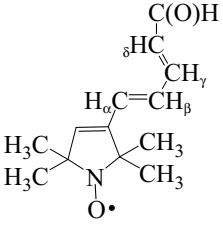
12.3.2.2 3-Pyrrolinyl-*N*-oxyls

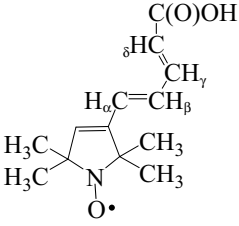
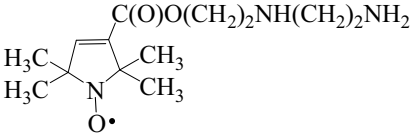
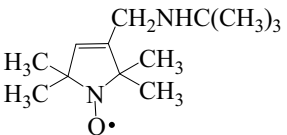
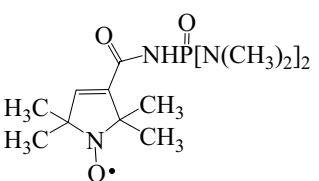
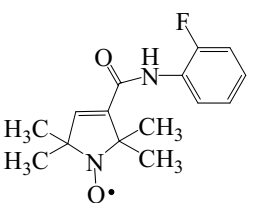
$[C_4H_6NO]$ 	Photolysis of corresponding <i>N</i> -hydroxypyrroline and BOOB <i>tert</i> -Butylbenzene ESR / 295	2.006 N: 1.47 $4H_\beta$: 1.80 $2H_\gamma$: ~ 0.03	92Cra1
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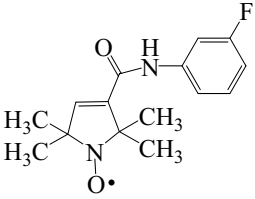
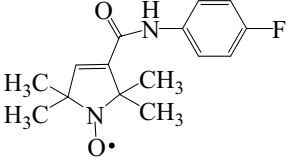
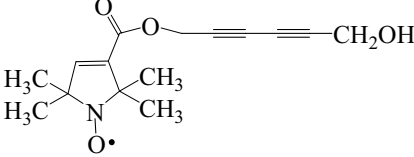
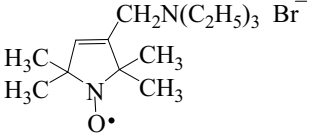
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_9H_{13}NO_3^- Na^+]$ 	Ethanol ESR / 298	N : 1.529 $12H_\gamma$: 0.022 H_γ : 0.043 $^{13}C_\beta$: 0.640*	87Ott1
The dependence of a_N from temperature (286 to 348 K) and from solvent polarity is reported for 15 solvents. * From axial methyl groups.			
$[C_9H_{14}NO_2]$ 	d_4 -Methanol ENDOR / 20	H_γ : *♥ \parallel 1.064, \pm 0.958 iso -0.284	93Mus1
* Values in MHz. ♥ From methyl groups.			
$[C_9H_{14}NO_3]$ 	d_4 -Methanol ENDOR – TRIPLE / 4.5 ENDOR – TRIPLE / 100 Methanol – fluid solution ENDOR – TRIPLE / 210	H_γ : *♦ \parallel 1.148, \pm 3.295 iso -1.814 H_γ : ♦ \parallel 1.216, \pm 3.206 iso -1.732 H_γ : ♦ iso -1.52 [D: 0.178] H_γ : ♥ iso -0.66 [D: 0.102]	95Mus1
* Values in MHz. ♦ Ring proton. ♥ From methyl groups.			
$[C_9H_{15}N_2O_2]$ 	Ethanol (water) ESR / 298 d_{16} - and d_{17} - ^{15}N -labelled nitroxide Water-glycerol ESR Ethanol ESR / 278	N : ‡ 1.501 $H_\gamma(CH_3)$: 0.0232 $H_\gamma(\text{ring})$: 0.0473 $^{13}C_\beta$: 0.619 N : 1.603 [^{15}N : 2.245] $12H_\gamma$: 0.195 [D: 0.0295] 2.0082, 2.0075, 2.0021 iso 2.00593 N : 0.50, 0.53, 3.47 iso 1.494	87Ott1, 87Ott2, 92Win1, 95Bri1 99Rob1 87Ott2
‡ The dependence of a_N from temperature (286 to 348 K) and from solvent polarity is reported for 15 solvents [87Ott1]. Partition between water, CCl_4 and Sephadex G microbead hydrogels reported [92Win1].			

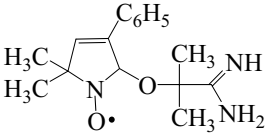
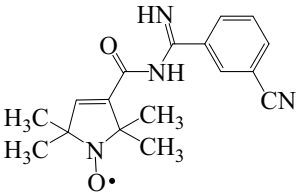
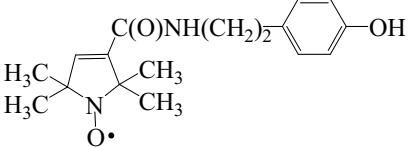
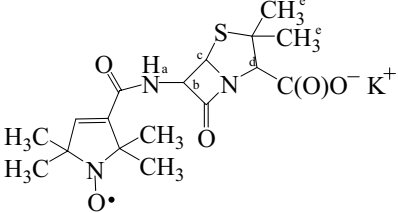
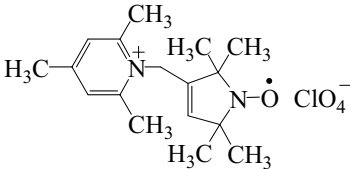
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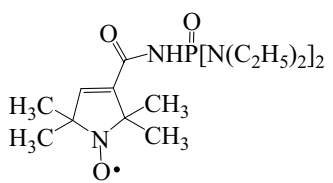
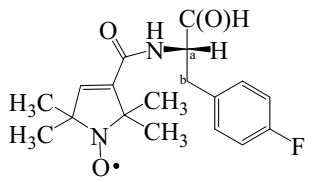
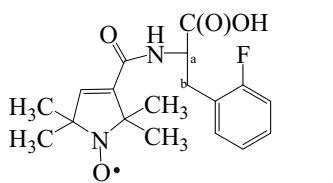
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₉H₁₅N₂O₂] (<i>continued</i>)</p> 	<p><i>d</i>₆-DMSO:chloroform:toluene (50:25:25 v/v) ENDOR – TRIPLE / 210</p> <p><i>n</i>-Propanol ESR – ENDOR / 298</p>	<p>H_γ: *•• 1.148, ± 3.291 iso –1.811 H(NH₂): 0.604, ± 0.427 iso –0.083 H(NH₂): 1.129, ± 0.580 iso –0.010</p> <p>2.0082, 2.0075, 2.0021 iso 2.0059₁ N: • 1.62, 1.96, 9.94 iso 4.506 H_γ: iso –1.33 [–1.56•]¹ H_γ: iso –0.64 [–1.12•]</p>	<p>91Mus1</p> <p>90Bru1</p>
* Values in MHz. • Ring proton. • <i>d</i> ₈ -Toluene (glass, 103 K).			
<p>[C₉H₁₇N₂O₂]</p> 	Synthesis described Benzene ESR / 298	2.0056 ₈ N: 1.44	88Dra1
<p>[C₁₀H₁₈N₃O₂]</p> 	Synthesis described Benzene ESR / 298	N: 1.43	93Sen2
<p>[C₁₁H₁₆NO₂]</p> 	Synthesis described <i>d</i> ₄ -Methanol ENDOR / 20	<p>H_α: •• 1.214, ± 0.809 iso –0.135 H_β: 1.394, ± 0.794 iso –0.065 H_{ald}: •• 0.515, ± 0.262 iso –0.003</p>	93Mus1
* Values in MHz. • Assignment based on deuterium substitution.			
<p>[C₁₁H₁₆NO₃]</p> 	Synthesis described <i>d</i> ₄ -Methanol ENDOR / 20	<p>H_α: •• 1.214, ± 0.809 iso –0.135 H_β: 1.394, ± 0.794 iso –0.065 H_{carb}: •• 0.31, ± 0.156 iso 0.000</p>	93Mus1
* Values in MHz. • Assignment based on deuterium substitution.			

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{17}BrNO_3]$ 	Synthesis described Benzene ESR / 298	2.0058 N: 1.40	96Dra1
$[C_{11}H_{18}NO_2]$ 	Synthesis described d_4 -Methanol ENDOR / 20	H_α : $\star \parallel 1.199, \pm 0.836$ iso -0.158 H_β : $\parallel 1.431, \pm 0.836$ iso -0.080 <i>Conformer I</i> H_γ : $\star \parallel 0.512, \pm 0.256$ iso -0.000 $H(OH)$: $\parallel 0.469, \pm 0.236$ iso 0.009 <i>Conformer II</i> H_γ : $\star \parallel 0.340, \pm 0.156$ iso -0.000 $H(OH)$: $\parallel 0.331, \pm 0.167$ iso -0.001	93Mus2
\star Values in MHz. \star Assignment based on deuterium substitution.			
$[C_{13}H_{16}FN_4O_4]$ 	Synthesis described Benzene ESR / 298	N: 1.44	89Sen1
$[C_{13}H_{18}NO_2]$ 	Synthesis described d_4 -Methanol ENDOR / 20	H_α : $\star \parallel 1.208, \pm 0.811$ iso -0.138 H_β : $\parallel 1.410, \pm 0.821$ iso -0.077 H_γ : $\parallel 0.519, \pm 0.230$ iso 0.020 H_δ : $\parallel 0.395, \pm 0.238$ iso -0.027 H_{ald} : $\parallel 0.215, \pm 0.112$ iso -0.003	93Mus1
\star Values in MHz.			

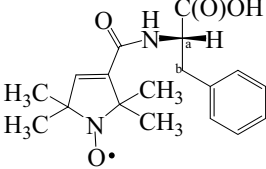
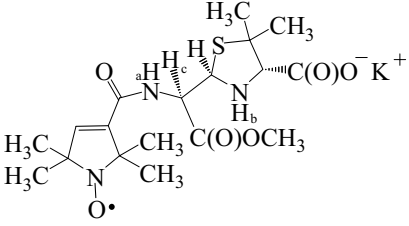
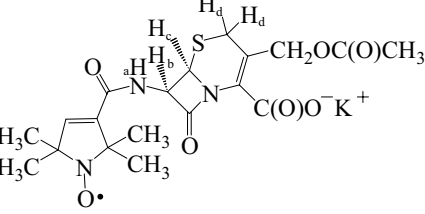
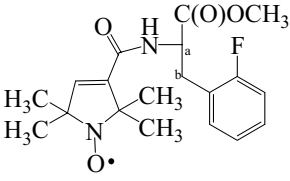
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₃H₁₈NO₃]</p> 	<p>Synthesis described <i>d</i>₄-Methanol ENDOR / 20</p>	<p>H_α: * 1.208, ± 0.811 iso -0.138 H_β: 1.410, ± 0.821 iso -0.077 H_γ: * 0.519, ± 0.230 iso 0.020 H_δ: 0.395, ± 0.238 iso -0.027 H_{car}: 0.142, ± 0.076 iso -0.003</p>	93Mus1
* Values in MHz. * Assignment based on deuterium substitution.			
<p>[C₁₃H₂₄N₃O₃]</p> 	<p>Synthesis described Water ESR / 298</p>	<p>2.0054 N: 1.578</p>	96Dra1
<p>[C₁₃H₂₅N₂O]</p> 	<p>Synthesis described Water ESR / 298</p>	<p>2.0058 N: 1.451</p>	88Dra1
<p>[C₁₃H₂₆N₄O₃P]</p> 	<p>Synthesis described ESR / 298</p>	<p>N: 1.41</p>	90Khu1
<p>[C₁₅H₁₈FN₂O₂]</p> 	<p><i>d</i>₄-Methanol ENDOR / 20</p>	<p><i>Conformer I</i> H_o: * 0.51, ± 0.27 iso -0.007 H_m: ± 0.12 H_p: ± 0.08 F: 0.50, ± 0.26 iso -0.010 <i>Conformer II</i> H_o: * 0.43, ± 0.22 iso -0.003 H_m: ± 0.10 H_p: ± 0.08 F: 0.40, ± 0.20 iso -0.002</p>	88Wel1
* Values in MHz.			

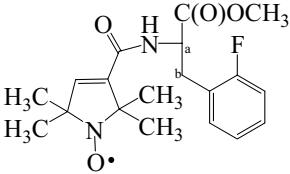
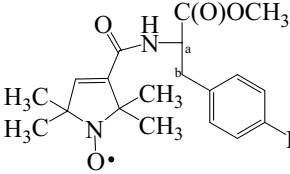
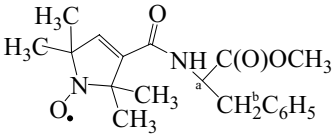
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{15}H_{18}FN_2O_2]$ 	d_4 -Methanol ENDOR / 20	<i>Conformer I</i> H_o : * 0.52, ± -0.27 iso -0.006 H_m : ± -0.12 H_p : ± -0.07 F : 0.18, ± -0.10 iso -0.004 <i>Conformer II</i> H_o : * 0.41, ± -0.22 iso -0.006 H_m : ± -0.09 H_p : ± -0.07 F : 0.17, ± -0.08 iso -0.001	88Wel1
* Values in MHz.			
$[C_{15}H_{18}FN_2O_2]$ 	d_4 -Methanol ENDOR / 20	H_o : * 0.51, ± -0.26 iso -0.006 H_o : * 0.42, ± -0.21 iso -0.002 H_m : ± -0.12 H_m : ± -0.10 F : 0.12, ± -0.06 iso 0.000	88Wel1
* Values in MHz.			
$[C_{15}H_{18}NO_4]$ 	Synthesis described Toluene ESR / 294 Solid state ESR / 294	2.011 N: 1.45 2.011 Single line, $\Delta H_{pp} \sim 1.5$	91Wil1, 91Wil2
$[C_{15}H_{30}N_2O^+Br^-]$ 	Synthesis described ESR / 298 Cyclohexane and Water/[EO(4)NP] 0.1 Water/[EO(4)NP] 0.6 Water/[EO(4)NP] 2.6 Water/[EO(4)NP] 6.9 Water	N: 1.41 N: 1.51♥ N: 1.55 N: 1.57 N: 1.59♣	92Cal1
[EO(4)NP] = Polyoxyethylene(4)nonylphenol. In all cases the spin probe is incorporated into micellar aggregates. ♥ Correlation time $\tau_c = 5.4 \times 10^{10}$ s. ♣ Correlation time $\tau_c = 0.5 \times 10^{10}$ s.			

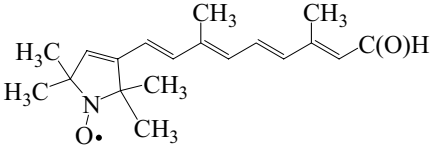
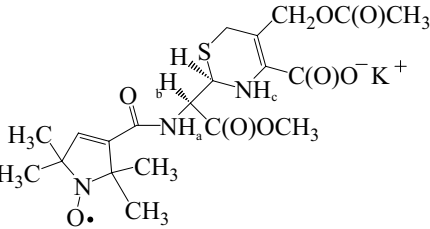
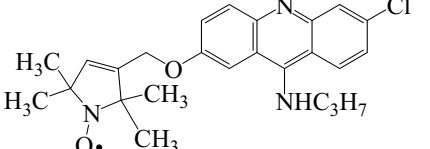
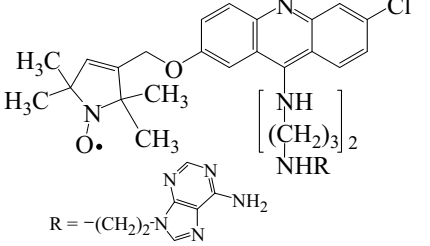
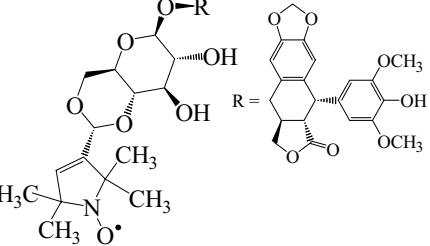
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₆H₂₂N₃O₂]</p> 	<p>Thermal decomposition of AAPH in the presence of DMPIO Buffer-DMSO (9:1) ESR</p> <p>AAPH = 2,2'-azobis(2-amidinopropane) hydrochloride. DMPIO = 2,2-dimethyl-4-phenyl-2<i>H</i>-imidazole-<i>N</i>-oxide.</p>	<p>N: 1.346 H_β: 1.253</p>	96Kra1
<p>[C₁₇H₁₉N₄O₂]</p> 	<p>Synthesis described <i>d</i>₄-Methanol ESR / 298</p>	<p>2.010 N: 1.53</p>	99Pap1
<p>[C₁₇H₂₃N₂O₃]</p> 	<p>Synthesis described Benzene ESR / 298</p>	<p>2.0059 N: 1.503</p>	96Dra1
<p>[C₁₇H₂₃N₃O₅S⁻K⁺]</p> 	<p>Synthesis described <i>d</i>₆-DMSO-<i>d</i>₄-Methanol ENDOR / 20</p> <p>* Values in MHz.</p>	<p>H_a: * 1.173, ± 0.580 iso 0.004 H_b: 0.535, ± 0.265 iso 0.002 H_c: ± 0.153 H_d: ± 0.121 H_e: ± 0.085</p>	95Mus2
<p>[C₁₇H₂₆N₂O⁺ClO₄⁻]</p> 	<p>Synthesis described Water ESR / 298</p>	<p>2.0056₅ N: 1.510</p>	88Dra1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{17}H_{34}N_4O_3P]$ 	Synthesis described ESR / 298	N: 1.41	90Khu1
$[C_{18}H_{22}FN_2O_3]$ 	Synthesis described D_2O - d_6 -DMSO (8%) ENDOR / 20	$H(NH):^* \parallel 1.193, \pm 0.577$ iso 0.013 $H_a: \parallel 0.542, \pm 0.262$ iso 0.006 $H_b: \pm 0.190$ $H_b: \pm 0.130$ $H_{al}: \parallel 0.402, \pm 0.227$ iso -0.017 $F: \parallel 0.245, \pm 0.135$ iso -0.008	98Jia98
	* Values in MHz.		
$[C_{18}H_{22}FN_2O_4]$ 	Synthesis described ENDOR / 20 d_4 -Methanol	$H(NH):^* \parallel 1.167, \pm 0.604$ iso -0.014 $H_a: \parallel 0.523, \pm 0.259$ iso 0.002 $H_b: \parallel 0.377, \pm 0.179$ iso 0.006 $H_b: \parallel 0.251, \pm 0.138$ iso -0.008 $F: \heartsuit \parallel 0.232, \pm 0.136$ iso -0.013 $F: \spadesuit \parallel 0.509, \pm 0.328$ iso -0.555	91Joe1
	d_6 -DMSO : $CDCl_3$: d_8 -toluene = 10:45:45 (v/v)	$H(NH):^* \parallel 1.190, \pm 0.619$ iso -0.016 $H_a: \parallel 0.528, \pm 0.251$ iso 0.009 $H_b: \parallel 0.370, \pm 0.177$ iso 0.005 $H_b: \parallel 0.282, \pm 0.130$ iso 0.007 $H_{car}: \parallel 0.254, \pm 0.138$ iso -0.007 $F: \spadesuit \parallel 0.215, \pm 0.113$ iso -0.004	
	* Values in MHz. \heartsuit More abundant and \spadesuit less abundant rotamer. \spadesuit Only one rotamer detected.		

Landolt-Börnstein
New Series II/26D

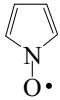
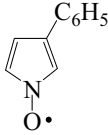
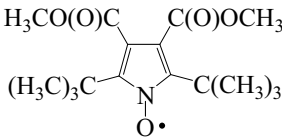
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>$[\text{C}_{18}\text{H}_{23}\text{N}_2\text{O}_4]$ (<i>continued</i>)</p> 	<p>Synthesis described d_6-DMSO : CDCl_3 : d_8-toluene = 10:45:45 (v/v) ENDOR / 20</p>	<p>H(NH): * \parallel 1.190, \pm 0.619 iso -0.016 H_a: \parallel 0.528, \pm 0.251 iso 0.009 H_b: \parallel 0.370, \pm 0.177 iso 0.005 H_b: \parallel 0.282, \pm 0.130 iso 0.007 H_{car}: \parallel 0.254, \pm 0.138 iso -0.007</p>	91Joel
* Values in MHz. Assignments following isotopic substitution.			
<p>$[\text{C}_{18}\text{H}_{27}\text{N}_3\text{O}_6\text{S}^-\text{K}^+]$</p> 	<p>Synthesis described ENDOR / 20</p>	<p>H(NH_a):* \parallel 1.170, \pm 0.584 iso 0.001 H(NH_b): \parallel 0.854, \pm 0.429 iso -0.001 H_c: \parallel 0.540, \pm 0.272 iso -0.001</p>	97Mus1
* Values in MHz.			
<p>$[\text{C}_{19}\text{H}_{23}\text{N}_3\text{O}_7\text{S}^-\text{K}^+]$</p> 	<p>Synthesis described d_6-DMSO : d_4-Methanol = 50:50 (v/v) ENDOR / 20</p>	<p>H(NH_a):* \parallel 1.167, \pm 0.581 iso 0.002 H_b: \parallel 0.537, \pm 0.268 iso 0.000 H_c: \pm 0.150 H_d: \parallel 0.166, \pm 0.085 iso -0.001</p>	97Mus1
* Values in MHz.			
<p>$[\text{C}_{19}\text{H}_{24}\text{FN}_2\text{O}_4]$</p> 	<p>Synthesis described d_4-Methanol ENDOR / 20</p>	<p>H(NH): * \parallel 1.177, \pm 0.594 iso -0.004 H_a: \parallel 0.534, \pm 0.262 iso 0.003 H_b: \parallel 0.380, \pm 0.181 iso 0.006 H_b: \parallel 0.242, \pm 0.138 iso -0.011 H(OCH₃): \parallel 0.210, \pm 0.116 iso -0.007 F: ♥ \parallel 0.240, \pm 0.133 iso -0.009 F: * \parallel 0.520, \pm 0.398 iso -0.092</p>	91Joel
<p>(<i>continued</i>)</p> <p>* Values in MHz. ♥ More abundant and * less abundant rotamer.</p>			

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₉H₂₄FN₂O₄] (<i>continued</i>)</p> 	<p>Synthesis described CDCl₃ : <i>d</i>₈-toluene = 50:50 (v/v) ENDOR / 20</p>	<p>H(NH): * 1.169, ± 0.593 iso −0.006 H_a: 0.524, ± 0.260 iso 0.001 H_b: 0.449, ± 0.258 iso −0.010 H_b: 0.290, ± 0.144 iso −0.001 H(OCH₃): 0.153, ± 0.094 iso −0.012 F: ♥ 0.189, ± 0.107 iso −0.008 F: ♦ 0.486, ± 0.336 iso −0.062</p>	91Joel
* Values in MHz. ♥ More abundant and ♦ less abundant rotamer.			
<p>[C₁₉H₂₄FN₂O₄]</p> 	<p>Synthesis described ENDOR / 20 <i>d</i>₄-Methanol</p>	<p>H(NH): * 1.177, ± 0.594 iso −0.004 H_a: 0.534, ± 0.262 iso 0.003 H_b: 0.380, ± 0.181 iso 0.006 H_b: 0.242, ± 0.138 iso −0.011 H(OCH₃): 0.210, ± 0.116 iso −0.007 F: 0.202, ± 0.100 iso 0.001</p>	91Joel
	<p>CDCl₃ : <i>d</i>₈-toluene = 50:50 (v/v)</p>	<p>H(NH): * 1.169, ± 0.593 iso −0.006 H_a: 0.524, ± 0.260 iso 0.001 H_b: 0.449, ± 0.258 iso −0.010 H_b: 0.290, ± 0.144 iso −0.001 H(OCH₃): 0.153, ± 0.094 iso −0.012 F: 0.164, ± 0.096 iso −0.009</p>	
* Values in MHz.			
<p>[C₁₉H₂₅N₂O₄]</p> 	<p>Synthesis described ENDOR / 20 <i>d</i>₄-Methanol or CDCl₃ : <i>d</i>₈-toluene = 50:50 (v/v)</p>	<p> and ⊥ values identical to those of the <i>ortho</i> and <i>para</i>-fluoro derivatives (see the two preceding entries).</p>	91Joel

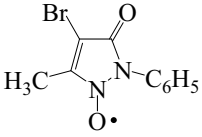
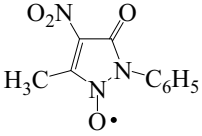
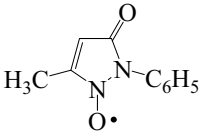
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{19}H_{26}NO_2]$ 	Synthesis described Benzene ESR / 298	2.0055 N: 1.46	95Gro1
$[C_{20}H_{27}N_3O_8S^-K^+]$ 	Synthesis described d_4 -Methanol or $CDCl_3$: d_6 -DMSO : d_8 -toluene = 25:50:25 (v/v) ENDOR / 20	$H(NH_a)$: $^* \parallel 1.162, \pm 0.582$ iso -0.001 H_b : $\parallel 0.541, \pm 0.274$ iso -0.002 $H(NH_c)$: $\parallel 0.855, \pm 0.429$ iso -0.001	97Mus1
* Values in MHz. Assignments following isotopic substitution.			
$[C_{25}H_{29}ClN_3O_2]$ 	Synthesis described Water, buffer ESR / 298	N: 1.60	98Bel1
$[C_{35}H_{44}ClN_{10}O_2]$ 	Synthesis described Water, buffer ESR / 298	N: 1.60	98Bel1, 99Ber1
$[C_{36}H_{42}NO_{14}]$ 	Synthesis described Chloroform ESR / 298	2.0057 N: 1.624	97Lu1

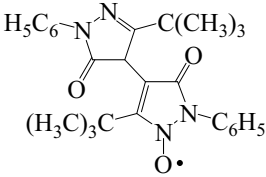
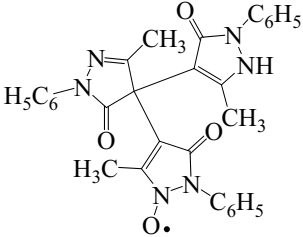
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
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12.3.3 Pyrrolyl- N -oxyls

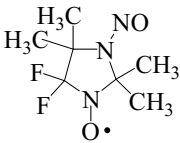
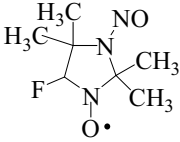
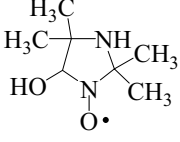
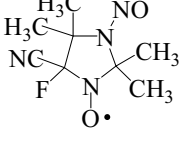
$[C_4H_4NO]$ 	Photolysis of BOOB and N -hydroxypyrrole <i>tert</i> -Butylbenzene ESR / 205	2.006 N: 0.42 2H(H3,4): 0.48 [D: 0.08] 2H(H2,5) \leq 0.02	92Cra1
INDO calculations reported.			
$[C_{10}H_8NO]$ 	Photolysis of BOOB and 3-phenyl- N -hydroxypyrrole <i>tert</i> -Butylbenzene ESR / 250	2.006 N: 0.43 H(H4): 0.37 [D: 0.06] 2H _m : 0.05 3H _{o,p} : 0.18	92Cra1
$[C_{16}H_{24}NO_5]$ 	Benzene ESR / 298	N: 0.43	96Rad1
The partially and fully deuteriated analogs exhibit the same nitrogen splitting. The linewidth is minimum for the perdeuteriated nitroxide $C_{16}D_{24}NO_5$.			

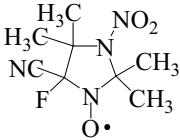
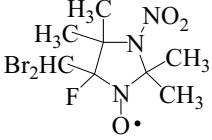
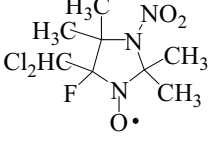
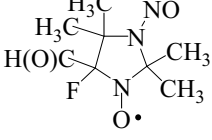
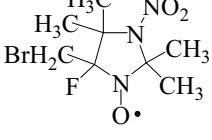
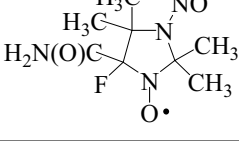
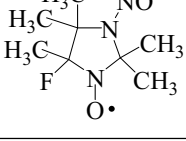
12.3.4 3-Pyrazolinyl-2-oxyls

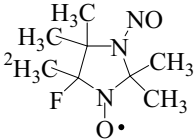
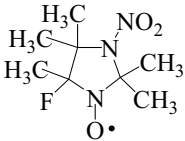
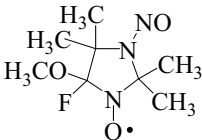
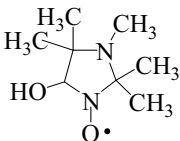
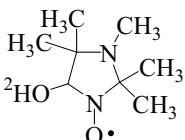
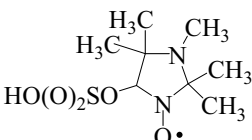
$[C_{10}H_8BrN_2O_2]$ 	Oxidation of corresponding pyrazolin-5-one with BHP and Co(acac) ₂ Benzene ESR / 293	2.0053 N: 0.735 N _α : 0.178 3H _γ : 0.089	93Ome1
$[C_{10}H_8N_3O_4]$ 	Oxidation of corresponding pyrazolin-5-one with BHP and Co(acac) ₂ Benzene ESR / 293	N: 0.727 N _α : 0.176 3H _γ : 0.080	93Ome1
$[C_{10}H_9N_2O_2]$ 	Oxidation of corresponding pyrazolin-5-one with BHP and Co(acac) ₂ Benzene ESR / 293	N: 0.738 N _α : 0.178 3H _γ : 0.088	93Ome1

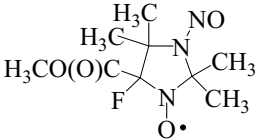
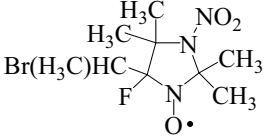
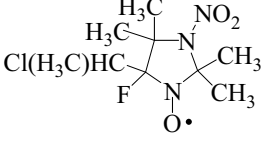
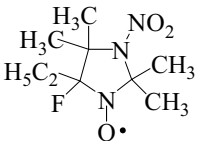
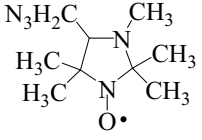
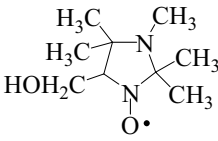
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{26}H_{29}N_4O_3]$ 	Oxidation of corresponding pyrazolin-5-one with BHP and Co(acac) ₂ Benzene ESR / 293	N: 0.761 N_α : 0.178	93Ome1
$[C_{30}H_{25}N_6O_4]$ 	Oxidation of corresponding pyrazolin-5-one with BHP and Co(acac) ₂ Benzene ESR / 293	N: 0.735 N_α : 0.174 $3H_\gamma$: 0.083	93Ome1

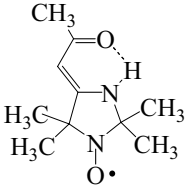
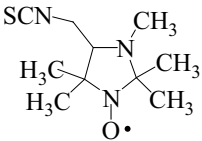
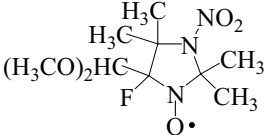
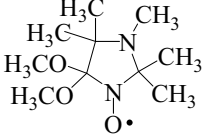
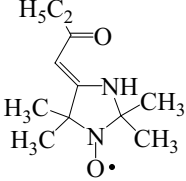
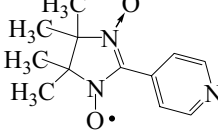
12.3.5 3-Imidazolidinyl-1-oxyls

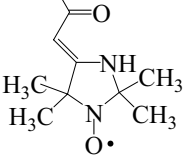
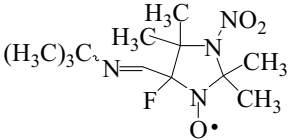
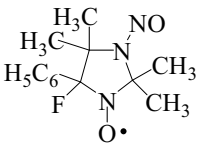
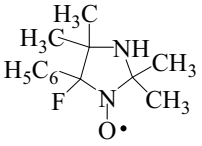
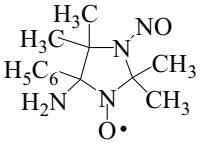
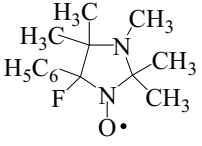
$[C_7H_{12}F_2N_3O_2]$ 	Reaction of the fluoro substituted imidazoline- <i>N</i> -oxide with XeF ₂ CH ₂ Cl ₂ ESR / 298	2.0065 N: 1.183 2F: 2.021	89Gri1
$[C_7H_{13}FN_3O_2]$ 	Reaction of corresponding imidazoline- <i>N</i> -oxide with XeF ₂ CH ₂ Cl ₂ ESR / 298	2.0065 N: 1.21 H_β : 0.468 F: 5.09	89Gri1 [D _β : n.r.]
$[C_7H_{15}N_2O_2]$ 	Photolysis of H ₂ O ₂ and appropriate 3-imidazoline- <i>N</i> -oxide Water ESR / 298	2.0056 N: 1.49 H_β : 1.75	96Dul1
$[C_8H_{12}FN_4O_2]$ 	Reaction of the cyano substituted imidazoline- <i>N</i> -oxide with XeF ₂ CH ₂ Cl ₂ ESR / 298	2.0073 N: 1.196 F: 4.758	89Gri1

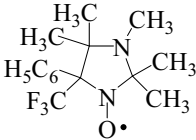
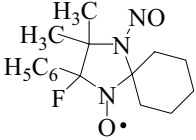
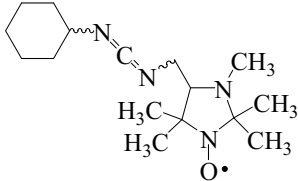
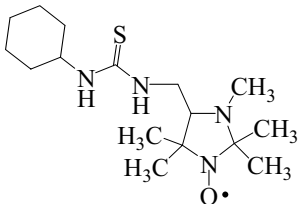
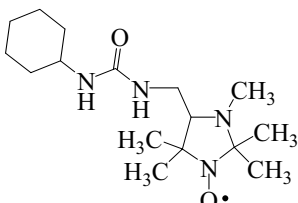
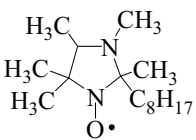
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_8H_{12}FN_4O_3]$ 	Reaction of the cyano substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0073 N: 1.210 F: 4.785	89Gri1
$[C_8H_{13}Br_2FN_3O_3]$ 	Reaction of the dibromo methyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0073 N: 1.224 F: 4.483	89Gri1
$[C_8H_{13}Cl_2FN_3O_3]$ 	Reaction of the dichloro methyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0070 N: 1.238 F: 4.551	89Gri1
$[C_8H_{13}FN_3O_3]$ 	Reaction of appropriate imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0071 N: 1.210 F: 4.565	89Gri1
$[C_8H_{14}BrFN_3O_3]$ 	Reaction of the bromo methyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0072 N: 1.238 F: 4.648	89Gri1
$[C_8H_{14}FN_4O_3]$ 	Reaction of the amino-carbonyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0070 N: 1.255 F: 4.414	89Gri1
$[C_8H_{15}FN_3O_2]$ 	Reaction of the methyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0070 N: 1.293 F: 5.033	89Gri1

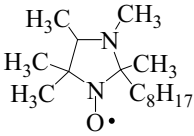
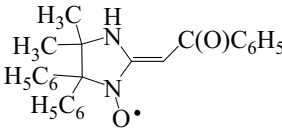
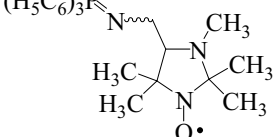
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_8\text{H}_{12}^2\text{H}_3\text{FN}_3\text{O}_2]$ 	Reaction of d_3 -methyl substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0072 N: 1.279 F: 4.950	89Gri1
$[\text{C}_8\text{H}_{15}\text{FN}_3\text{O}_3]$ 	Reaction of the methyl substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0072 N: 1.306 F: 5.046	89Gri1
$[\text{C}_8\text{H}_{15}\text{FN}_3\text{O}_3]$ 	Reaction of the methoxy substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0064 N: 1.293 F: 2.338	89Gri1
$[\text{C}_8\text{H}_{17}\text{N}_2\text{O}_2]$ 	Photolysis of H_2O_2 and the imidazoline- N -oxide ESR / 298 Water, pH 6.8 Water, pH 3.8	2.0056 N: 1.46 H_β : 1.72 2.0059* N: 1.38 H_β : 0.45	87Sku1, 96Dul1
* Protonated form.			
$[\text{C}_8\text{H}_{16}^2\text{HN}_2\text{O}_2]$ 	Photolysis of $^2\text{H}_2\text{O}_2$ and the imidazoline- N -oxide ESR / 298 Water, pH 6.8 Water, pH 3.8	2.0058 N: 1.57 H_β : 1.93 2.0059* N: 1.36 H_β : 0.45	87Sku1, 96Dul1
* Protonated form.			
$[\text{C}_8\text{H}_{17}\text{N}_2\text{O}_5\text{S}]$ 	Water, pH 6.8 ESR / 298	N: 1.33 H_β : 0.80	96Dul1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_9H_{15}FN_3O_4]$ 	Reaction of the methoxy carbonyl substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0068 N: 1.265 F: 3.988	89Gri1
$[C_9H_{16}BrFN_3O_3]$ 	Reaction of the bromo-ethyl substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0073 N: 1.265 F: 4.813	89Gri1
$[C_9H_{16}ClFN_3O_3]$ 	Reaction of the chloro-ethyl substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	<i>Diastereomer I</i> 2.0070 N: 1.265 F: 4.950 <i>Diastereomer II</i> 2.0069 N: 1.265 F: 4.703	89Gri1
$[C_9H_{17}FN_3O_3]$ 	Reaction of the ethyl substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0068 N: 1.293 F: 5.073	89Gri1
$[C_9H_{18}N_5O]$ 	Synthesis described Phosphate buffer, pH 7.0 ESR / 298	N: 1.58	96Sch1
$[C_9H_{19}N_2O_2]$ 	Photolysis of methanol, H_2O_2 and the appropriate imidazoline- N -oxide ESR / 298 Water, pH 6.8 Water, pH 3.8	2.0057 N: 1.52 H_β : 2.25 2.0057* N: 1.39 H_β : 1.39	87Sku1, 96Dul1
* Protonated form.			

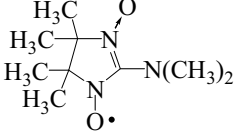
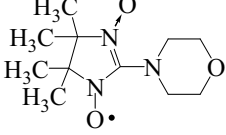
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{10}H_{17}N_2O_2]$ 	ACN ESR / 298	2.0061 N: 1.44 $2^{13}C_\alpha$: 0.59 $4^{13}C_\beta$: 0.59	91Yan1
Intramolecular hydrogen bonding.			
$[C_{10}H_{18}N_3OS]$ 	Synthesis described Phosphate buffer, pH 7.0 ESR / 298	N: 1.58	96Sch1
$[C_{10}H_{19}FN_3O_5]$ 	Reaction of the dimethoxymethyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0069 N: 1.293 F: 4.730	89Gri1
$[C_{10}H_{21}N_2O_3]$ 	Reaction of 2,2,4,4-tetramethyl-3-imidazoline with methanol in the presence of oxidants (PbO_2 , MnO_2) Methanol ESR / 298	2.0060 N: 1.31	87Shc1
$[C_{11}H_{19}N_2O_2]$ 	Toluene ESR / 298	2.0055 N: 1.43	90Ovc1
$[C_{12}H_{16}N_3O_2]$ 	Toluene Time resolved ESR – CIDEP / 298	2.0068 2N: 0.74	97Fuj1

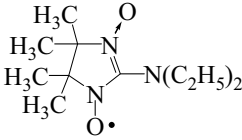
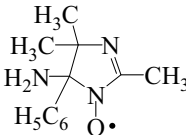
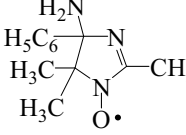
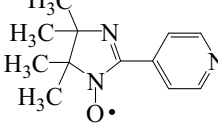
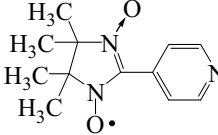
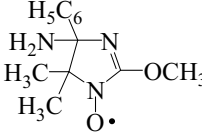
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{12}H_{21}N_2O_2]$ $(H_3C)_2HC$ 	Ethanol ESR / 298	2.0049 N: 1.45	88Lar1
$[C_{12}H_{22}FN_4O_3]$ 	Reaction of iminyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0068 N: 1.279 F: 4.771	89Gri1
$[C_{13}H_{17}FN_3O_2]$ 	Reaction of phenyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298 Toluene ESR / 130 to 140	2.0073 N: 1.293 F: 4.538 F: 2.17, 4.52, 6.832 ave 4.84	89Gri1, 89Gri2 90Dik1
$[C_{13}H_{18}FN_2O]$ 	Reaction of the phenyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298 * Protonated species.	2.0070 N: 1.265 F: 5.390 2.0076* N: 1.265 F: 4.664	89Gri1
$[C_{13}H_{19}N_4O_2]$ 	Reaction of the phenyl substituted imidazoline- <i>N</i> -oxide with XeF_2 and ammonia ESR / 298 Aqueous ethanol, pH 5.2 Aqueous ethanol, pH 0.4	N: 1.550 N_β : 0.144 N: 1.334 N_β : 0.337	89Gri2
$[C_{14}H_{20}FN_2O]$ 	Reaction of the phenyl substituted imidazoline- <i>N</i> -oxide with XeF_2 CH_2Cl_2 ESR / 298 * Protonated species.	2.0070 N: 1.265 F: 5.308 2.0069* N: 1.265 F: 4.840	89Gri1

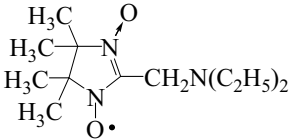
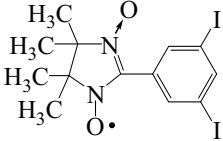
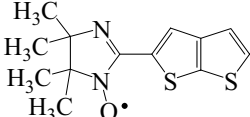
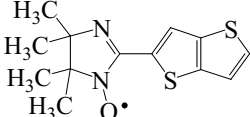
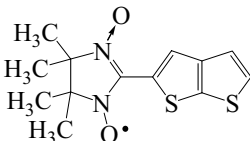
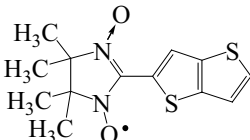
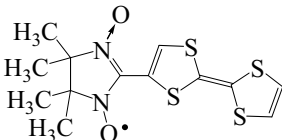
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{14}H_{20}FN_2O]$ 	Reaction of the phenyl substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0070 N: 1.265 F: 5.308 2.0069* N: 1.265 F: 4.840	89Gri1
* Protonated species.			
$[C_{16}H_{21}FN_3O_2]$ 	Reaction of the phenyl substituted imidazoline- N -oxide with XeF_2 CH_2Cl_2 ESR / 298	N: 1.293 F: 4.538	89Gri2
$[C_{16}H_{29}N_4O]$ 	Synthesis described Water, pH 7.0 ESR / 298	N: 1.58	96Sch1
$[C_{16}H_{31}N_4OS]$ 	Synthesis described Water, pH 7.0 ESR / 298	N: 1.58	96Sch1
$[C_{16}H_{31}N_4O_2]$ 	Synthesis described Water, pH 7.0 ESR / 298	N: 1.58	96Sch1
$[C_{16}H_{33}N_2O]$ 	ESR / 298 Adsorbed on SiO_2 Adsorbed on $\gamma-Al_2O_3$	2.0044 N: 3.53 2.0050 N: 3.15	92Mar1
(continued)			

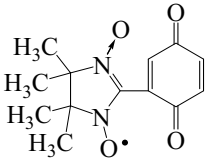
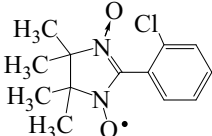
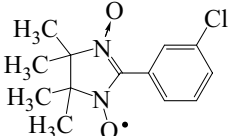
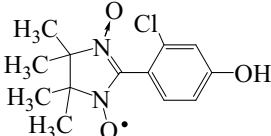
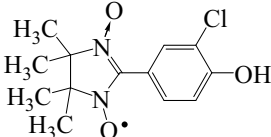
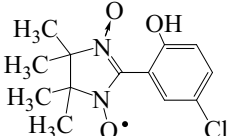
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₁₆ H ₃₃ N ₂ O] (<i>continued</i>) 	ESR / 298 Hexane Toluene Water – glycerol Toluene – AlCl ₃	2.0054 N: 1.39 2.0057 N: 1.44 2.0051 N: 1.52 2.0046 N: 1.90 ²⁷ Al: 0.66	92Mar1
[C ₂₅ H ₂₃ N ₂ O ₂] 	Synthesis described Ethanol ESR / 298	N: 0.90 N(NH): 0.44	96Rez1
[C ₂₇ H ₃₃ N ₃ OP] 	Synthesis described Water, pH 7.0 ESR / 298	N: 1.58	96Sch1

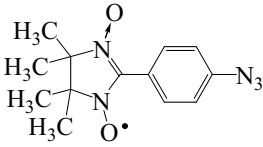
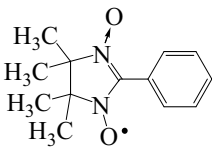
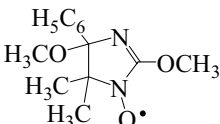
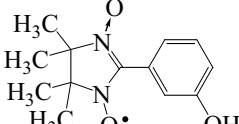
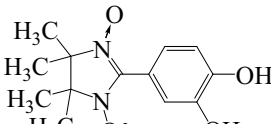
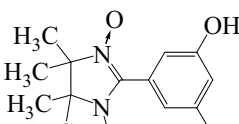
12.3.6 2-ImidazolinyI-*N*-oxyls and 2-imidazolinyI-*N*-oxyls 3-oxide

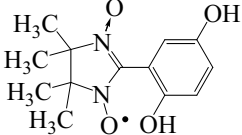
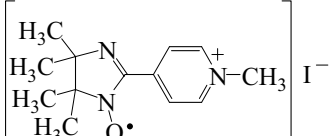
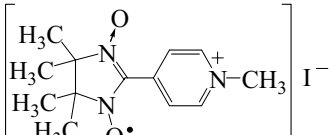
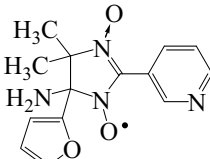
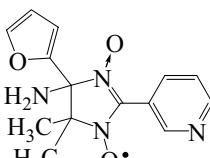
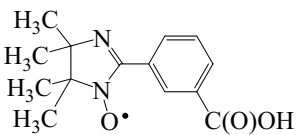
[C ₉ H ₁₈ N ₃ O ₂] 	Synthesis described THF matrix ESR / 30	2.0105, 2.0062, 2.0016 ave 2.0061 2N: 1.88(<i>A</i> ₂)	00Sak1
Oxidation of the nitroxide affords the diradical cation with zfs parameters (THF, 8 K) $ D = 0.0276 \text{ cm}^{-1}$, $ E = 0.0016 \text{ cm}^{-1}$, and $g_{\text{ave}} 2.0080 (2.0097, 2.0077, 2.0067)$.			
[C ₁₁ H ₂₀ N ₃ O ₃] 	Synthesis described THF matrix ESR / 30	2.0102, 2.0069, 2.0011 ave 2.0060 ₇ 2N: 1.84(<i>A</i> ₂)	00Sak1, 96Sak1
Oxidation of the nitroxide affords the diradical cation with zfs parameters (THF, 8 K) $ D = 0.0272 \text{ cm}^{-1}$, $ E = 0.0018 \text{ cm}^{-1}$, and $g_{\text{ave}} 2.0080 (2.0087, 2.0067, 2.0087)$.			

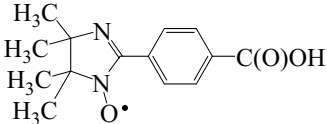
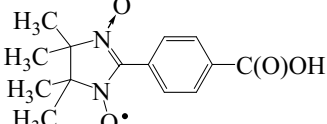
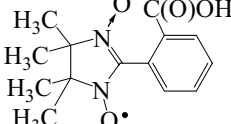
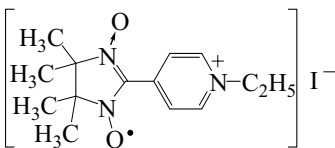
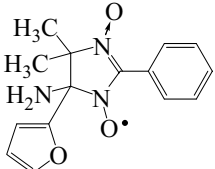
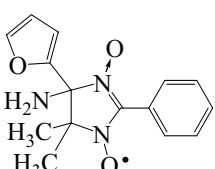
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{22}N_3O_2]$ 	Synthesis described THF matrix ESR / 30	2.0105, 2.0069, 2.0012 ave 2.0061 2N: 1.87(A_z)	00Sak1, 96Sak1
Oxidation of the nitroxide affords the diradical cation with zfs parameters (THF, 8 K) $ D = 0.0273 \text{ cm}^{-1}$, $ E = 0.0017 \text{ cm}^{-1}$, and $g_{\text{ave}} 2.0074$ (2.0069, 2.0080, 2.0073).			
$[C_{12}H_{16}N_3O]$ 	Reaction of appropriate imidazole N -oxide with NH_3 and PbO_2 Chloroform ESR / 298	2.0062 N: 0.895 N_β : 0.412	89Gri3
$[C_{12}H_{16}N_3O]$ 	Reaction of appropriate imidazole N -oxide with NH_3 and PbO_2 Chloroform ESR / 298	2.0061 N: 0.886 N_β : 0.432	89Gri3
$[C_{12}H_{16}N_3O]$ 	Synthesis described Heptane ESR / 298 ENDOR / 188	N: 0.869 N_β : 0.430 $H(CH_3)$: \uparrow 0.020	93Sug1
\uparrow ENDOR.			
$[C_{12}H_{16}N_3O_2]$ 	n -Butylphthalate ESR / 105 ENDOR – TRIPLE / 105	2.0021, 2.0133, 2.0063 iso 2.0072 ₃ N: \uparrow 51.5, 1.4, 9.8 iso 20.9 H_o : \uparrow 6.5, -0.75, -1.7 iso 1.35	90Ott1
\uparrow Values in MHz. \uparrow ENDOR.			
$[C_{12}H_{16}N_3O_2]$ 	Toluene (glass) ESR / 130 to 140	2.0096 ₈ , 2.0058 ₉ , 2.0024 ₂ ave 2.0059 ₈ N: 2.23 (A_z) N_β : 0.80 (A_z)	90Dik1

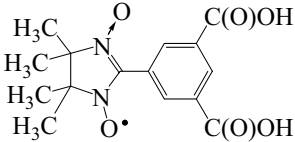
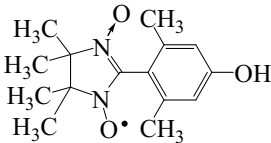
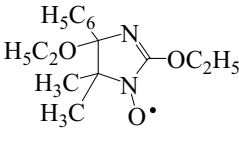
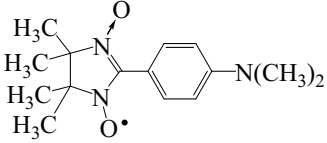
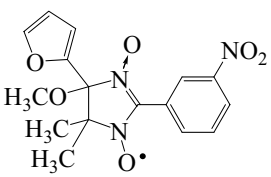
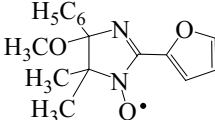
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{12}H_{24}N_3O_2]$ 	CH ₂ Cl ₂ ESR / 298	2N(1,3): 0.745 N _γ : 0.084 2H _γ : 0.150 12H(CH ₃): 0.0205	96Ulr1
$[C_{13}H_{15}I_2N_2O_2]$ 	Synthesis described Benzene ESR / 298	2.0067 2N: 0.747	96Miu1
$[C_{13}H_{15}N_2OS_2]$ 	Synthesis described Toluene ESR / 298	2.0060 N: 0.89 N _β : 0.45 ³³ S: 0.15	95Aki1, 96Aki1
$[C_{13}H_{15}N_2OS_2]$ 	Synthesis described Toluene ESR / 298	2.0060 N: 0.89 N _β : 0.45 ³³ S: 0.15	95Aki1
$[C_{13}H_{15}N_2O_2S_2]$ 	Synthesis described Hexane ESR / 298	2.0070 2N: 0.73	95Aki1, 96Aki1
$[C_{13}H_{15}N_2O_2S_2]$ 	Synthesis described Toluene ESR / 298	2.0067 2N: 0.70	95Aki1
$[C_{13}H_{15}N_2O_2S_4]$ 	Synthesis described Benzene ESR / 298	2.0063 2N: 0.757 H _δ : 0.060	93Kum1, 94Kum1
Oxidation of the nitroxide leads to a diradical cation with zfs parameters (MTHF, 100 K) $ D = 0.0214 \text{ cm}^{-1}$, $ E = 0.0022 \text{ cm}^{-1}$, and $g_{\text{ave}} 2.0078$ (2.0111, 2.0094, 2.0031).			

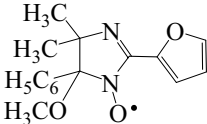
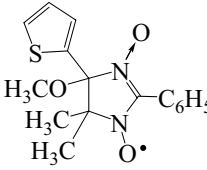
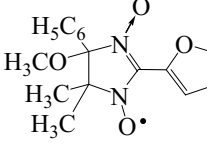
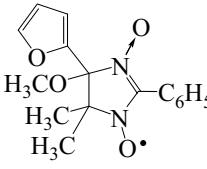
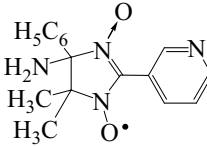
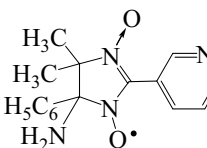
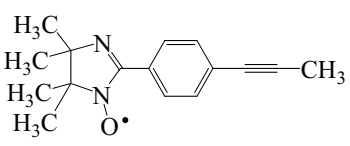
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{15}N_2O_4]$ 	Synthesis described Benzene ESR / 298	2.0072 2N: 0.722	94Kum1
Reduction of the nitroxide leads to a diradical anion with zfs parameters (DMF, 100 K) $ D = 0.0157 \text{ cm}^{-1}$, $ E = 0.0011 \text{ cm}^{-1}$, and $g_{\text{ave}} 2.0056$ (2.0068, 2.0045, 2.0055).			
$[C_{13}H_{16}ClN_2O_2]$ 	Synthesis described Toluene ESR / 298	2N: 0.726 $12H_{\gamma}$: 0.020 H_m : 0.012 H_m : 0.015 H_o : 0.024	97Jür1
$[C_{13}H_{16}ClN_2O_2]$ 	Synthesis described Toluene ESR / 298	2N: 0.740 $12H_{\gamma}$: 0.019 H_m : 0.021 $2H_o$: 0.052 H_p : 0.043	97Jür1
$[C_{13}H_{16}ClN_2O_3]$ 	Synthesis described Toluene ESR / 298	2N: 0.765 $12H_{\gamma}$: 0.018 $2H_m$: 0.016 H_o : 0.023	97Jür1
$[C_{13}H_{16}ClN_2O_3]$ 	Synthesis described Toluene ESR / 298	2N: 0.750 $12H_{\gamma}$: 0.021 H_m : 0.017 H_o : 0.050 H_o : 0.054	97Jür1
$[C_{13}H_{16}ClN_2O_3]$ 	Synthesis described Toluene ESR / 298	N: 0.740 N: 0.781 $12H_{\gamma}$: 0.020 H_m : 0.025 H_o : 0.033 H_p : 0.030	97Jür1

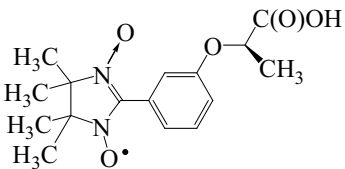
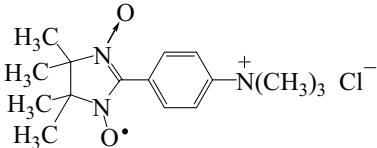
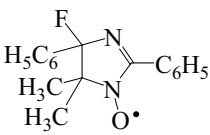
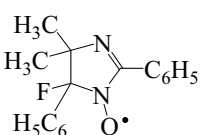
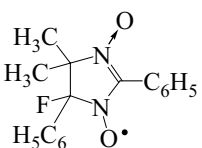
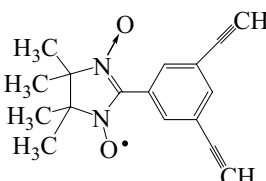
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₃H₁₆N₅O₂]</p> 	<p>Synthesis described Benzene ESR / 298</p> <p>Photolysis of nitroxide in toluene glass ESR / 77</p>	<p>2N: 0.794</p> <p>iso 2.003 $D = 0.277 \text{ cm}^{-1}$ $E = 0.0002 \text{ cm}^{-1}$</p>	98Lah1
<p>[C₁₃H₁₇N₂O₂]</p> 	<p>Paraffin ENDOR – TRIPLE / 297</p>	<p>N: 20.405 H_γ: -0.576 H_m: -0.82 H_o: 1.454 H_p: 1.310</p>	95Tak1
* Values in MHz. Assignment based on deuterium substitution. INDO calculations also reported.			
<p>[C₁₃H₁₇N₂O₃]</p> 	<p>Toluene (glass) ESR / 130 to 140</p>	<p>2.0102₆, 2.0059₉, 2.0022₅ ave 2.0061₇ N: 2.24 (<i>A_z</i>) N_β: 0.80 (<i>A_z</i>)</p>	90Dik1
<p>[C₁₃H₁₇N₂O₃]</p> 	<p>Synthesis described Solution. Solvent not specified ESR / 298</p>	<p>2N: 0.7445 12H_γ: 0.0210 H_m: 0.0187 H_o: 0.0499 H_o: 0.0519 H_p: 0.0421</p>	95Cir1
<p>[C₁₃H₁₇N₂O₄]</p> 	<p>Synthesis described CCl₄ ESR / 298</p>	<p>2.0063 2N: 0.7527 12H_γ: 0.0210 H_m: 0.0172 H_o: 0.0479 H_o: 0.0550</p>	95Cir1, 95Cir2, 95Cir3
<p>[C₁₃H₁₇N₂O₄]</p> 	<p>Synthesis described CCl₄ ESR / 298</p>	<p>2.0063 2N: 0.7645 12H_γ: 0.0205 2H_o: 0.0469 H_p: 0.0392</p>	95Cir1, 97Mat2

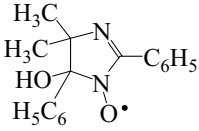
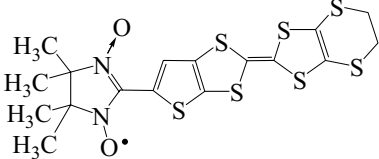
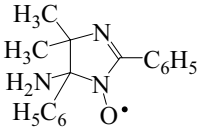
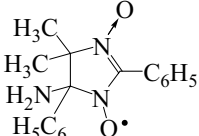
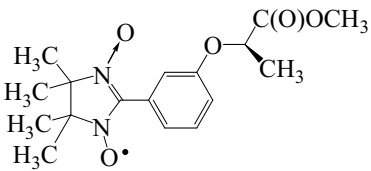
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{17}N_2O_4]$ 	Synthesis described CCl_4 ESR / 298	2.0061 2N: 0.756	97Mat2
$[C_{13}H_{19}N_3O^{+}I^{-}]$ 	Synthesis described Methanol ESR – ENDOR / 223	N: 0.865 N_β : 0.468 $12H_\gamma$: 0.018	93Sug2
$[C_{13}H_{19}N_3O_2^{+}I^{-}]$ 	Synthesis described Powder ESR / 298	2.007	91Awa1
$[C_{14}H_{15}N_4O_3]$ 	Oxidation of appropriate 1-hydroxyimidazoline 3-oxide with PbO_2 in saturated ethanolic ammonia Chloroform ESR / 298	2.0067 2N: 0.758	89Gri2, 89Gri3
$[C_{14}H_{15}N_4O_3]$ 	Toluene (glass) ESR / 130 to 140	2.01063, 2.00659, 2.00224 ave 2.00648 2N: 1.79 (A_z)	90Dik1
$[C_{14}H_{17}N_2O_3]$ 	Synthesis described CH_2Cl_2 ESR / 298 Single crystal ESR / 298	2.0060 ₀ N: 0.920 N_β : 0.428 2.0097 ₈ , 2.0054 ₄ , 2.0046 ₅ ave 2.0066 ₂	99Str1

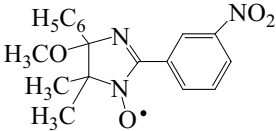
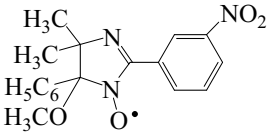
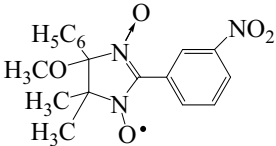
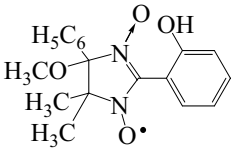
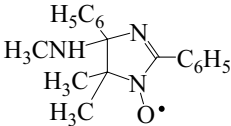
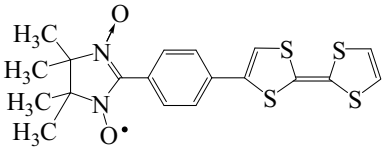
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{14}H_{17}N_2O_3]$ 	Synthesis described CH_2Cl_2 ESR / 298 Single crystal ESR / 298	2.0060_0 $N: 0.920$ $N_\beta: 0.428$ $2.0087_8, 2.0075_3, 2.00435_2$ ave 2.0068_8	99Str1
$[C_{14}H_{17}N_2O_4]$ 	Synthesis described Chloroform ESR / 298	$2N: 0.759$	94Bät1
$[C_{14}H_{17}N_2O_4]$ 	Synthesis described CH_2Cl_2 ESR / 298 Single crystal ESR / 298	2.0065_6 $2N: 0.759$ $2.0092_0, 2.0082_8, 2.0028_2$ ave 2.0067_9	99Str1
Identical spectra observed for the <i>meta</i> and <i>para</i> -hydroxymethyl analogs [00End1].			
$[C_{14}H_{21}N_3O_2^+I^-]$ 	Synthesis described Single crystal ESR / 298	$2.0048, 2.0062, 2.0084$ ave 2.00647	91Awa1
$[C_{15}H_{16}N_3O_3]$ 	Oxidation of appropriate 1-hydroxyimidazoline 3-oxide with PbO_2 in saturated ethanolic ammonia Chloroform ESR / 298	2.0067 $2N: 0.758$	89Gri2, 89Gri3
$[C_{15}H_{16}N_3O_3]$ 	Toluene (glass) ESR / 130 to 140	$2.01061, 2.00660, 2.00217$ ave 2.00646 $2N: 1.80 (A_z)$	90Dik1

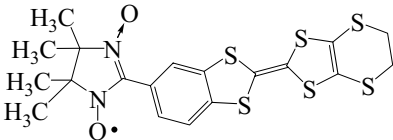
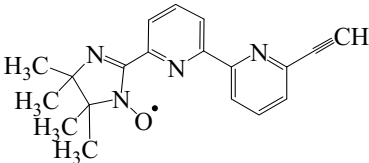
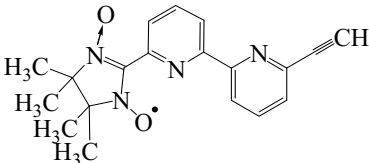
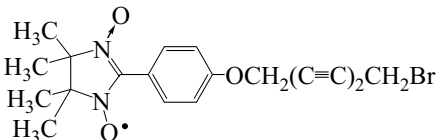
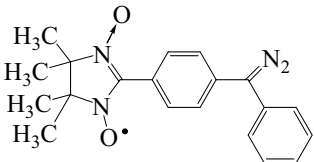
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{15}H_{17}N_2O_6]$ 	Synthesis described THF ESR / 298	2.0066 2N: 0.751	99Fel1
$[C_{15}H_{21}N_2O_3]$ 	Synthesis described CH_2Cl_2 ESR / 298	2.0067 ₅ 2N: 0.742	96Web1
$[C_{15}H_{21}N_2O_3]$ 	Toluene (glass) ESR / 130 to 140	2.01043, 2.00597, 2.00213 ave 2.00617 N: 2.30 (A_z) N_β : 0.83(A_z)	90Dik1
$[C_{15}H_{22}N_3O_2]$ 	THF ESR / 30 Synthesis described Benzene ESR / 298	2.0117, 2.0055, 2.0013 ave 2.00617 2N: 1.81 (A_z) 2.0061 2N: 0.77	96Kum1, 00Sak1 96Kum1
Oxidation of the nitroxide leads to a diradical cation with zfs parameters (THF, 8 K) $ D = 0.0272\text{cm}^{-1}$, $ E = 0.0018\text{cm}^{-1}$, and $g_{\text{ave}} 2.0077$ (2.0075, 2.0088, 2.0081).			
$[C_{16}H_{16}N_3O_6]$ 	Toluene (glass) ESR / 130 to 140	2.01104, 2.00667, 2.00214 ave 2.00662 2N: 1.76 (A_z)	90Dik1
$[C_{16}H_{17}N_2O_3]$ 	Toluene (glass) ESR / 130 to 140	2.01101, 2.00625, 2.00222 ave 2.00649 2N: 1.76 (A_z)	90Dik1

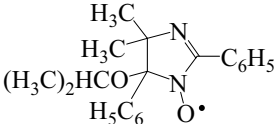
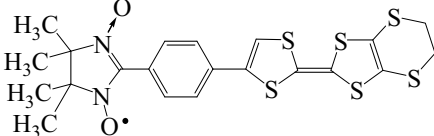
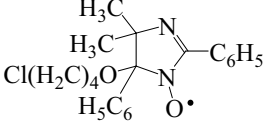
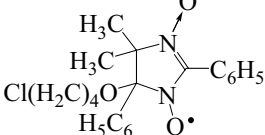
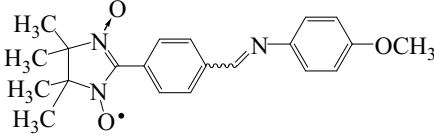
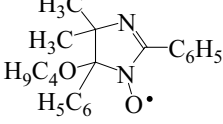
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₁₆ H ₁₇ N ₂ O ₃] 	Toluene (glass) ESR / 130 to 140	2.00953, 2.00601, 2.00227 ave 2.0059 ₄ N: 2.19 (<i>A_z</i>) N _β : 1.13 (<i>A_z</i>)	90Dik1
[C ₁₆ H ₁₇ N ₂ O ₃ S] 	Toluene (glass) ESR / 130 to 140	2.01102, 2.00661, 2.00217 ave 2.0066 2N: 1.77 (<i>A_z</i>)	90Dik1
[C ₁₆ H ₁₇ N ₂ O ₄] 	Toluene (glass) ESR / 130 to 140	2.01104, 2.00665, 2.00211 ave 2.0066 2N: 1.72 (<i>A_z</i>)	90Dik1
[C ₁₆ H ₁₇ N ₂ O ₄] 	Toluene (glass) ESR / 130 to 140	2.01102, 2.00625, 2.00222 ave 2.00649 2N: 1.76 (<i>A_z</i>)	90Dik1
[C ₁₆ H ₁₇ N ₄ O ₂] 	Toluene (glass) ESR / 130 to 140	2.01086, 2.00674, 2.00223 ave 2.00661 2N: 1.79 (<i>A_z</i>)	90Dik1
[C ₁₆ H ₁₇ N ₄ O ₂] 	Oxidation of appropriate 1-hydroxyimidazoline 3-oxide with PbO ₂ in saturated ethanolic ammonia Chloroform ESR / 298	2.0067 2N: 0.754	89Gri2, 89Gri3
[C ₁₆ H ₁₉ N ₂ O] 	CH ₂ Cl ₂ ESR / 293	N: 0.910 N _β : 0.422	99Cat1

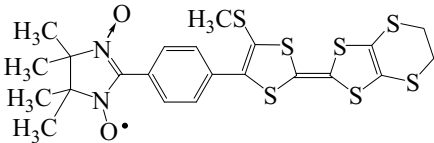
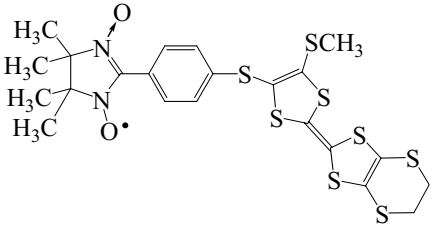
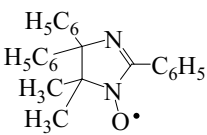
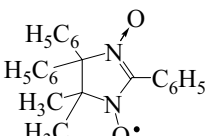
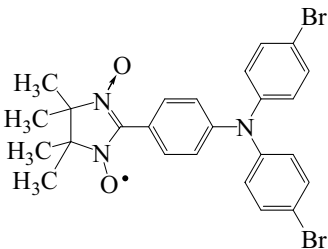
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₆H₂₁N₂O₅]</p> 	<p>Synthesis described CH₂Cl₂ ESR / 298</p>	<p>2.0064 2N: 0.757 H_m: 0.0189 H_o: 0.0448 H_o: 0.0468 H_p: 0.0392 $12H_\gamma$: 0.0208</p>	00Min1
Identical spectra observed for the racemic mixture.			
<p>[C₁₆H₂₅N₃O₂⁺Cl⁻]</p> 	<p>Synthesis described Cardioplegic solution, pH 7.6 ESR / 298</p>	2N: 0.82	95Kon1
<p>[C₁₇H₁₆FN₂O]</p> 	<p>Reaction of the appropriate imidazole 1-oxide with XeF₂ CH₂Cl₂ ESR / 298</p>	<p>2.0062 N: 0.825 N_β: 0.413 F: 1.650</p>	89Gri1, 89Gri3
<p>[C₁₇H₁₆FN₂O]</p> 	<p>Reaction of the appropriate imidazole 1-oxide with XeF₂ CH₂Cl₂ ESR / 298</p>	<p>2.0067 N: 0.798 N_β: 0.399 F: 3.245</p>	89Gri1
<p>[C₁₇H₁₆FN₂O₂]</p> 	<p>Reaction of the appropriate imidazole 1,3-dioxide with XeF₂ CH₂Cl₂ ESR / 298</p>	<p>2.0073 2N: 0.729 F: 2.214</p>	89Gri1
<p>[C₁₇H₁₇N₂O₂]</p> 	<p>Synthesis described CH₂Cl₂ ESR / 298</p>	<p>2.0066 2N: 0.753</p>	93Miu1

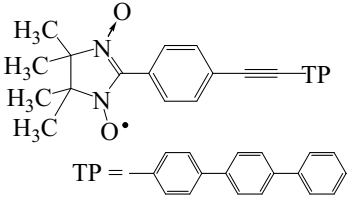
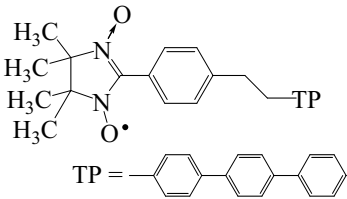
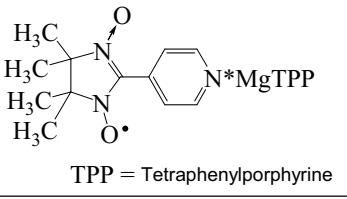
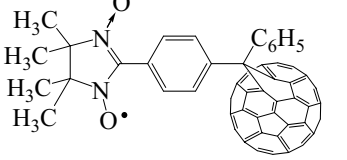
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{17}H_{17}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 0.862 N_β : 0.403	97Rez1
$[C_{17}H_{17}N_2O_2S_7]$ 	Synthesis described Benzene ESR / 298	2.0096 2N: 0.75	99Ish1
$[C_{17}H_{18}N_3O]$ 	Synthesis described Chloroform ESR / 298	2.0062 N: 0.895 N_β : 0.412	89Gri3
$[C_{17}H_{18}N_3O_2]$ 	Synthesis described Chloroform ESR / 298	2.0067 2N: 0.754	89Gri2, 89Gri3
$[C_{17}H_{23}N_2O_5]$ 	Synthesis described CH_2Cl_2 ESR / 298 Synthesis described CH_2Cl_2 ESR / 298	2.0066 2N: 0.755 H_m : 0.0193 H_o : 0.0431 H_o : 0.0442 H_p : 0.0378 $12H_\gamma$: 0.0212 2.0065♥ 2N: 0.757 H_m : 0.0222 H_o : 0.0419 H_o : 0.0430 H_p : 0.0381 $12H_\gamma$: 0.0213	00Min1
♥ Racemic mixture.			

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{18}H_{18}N_3O_4]$ 	Toluene (glass) ESR / 130 to 140	2.0096 ₃ , 2.0059 ₇ , 2.0022 ₇ ave 2.0059 ₃ N: 2.18 (A_z) N $_{\beta}$: 1.18 (A_z)	90Dik
$[C_{18}H_{18}N_3O_4]$ 	Toluene (glass) ESR / 130 to 140	2.0100 ₁ , 2.0058 ₉ , 2.0022 ₃ ave 2.0060 ₄ N: 2.15 (A_z) N $_{\beta}$: 1.22 (A_z)	90Dik
$[C_{18}H_{18}N_3O_5]$ 	Toluene (glass) ESR / 130 to 140	2.0109 ₇ , 2.0066 ₃ , 2.0021 ₄ ave 2.0065 ₈ 2N: 1.77 (A_z)	90Dik
$[C_{18}H_{19}N_2O_4]$ 	Toluene (glass) ESR / 130 to 140	2.0108 ₅ , 2.0065 ₂ , 2.0022 ₄ iso 2.0065 ₄ 2N: 1.81 (A_z)	90Dik
$[C_{18}H_{20}N_3O]$ 	Synthesis described Chloroform ESR / 298	2.0062 N: 0.902 N $_{\beta}$: 0.409	89Gri3
$[C_{19}H_{19}N_2O_2S_4]$ 	Synthesis described Benzene ESR / 298	2.0062 2N: 0.74	99Nak1
Oxidation of the nitroxide leads to a diradical cation with zfs parameters (THF, 8 K) $ D = 0.0255\text{cm}^{-1}$, $ E = 0.0023\text{cm}^{-1}$, and $g_{\text{av}} 2.0080$ (2.0111, 2.0084, 2.0046).			

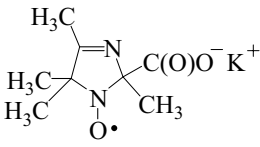
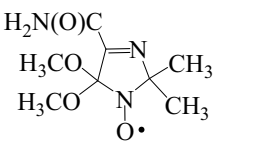
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₁₉ H ₁₉ N ₂ O ₂ S ₆] 	Synthesis described Benzene ESR / 298	2.006 2N: 0.75	99Ish1
[C ₁₉ H ₁₉ N ₄ O] 	Synthesis described Solvent not specified ESR / 298	N: 0.920 N _β : 0.457 Additional splittings due to the first pyridine ring detected but not reported.	00Zie1
[C ₁₉ H ₁₉ N ₄ O ₂] 	Synthesis described Solvent not specified ESR / 298	2N: 0.738 Additional splittings due to the first pyridine ring detected but not reported.	00Zie1
[C ₁₉ H ₂₀ BrN ₂ O ₃] 	Synthesis described Solvent not specified ESR / 298	2N = 0.725	92Zha1
[C ₂₀ H ₂₁ N ₄ O ₂] 	Synthesis described Benzene ESR / 298	2.006 2N: 0.74	98Mat2

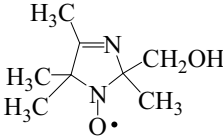
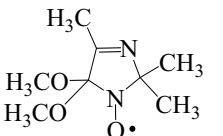
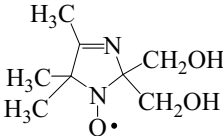
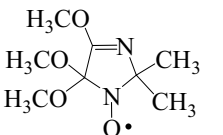
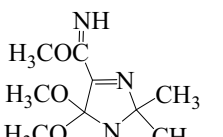
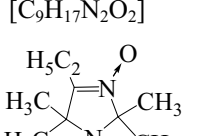
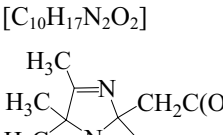
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{20}H_{23}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 0.850 N_β : 0.383	97Rez1
$[C_{21}H_{21}N_2O_2S_6]$ 	Synthesis described Benzene ESR / 298	2.0062 2N: 0.75	99Nak1
Oxidation of the nitroxide leads to a diradical cation with zfs parameters (THF, 8 K) $ D = 0.0245\text{cm}^{-1}$, $ E = 0.0021\text{cm}^{-1}$, and g_{av} 2.0073 (2.0090, 2.0070, 2.0060).			
$[C_{21}H_{24}ClN_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 0.845 N_β : 0.396	97Rez1
$[C_{21}H_{24}ClN_2O_3]$ 	Synthesis described Chloroform ESR / 298	2N: 0.726	97Rez1
$[C_{21}H_{24}N_3O_3]$ 	Synthesis described Solvent not specified ESR / 298	2N = 0.73	99Zha1
$[C_{21}H_{25}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 0.845 N_β : 0.396	97Rez1

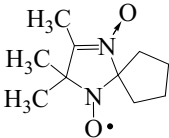
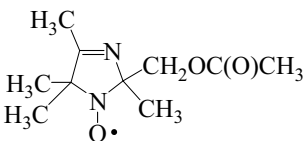
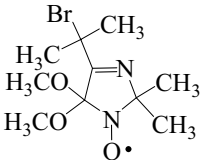
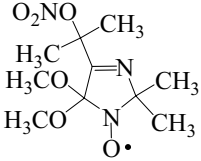
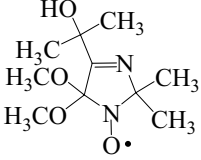
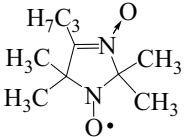
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₂₂H₂₃N₂O₂S₇]</p> 	<p>Synthesis described Benzene ESR / 298</p>	<p>2.0056 2N: 0.73</p>	99Nak1
<p>[C₂₂H₂₃N₂O₂S₈]</p> 	<p>Synthesis described Benzene ESR / 298</p>	<p>2.0072 2N: 0.75</p>	99Nak1
<p>[C₂₃H₂₁N₂O]</p> 	<p>Reaction of 3-nitronyl nitroxide with NO Chloroform ESR / 298</p>	<p>N: 0.968 N_β: 0.429</p>	96Bal1
<p>[C₂₃H₂₁N₂O₂]</p> 	<p>Synthesis described Chloroform ESR / 298</p>	<p>2N: 0.792</p>	96Bal1
<p>[C₂₅H₂₄Br₂N₃O₂]</p> 	<p>Synthesis described Benzene ESR / 298</p>	<p>2.0070 2N: 0.75</p>	96Kum1
	<p>Oxidation with I₂ leads to a diradical cation with zfs parameters (THF, 6 K) $D = 0.0261 \text{ cm}^{-1}$, $E = 0.0019 \text{ cm}^{-1}$, and $g_{av} 2.0135$ (2.0109, 2.0097, 2.0118).</p>		

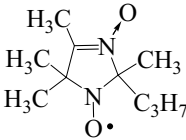
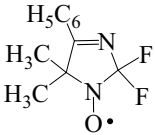
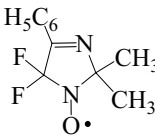
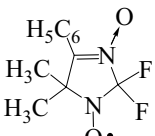
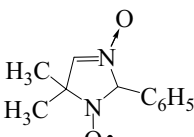
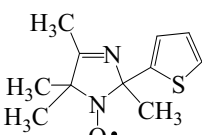
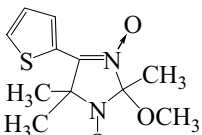
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{33}H_{29}N_2O_2]$ 	Synthesis described Solvent not specified ESR / 298	2N: 0.73 2H _o : 0.075 12H _γ : 0.021	00Tre1
$[C_{33}H_{33}N_2O_2]$ 	Synthesis described Solvent not specified ESR / 298	2N: 0.73 2H _o : 0.054 12H _γ : 0.021 2H: 0.009	00Tre1
$[C_{56}H_{44}N_7O_2Mg]$ 	Synthesis described Toluene ESR / 298	2.0068 2N: 0.74	99Fuj1
$[C_{80}H_{21}N_2O_2]$ 	Synthesis described Benzene ESR / 298	2.010 2N: 0.74	98Mat2

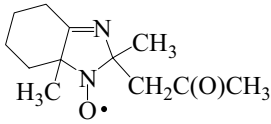
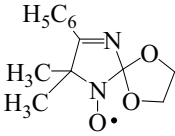
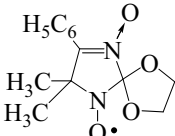
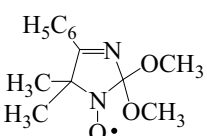
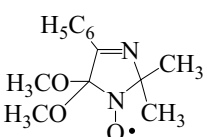
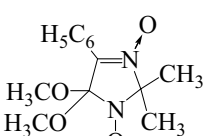
12.3.7 3-Imidazolinyl-*N*-oxyls and 3-imidazolinyl-*N*-oxyls 3-oxide

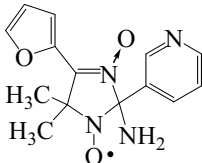
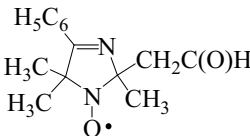
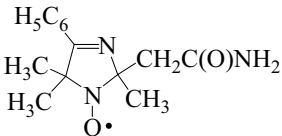
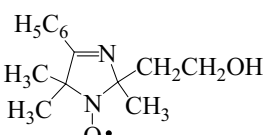
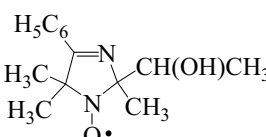
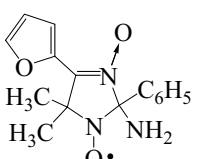
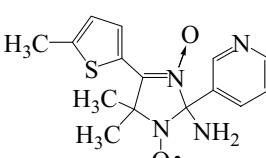
$[C_8H_{12}N_2O_3^- K^+]$ 	Synthesis described Methanol ESR / 298	2.0079 N: 1.36	95Hin1
$[C_8H_{14}N_3O_4]$ 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO ₂ in methanol Chloroform ESR / 298	2.0063 N: 1.233	91Kir1

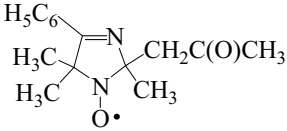
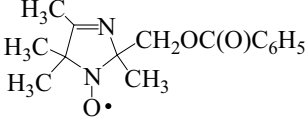
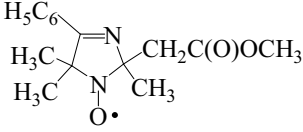
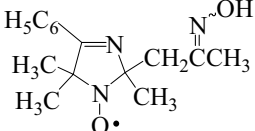
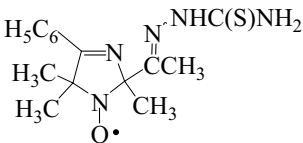
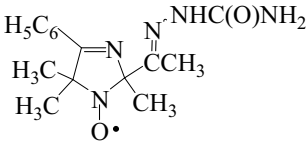
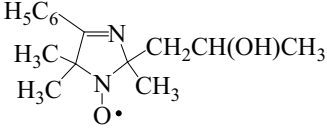
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_8H_{15}N_2O_2]$ 	Synthesis described CH ₂ Cl ₂ ESR / 298	2.0063 N: 1.40	95Hin1
$[C_8H_{15}N_2O_3]$ 	Toluene (glass) ESR / 130 to 140	2.0096 ₄ , 2.0058 ₉ , 2.0024 ₈ iso 2.0060 ₀ N: 2.84 (<i>A_z</i>)	90Dik
$[C_8H_{15}N_2O_2]$ 	Synthesis described CH ₂ Cl ₂ ESR / 298	2.0063 N: 1.41	95Hin1
$[C_8H_{15}N_2O_4]$ 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO ₂ in methanol Chloroform ESR / 298	2.0062 N: 1.266	91Kir1
$[C_9H_{16}N_3O_4]$ 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO ₂ in methanol Chloroform ESR / 298	2.0061 N: 1.238	91Kir1
$[C_9H_{17}N_2O_2]$ 	Oxidation of corresponding 3-imidazoline-3-oxide with decanesulfonic peracid Chloroform (ACN) ESR / 293	N: 1.45	90Saf1
$[C_{10}H_{17}N_2O_2]$ 	Oxidation of corresponding hydroxylamine with MnO Chloroform ESR / 293	N: 1.42	97Rez2

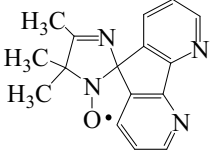
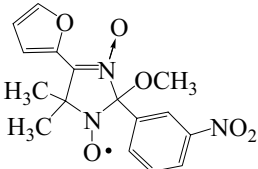
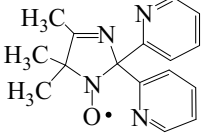
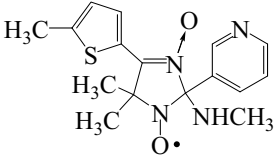
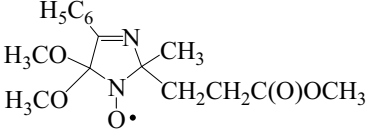
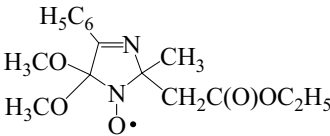
Substance	Generation / Matrix or Solvent / Method / T [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{10}H_{17}N_2O_2]$ 	Oxidation of corresponding 3-imidazoline-3-oxide with decanesulfonic peracid Chloroform (ACN) ESR / 293	N: 1.46	90Saf1
$[C_{10}H_{17}N_2O_3]$ 	Synthesis described CH_2Cl_2 ESR / 298	2.0064 N: 1.37	95Hin1
$[C_{10}H_{18}BrN_2O_3]$ 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO_2 in methanol Chloroform ESR / 298	2.0061 N: 1.235	91Kir1
$[C_{10}H_{18}N_3O_6]$ 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO_2 in methanol Chloroform ESR / 298	2.0061 N: 1.235	91Kir1
$[C_{10}H_{19}N_2O_4]$ 	Synthesis described Solvent not specified ESR	N: 1.79	90Rij1
Structure confirmed by X-ray analysis.			
$[C_{10}H_{19}N_2O_2]$ 	Oxidation of corresponding 3-imidazoline-3-oxide with decanesulfonic peracid Chloroform (ACN) ESR / 293	N: 1.45	90Saf1

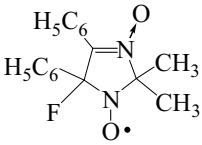
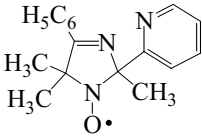
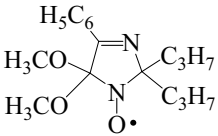
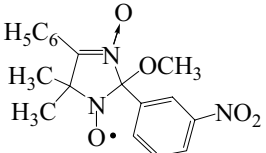
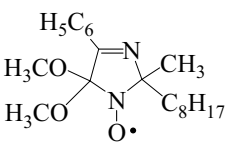
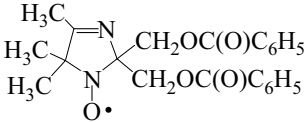
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{10}H_{19}N_2O_2]$ 	Oxidation of corresponding 3-imidazoline-3-oxide with decanesulfonic peracid Chloroform (ACN) ESR / 293	N: 1.44	90Saf1
$[C_{11}H_{11}F_2N_2O]$ 	Reaction of appropriate imidazole 1-oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0067 N: 1.183 2F: 1.746	89Gri1
$[C_{11}H_{11}F_2N_2O]$ 	Reaction of appropriate imidazole 1-oxide with XeF_2 CH_2Cl_2 ESR / 298	2.0069 N: 1.100 2F: 2.503	89Gri1
$[C_{11}H_{11}F_2N_2O_2]$ 	Reaction of appropriate imidazole 1,3-dioxide with XeF_2 CH_2Cl_2 ESR / 298	2.0064 N: 1.183 2F: 1.760	89Gri1
$[C_{11}H_{13}N_2O_2]$ 	Synthesis described Water ESR / 298	N: 1.45 H_β : 1.93	96Dul1
$[C_{11}H_{15}N_2OS]$ 	Synthesis described CH_2Cl_2 ESR / 298	2.0063 N: 1.40	95Hin1
$[C_{11}H_{15}N_2O_3S]$ 	Toluene (glass) ESR / 130 to 140	2.0096 ₄ , 2.0060 ₇ , 2.0023 ₁ iso 2.0060 ₁ N: 2.92 (A_z)	90Dik

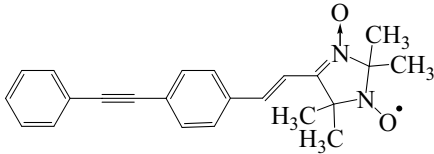
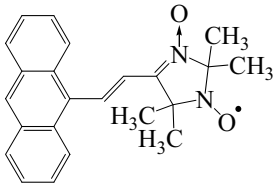
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₁₂ H ₁₉ N ₂ O ₂] 	Synthesis described Chloroform ESR / 298	N: 1.41	97Rez2
[C ₁₃ H ₁₅ N ₂ O ₃] 	Toluene (glass) ESR / 130 to 140	2.0096 ₈ , 2.0060 ₃ , 2.0022 ₄ iso 2.0059 ₈ N: 2.89 (<i>A_z</i>)	90Dik
[C ₁₃ H ₁₅ N ₂ O ₄] 	Toluene (glass) ESR / 130 to 140	2.0099 ₆ , 2.0060 ₅ , 2.0023 ₀ iso 2.0061 ₃ N: 2.78 (<i>A_z</i>)	90Dik
[C ₁₃ H ₁₇ N ₂ O ₃] 	Toluene (glass) ESR / 130 to 140	2.0095 ₄ , 2.0059 ₉ , 2.0022 ₂ iso 2.0059 ₁ N: 2.97 (<i>A_z</i>)	90Dik
[C ₁₃ H ₁₇ N ₂ O ₃] 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO ₂ in methanol Chloroform ESR / 298 Toluene (glass) ESR / 130 to 140	2.0063 N: 1.247 2.0096 ₈ , 2.0058 ₈ , 2.0025 ₂ iso 2.0060 ₃ N: 2.87 (<i>A_z</i>)	91Kir1 90Dik
[C ₁₃ H ₁₇ N ₂ O ₄] 	Treatment of appropriate 3-imidazole 1,3-dioxide with excess PbO ₂ in methanol Chloroform ESR / 298 Toluene (glass) ESR / 130 to 140	2.0063 N: 1.247 2.0099 ₂ , 2.0058 ₇ , 2.0025 ₂ iso 2.0061 ₃ N: 2.87 (<i>A_z</i>)	91Kir2 90Dik

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{14}H_{15}N_4O_3]$ 	Synthesis described Chloroform ESR / 298	2.0062 N: 1.373 $N_{\beta}(NH_2)$: 0.100	89Gri2, 89Gri3
$[C_{14}H_{17}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 1.42	97Rez2
$[C_{14}H_{18}N_3O_2]$ 	Synthesis described Chloroform ESR / 298	N: 1.36	97Rez2
$[C_{14}H_{19}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 1.46	97Rez2
$[C_{14}H_{19}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 1.45	97Rez2
$[C_{15}H_{16}N_3O_3]$ 	Synthesis described Chloroform ESR / 298	2.0061 N: 1.382 $N_{\beta}(NH_2)$: 0.115	89Gri2, 89Gri3
$[C_{15}H_{17}N_4O_2S]$ 	Synthesis described Chloroform ESR / 298 Water	2.0063 N: 1.370 $N_{\beta}(NH_2)$: 0.129 N: 1.407 $N_{\beta}(NH_2)$: 0.187	89Gri2, 89Gri3

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{15}H_{19}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 1.42	97Rez2
$[C_{15}H_{19}N_2O_3]$ 	Synthesis described CH_2Cl_2 ESR / 298	2.0062 N: 1.31	95Hin1
$[C_{15}H_{19}N_2O_3]$ 	Synthesis described Chloroform ESR / 298	N: 1.43	97Rez2
$[C_{15}H_{20}N_3O_2]$ 	Synthesis described Chloroform ESR / 298	N: 1.43	97Rez2
$[C_{15}H_{20}N_5OS]$ 	Synthesis described Chloroform ESR / 298	N: 1.41	97Rez2
$[C_{15}H_{20}N_5O_2]$ 	Synthesis described Chloroform ESR / 298	N: 1.39	97Rez2
$[C_{15}H_{21}N_2O_2]$ 	Synthesis described Chloroform ESR / 298	N: 1.45	97Rez2

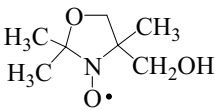
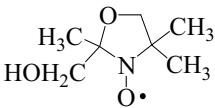
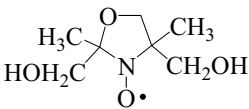
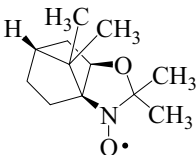
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₆H₁₅N₄O]</p> 	Synthesis described CH ₂ Cl ₂ ESR / 298	2.0063 N: 1.31	95Hin1
<p>[C₁₆H₁₆N₃O₆]</p> 	Toluene (glass) ESR / 130 to 140	2.0098 ₃ , 2.0060 ₈ , 2.0023 ₃ iso 2.0060 ₈ N: 2.87 (A_z)	90Dik
<p>[C₁₆H₁₇N₄O]</p> 	Synthesis described CH ₂ Cl ₂ ESR / 298	2.0064 N: 1.35	95Hin1
<p>[C₁₆H₁₉N₄O₂S]</p> 	Synthesis described Chloroform ESR / 298	2.0063 N: 1.330 $N_\beta(\text{NH}_2)$: 0.100	89Gri2, 89Gri3
<p>[C₁₆H₂₁N₂O₅]</p> 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO ₂ Chloroform ESR / 298	2.0062 N: 1.245	91Kir1
<p>[C₁₆H₂₁N₂O₅]</p> 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO ₂ in methanol Chloroform ESR / 298	2.0062 N: 1.221	91Kir1

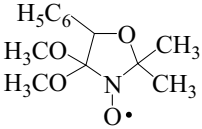
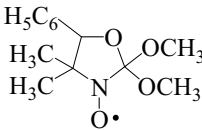
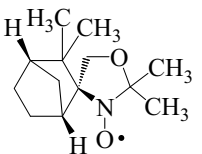
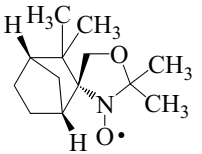
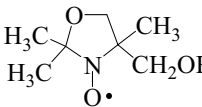
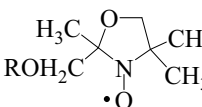
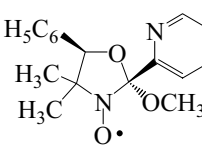
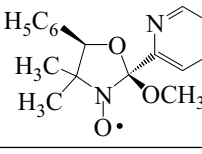
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₇H₁₆FN₂O₂]</p> 	Reaction of appropriate imidazole 1,3-dioxide with XeF ₂ CH ₂ Cl ₂ ESR / 298	2.0065 N:1.174 F: 3.409	89Gri1
<p>[C₁₇H₁₈N₃O]</p> 	Synthesis described CH ₂ Cl ₂ ESR / 298	2.0064 N: 1.36	95Hin1
<p>[C₁₇H₂₅N₂O₃]</p> 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO ₂ in methanol Chloroform ESR / 298	2.0062 N: 1.236	91Kir1
<p>[C₁₈H₁₈N₃O₅]</p> 	Toluene (glass) ESR / 130 to 140	2.0098 ₈ , 2.0060 ₃ , 2.0022 ₂ iso 2.0060 ₄ N: 2.90 (<i>A_z</i>)	90Dik
<p>[C₂₀H₃₁N₂O₃]</p> 	Treatment of appropriate 3-imidazole 1-oxide with excess PbO ₂ in methanol Chloroform ESR / 298	2.0062 N: 1.260	91Kir1
<p>[C₂₂H₂₃N₂O₅]</p> 	Synthesis described CH ₂ Cl ₂ ESR / 298	2.0064 N: 1.35	95Hin1

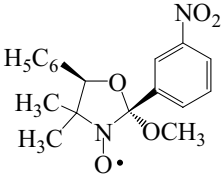
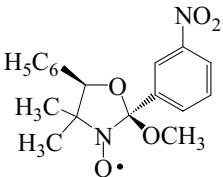
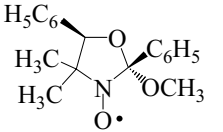
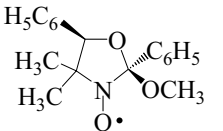
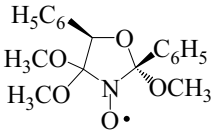
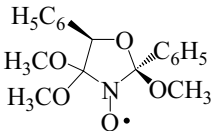
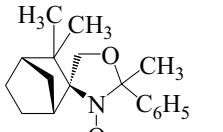
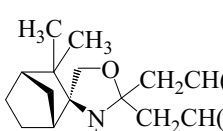
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{23}H_{23}N_2O_2]$ 	Synthesis described ESR / 298	N: 0.74 [♥] $12H_\gamma$: 0.021	00Tre1
$[C_{23}H_{23}N_2O_2]$ 	Synthesis described ESR / 298	N: 1.39 $12H_\gamma$: 0.023	00Tre1

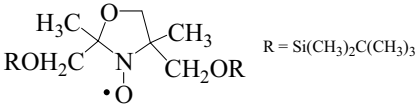
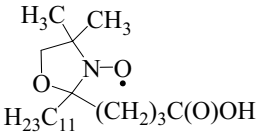
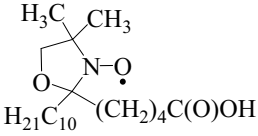
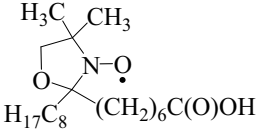
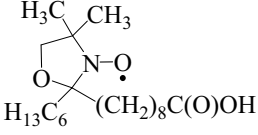
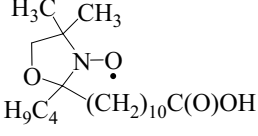
[♥] Value too small: for the proposed structure a nitrogen coupling of ca. 1.40 mT is expected.

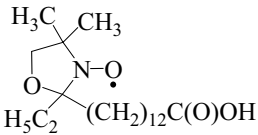
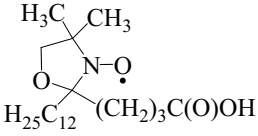
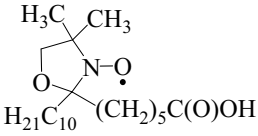
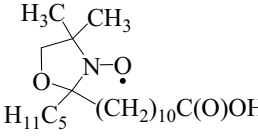
12.3.8 3-Oxazolidinyl-*N*-oxyls

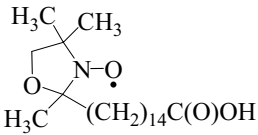
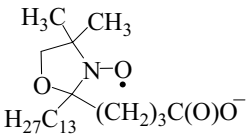
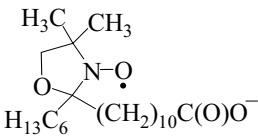
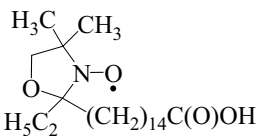
$[C_7H_{14}NO_3]$ 	Synthesis described Ethanol ESR / 298	N: 1.55	94Cha1
$[C_7H_{14}NO_3]$ 	Synthesis described Ethanol ESR / 298	N: 1.56	94Cha1
$[C_7H_{14}NO_4]$ 	Synthesis described Ethanol ESR / 298	N: 1.45	94Cha1
$[C_{12}H_{20}NO_2]$ 	Synthesis described Diethyl ether ESR / 298	2.006 N: 1.39	96Bra1

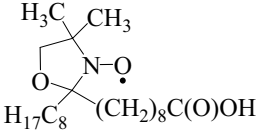
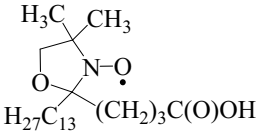
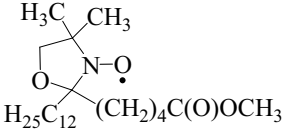
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{18}NO_4]$ 	Oxidation of corresponding hydroxylamine with PbO ₂ in ethanol Chloroform ESR / 298	N: 1.296	92Bak1
$[C_{13}H_{18}NO_4]$ 	Oxidation of corresponding hydroxylamine with PbO ₂ in ethanol Chloroform ESR / 298	N: 1.331	92Bak1
$[C_{13}H_{22}NO_2]$ 	Synthesis described ESR / 298	2.006 N: 1.50	96Bra1, 97Bra1
	Synthesis described Diethyl ether ESR / 298	2.006 N: 1.37	96Bra1
$[C_{13}H_{28}NO_3Si]$  R = Si(CH ₃) ₂ C(CH ₃) ₃	Oxidation of corresponding oxazolidine with CPBA Ethanol ESR / 298	N: 1.48	94Cha1
$[C_{13}H_{28}NO_3Si]$  R = Si(CH ₃) ₂ C(CH ₃) ₃	Oxidation of corresponding oxazolidine with CPBA Ethanol ESR / 298	N: 1.48	94Cha1
$[C_{17}H_{19}N_2O_3]$ 	Synthesis described Chloroform ESR / 298	N: 1.297	92Bak1
	Synthesis described Chloroform ESR / 298	N: 1311	

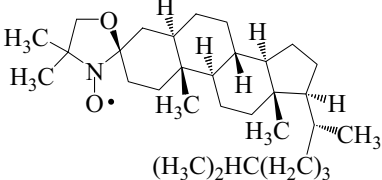
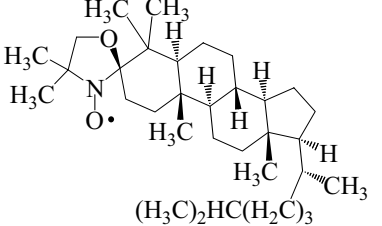
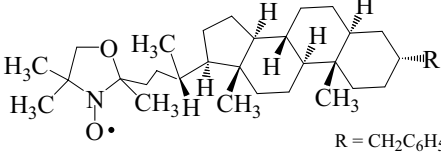
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₈H₁₉N₂O₅]</p>  	<p>Synthesis described Chloroform ESR / 298</p> <p>Synthesis described Chloroform ESR / 298</p>	<p>N: 1.278</p> <p>N: 1.312</p>	92Bak1
<p>[C₁₈H₂₀NO₃]</p>  	<p>Synthesis described Chloroform ESR / 298</p> <p>Synthesis described Chloroform ESR / 298</p>	<p>N: 1.297</p> <p>N: 1.352</p>	92Bak1
<p>[C₁₈H₂₀NO₅]</p>  	<p>Synthesis described Chloroform ESR / 298</p> <p>Synthesis described Chloroform ESR / 298</p>	<p>N: 1.191</p> <p>N: 1.226</p>	92Bak1
<p>[C₁₈H₂₄NO₂]</p> 	Synthesis described ESR / 298	<p>2.006</p> <p>N: 1.40</p>	97Bra1
<p>[C₁₉H₃₄NO₂]</p> 	Synthesis described ESR / 298	<p>2.006</p> <p>N: 1.49</p>	97Bra1

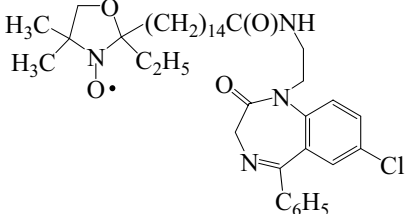
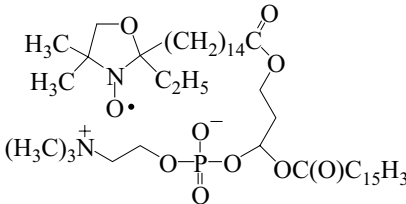
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{19}H_{42}NO_4Si_2]$ 	Oxidation of corresponding oxazolidine with CPBA Ethanol ESR / 298	N: 1.55	94Cha1
$[C_{20}H_{38}NO_4]$ 	Synthesis described Phosphate buffer, pH 7.0 and γ -CD ESR / 298	<i>Free nitroxide</i> N: 1.595 <i>CD-included nitroxide</i> N: 1.545	97Tan1
γ -CD = γ -Cyclodextrin. Stability constant $K_s = 8 \times 10^2 \text{ M}^{-1}$.			
$[C_{20}H_{38}NO_4]$ 	Synthesis described Phosphate buffer, pH 7.0 and γ -CD ESR / 298	<i>Free nitroxide</i> N: 1.599 <i>CD-included nitroxide</i> N: 1.537	97Tan1
Stability constant $K_s = 8 \times 10^2 \text{ M}^{-1}$.			
$[C_{20}H_{38}NO_4]$ 	Synthesis described Phosphate buffer, pH 7.0 and γ -CD ESR / 298	<i>Free nitroxide</i> N: 1.604 <i>CD-included nitroxide</i> N: 1.537	97Tan1
Stability constant $K_s = 8 \times 10^2 \text{ M}^{-1}$.			
$[C_{20}H_{38}NO_4]$ 	Synthesis described Phosphate buffer, pH 7.0 and γ -CD ESR / 298	<i>Free nitroxide</i> N: 1.604 <i>CD-included nitroxide</i> N: 1.535	97Tan1
Stability constant $K_s = 8 \times 10^2 \text{ M}^{-1}$.			
$[C_{20}H_{38}NO_4]$ 	Synthesis described Phosphate buffer, pH 7.0 and γ -CD ESR / 298	<i>Free nitroxide</i> N: 1.605 <i>CD-included nitroxide</i> N: 1.536	97Tan1
Stability constant $K_s = 7.5 \times 10^2 \text{ M}^{-1}$.			

Substance	Generation / Matrix or Solvent / Method / T [K]	g-Factor / a-Value [mT]	Ref. / add. Ref.
$[C_{20}H_{38}NO_4]$ 	Synthesis described Phosphate buffer, pH 7.0 and γ -CD ESR / 298	<i>Free nitroxide</i> N: 1.603 <i>CD-included nitroxide</i> N: 1.539	97Tan1
γ -CD = γ -Cyclodextrine. Stability constant $K_s = 7.5 \times 10^2 \text{ M}^{-1}$.			
$[C_{21}H_{40}NO_4]$ 	NH ₄ Cl saturated water ESR / 295 Betaine micelles aqueous dispersion ESR / 295 Mixed betaine/PFPE aqueous dispersion ESR / 295	2.0080, 2.0062, 2.0029 ave 2.0057 N: 0.62, 0.58, 3.54 iso 1.48 2.0083, 2.007, 2.0029 ave 2.0061 N: 0.53, 0.47, 3.44 iso 1.48 2.0083, 2.007, 2.0029 ave 2.0061 N: 0.52, 0.46, 3.43 iso 1.47	97Ris1
PFPE = Perfluoropolyether vesicles.			
$[C_{21}H_{40}NO_4]$ 	NH ₄ Cl saturated water ESR / 295 Betaine micelles aqueous dispersion ESR / 295 Mixed betaine/PFPE aqueous dispersion ESR / 295	2.0080, 2.0062, 2.0029 ave 2.0057 N: 0.62, 0.58, 3.54 iso 1.48 2.0083, 2.007, 2.0029 ave 2.0061 N: 0.53, 0.47, 3.44 iso 1.48 2.0083, 2.007, 2.0029 ave 2.0061 N: 0.52, 0.46, 3.43 iso 1.47	97Ris1
$[C_{21}H_{40}NO_4]$ 	NH ₄ Cl saturated water ESR / 295 Betaine micelles aqueous dispersion ESR / 295 Mixed betaine/PFPE aqueous dispersion ESR / 295	2.0080, 2.0062, 2.0029 ave 2.0057 N: 0.62, 0.58, 3.54 iso 1.50 2.0083, 2.007, 2.0029 ave 2.0061 N: 0.53, 0.48, 3.47 iso 1.50 2.0083, 2.007, 2.0029 ave 2.0061 N: 0.52, 0.46, 3.43 iso 1.47	97Ris1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[\text{C}_{21}\text{H}_{40}\text{NO}_4]$ 	NH ₄ Cl saturated water ESR / 295 Betaine micelles aqueous dispersion ESR / 295 Mixed betaine/PFPE aqueous dispersion ESR / 295	2.0080, 2.0062, 2.0029 ave 2.0057 N: 0.62, 0.58, 3.54 iso 1.46 2.0083, 2.007, 2.0029 ave 2.0061 N: 0.52, 0.46, 3.43 iso 1.46 2.0083, 2.007, 2.0029 ave 2.0061 N: 0.52, 0.46, 3.43 iso 1.47	97Ris1
PFPE = Perfluoropolyether vesicles.			
$[\text{C}_{22}\text{H}_{41}\text{NO}_4]^-$ 	ESR / 297 Water Lysolecithin micelles Brij 58 micelles CTAB spheric micelles CTAB rodlike micelles EPC liposomes DCDM liposomes	N: 3.48 ($2A_z$) N: 3.60 N: 3.38 N: 3.45 N: 3.45 N: 3.36 N: 3.48	89Sho1
CTAB = Cetyltrimethylammonium bromide. Brij58 = Polyoxyethylene 20-cetyl ether. EPC = Egg yolk phosphatidylcholine. DCDM = Dicetyldimethylammonium bromide.			
$[\text{C}_{22}\text{H}_{41}\text{NO}_4]^-$ 	ESR / 297 Water Lysolecithin micelles Brij 58 micelles CTAB spheric micelles CTAB rodlike micelles EPC liposomes DCDM liposomes	N: 3.48 ($2A_z$) N: 3.60 N: 3.40 N: 3.38 N: 3.36 N: 3.35 N: 3.36	89Sho1
$[\text{C}_{22}\text{H}_{42}\text{NO}_4]$ 	ESR / 293 Water Heptane Alkylsuphate micelles* PEO/water♥ L64/water (1:1 w/w)* CCl ₄	N: 1.59 N: 1.41 N: 1.53 N: 1.450 N: 1.44 N: 1.424	94Kan1, 95Bam1, 97Gri1, 98Dzi1, 98Vas1, 98Was1
PEO = Poly(ethylene oxide). L ₆₄ = Triblock copolymer (Ethylene oxide) ₁₃ -(Propylene oxide) ₃₀ -(Ethylene oxide) ₁₃ . * Alkyl chain: C ₇ to C ₁₃ . ♥ At 287 K. ♦ At 318 K. ♦ At 320 K. Additional studies on behavior in micellar systems: [87Led1], [93Bra1], [94Mor1], [95Yos1], [99Rik1].			

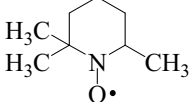
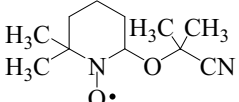
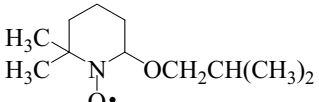
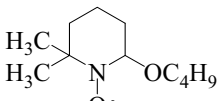
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{22}H_{42}NO_4]$  $H_{17}C_8 (CH_2)_8 C(O)OH$	(EMAA) Poly(ethylene- <i>co</i> -methacrylic acid) ionomers ESR / 360	2.0088, 2.0061, 2.0027 ave 2.0059 N: 0.66, 0.60, 3.49 ave 1.58	97Kut1
Dynamic behavior of aggregates investigated in the temperature range 120 to 410 K.			
$[C_{22}H_{42}NO_4]$  $H_{27}C_{13} (CH_2)_3 C(O)OH$	ESR / 293 Water Heptane Alkylsuphate micelles* ESR / 294 NPE ₄ /cyclohexane/water ([H ₂ O]/[NPE ₄] = 1.8) ([H ₂ O]/[NPE ₄] = 6.9) C ₁₂ E ₄ /cyclohexane/water ([H ₂ O]/[C ₁₂ E ₄] = 2.7) C ₁₂ E ₄ / <i>n</i> -decane/water ([H ₂ O]/[C ₁₂ E ₄] = 2.2) ([H ₂ O]/[C ₁₂ E ₄] = 7.1) ESR / 291* C ₁₂ E ₄ / <i>n</i> -decane/water ([H ₂ O]/[C ₁₂ E ₄] = 7.1) ([H ₂ O]/[C ₁₂ E ₄] = 10.1) ([H ₂ O]/[C ₁₂ E ₄] = 23.7) L62/water (1:1 w/w)♥ (2:1 w/w)♥ (1:1 w/w)▲	N: 1.59 N: 1.44 N: 1.52 to 1.53 N: 2.11, ± 1.18 iso 1.49 N: 2.29, ± 1.11 iso 1.50 N: 2.06, ± 1.20 iso 1.50 N: 1.93, ± 1.26 iso 1.48 N: 2.21, ± 1.13 iso 1.49 N: 2.34, ± 1.11 iso 1.51 N: 2.36, ± 1.10 iso 1.52 N: 2.33, ± 1.12 iso 1.52 N: 2.47, ± 0.93 N: 2.51, ± 0.94 N: 2.15, ± 1.11	94Kan1, 97Vas1 98Was1 98Cal1 98Vas1
* Alkyl chain: C ₇ to C ₁₃ . NPE ₄ = Polyoxyethylene[4]nonylphenyl ether (2.8% in <i>c</i> -C ₆ H ₁₂). C ₁₂ E ₄ = Poxoxyethylene[4]dodecyl ether (7.9% in <i>c</i> -C ₆ H ₁₂ and 26.1% in C ₁₀ H ₂₂). ♥ Liquid crystalline phase. L62 = Triblock copolymer (Ethylene oxide) ₆ -(Propylene oxide) ₃₆ -(Ethylene oxide) ₆ . ♥ At 295 K. ▲ At 320 K. Additional studies on behavior in micellar systems: [93Bra1], [94Kaw1], [94Orä1], [94Mor1], [96Smi1], [98Dzi1], [99Rik1].			
$[C_{23}H_{44}NO_4]$  $H_{25}C_{12} (CH_2)_4 C(O)OCH_3$	(EMAA) Poly(ethylene- <i>co</i> -methacrylic acid) ionomers (0.5 to 1.6%) / water ESR / 297 ESR / 120	N: 5.84 ($2A_{zz}$) N: 7.00 ($2A_{zz}$)	98Sza1

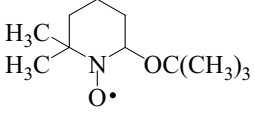
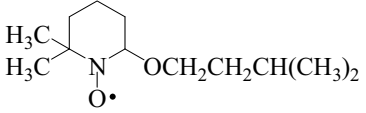
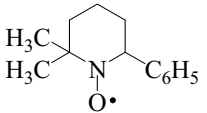
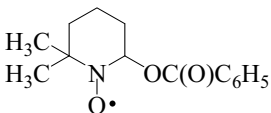
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₃₁H₅₄NO₂]</p>  <p>(H₃C)₂HC(H₂C)₃</p>	<p>CBO11O.6 non-symmetric dimer ESR / 350 to 385</p> <p>Liquid crystalline phase of DHMS-7,9 2D-FT-ESR/2D-ELDOR</p> <p>ELDOR = Electron electron double resonance. CBO11O.6 = α-(4-cyanobiphenyl-4'-yloxy)-ω-(4-hexylaniline-benzylidene-4'-oxy) undecane DHMS-7,9 = polyethers based on 4,4'-dihydroxy-α-methylstilbene and mixed aliphatic linking groups of 7 and 9 carbon atoms.</p>	<p> 2.0062, \pm 2.0058 N: 0.65, \pm 1.925</p> <p>2.0084, 2.0060, 2.0022 ave 2.0055 N: 0.647, 0.450, 3.252 ave 1.45</p>	<p>98LeM1</p> <p>96Xu1</p>
<p>[C₃₃H₅₈NO₂]</p>  <p>(H₃C)₂HC(H₂C)₃</p>	<p>Solid matrix ESR / 228 to 385</p>	<p>2.009010, 2.006053, 2.002237 N: 0.45, 0.47, 3.42</p>	<p>97Ear1</p>
<p>[C₃₆H₅₆NO₃]</p>  <p>R = CH₂C₆H₅</p>	<p>Synthesis described ESR / 298 Hexane Isooctane Toluene Chloroform Ethyl acetate THF Acetone CH₂Cl₂ Isopropanol Ethanol Multilamellar vesicles of EPC ESR</p>	<p>2.0058 N: 1.383</p> <p>2.0058 N: 1.387</p> <p>2.0055 N: 1.431</p> <p>2.0054 N: 1.436</p> <p>2.0053 N: 1.437</p> <p>2.0052 N: 1.439</p> <p>2.0052 N: 1.456</p> <p>2.0051 N: 1.481</p> <p>2.0051 N: 1.493</p> <p>2.0050 N: 1.506</p> <p>N: 1.410</p>	<p>92Ban2</p> <p>94Ban1</p>

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{39}H_{56}ClN_4O_4]$ 	Synthesis described DMSO ESR / 298	2.0061 N: 1.68	97Niw1
$[C_{46}H_{90}N_2O_{10}P]$ 	DMPC membranes hydrated in 100% humidity ESR / 138	2.0089, 2.0058, 2.0021 ave 2.0056 N: 0.5, 0.5, 3.32 ave 1.44	97Cas1
Spectra in the temperature range 273 K to 363 K also reported.			

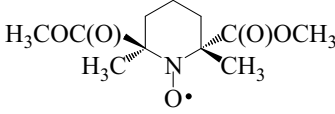
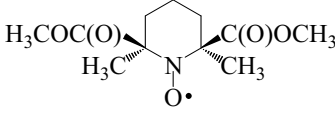
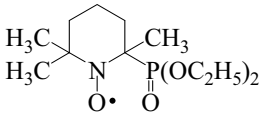
12.3.9 Piperidiny-*N*-oxyls


12.3.9.1 6-Substituted 2,2-dimethylpiperidiny-*N*-oxyls

$[C_8H_{16}NO]$ 	Photolysis of DMSO, H_2O_2 and M_2PyO in phosphate buffer Benzene ESR / 298	N: 1.642 H_β : 1.882	95Zha1
$[C_{11}H_{19}N_2O_2]$ 	Photolysis of AIBN and M_2PyO in the presence of oxygen Benzene ESR / 298	N: 1.392 H_β : 0.342	95Zha1
$[C_{11}H_{22}NO_2]$ 	Photolysis of isobutyl nitrite and M_2PyO Benzene ESR / 298	N: 1.376	95Zha1
$[C_{11}H_{22}NO_2]$ 	Photolysis of <i>n</i> -butyl nitrite and M_2PyO Benzene ESR / 298	N: 1.376	95Zha1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{22}NO_2]$ 	Photolysis of <i>t</i> -butyl nitrite and M ₂ PyO Benzene ESR / 298	N: 1.435 H _β : 0.221* H _γ : 0.147*	95Zha1
* Can be exchanged.			
$[C_{12}H_{24}NO_2]$ 	Photolysis of isoamyl nitrite and M ₂ PyO Benzene ESR / 298	N: 1.376	95Zha1
$[C_{13}H_{18}NO]$ 	Photolysis of benzoyl peroxide and M ₂ PyO Benzene ESR / 298	N: 1.630 H _β : 1.818	95Zha1
$[C_{14}H_{18}NO_3]$ 	Photolysis of benzoyl peroxide and M ₂ PyO Benzene ESR / 298	N: 1.389 H _β : 0.519	95Zha1

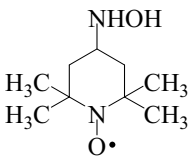
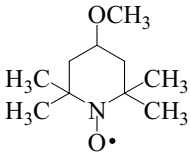
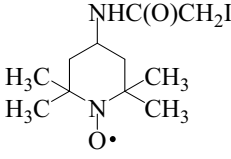
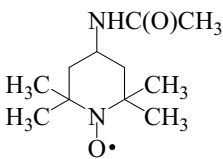
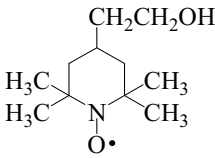
12.3.9.2 2,6-Disubstituted 2,6-dimethylpiperidinyI-*N*-oxyls

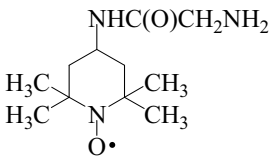
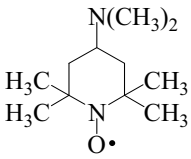
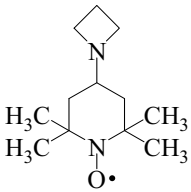
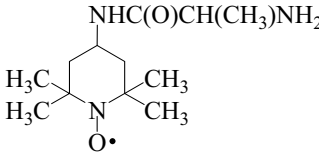
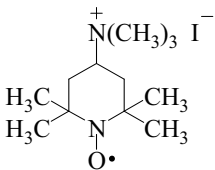
$[C_{11}H_{18}NO_5]$ 	Synthesis described Water ESR / 298	N: 1.52	95Ein1
	Synthesis described Water ESR / 298	N: 1.52	95Ein1
$[C_{12}H_{25}NO_4P]$ 	Synthesis described Benzene ESR / 298	2.0059 N: 1.450 ³¹ P: 3.700	91LeM1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_{19}\text{H}_{22}\text{NO}]$ 	Synthesis described Solvent not specified ESR / 298	2.0066 N: 1.406	98Ein1

12.3.9.3 4-Substituted 2,2,6,6-tetramethylpiperidiny-*N*-oxyls

[illegible]

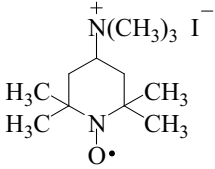
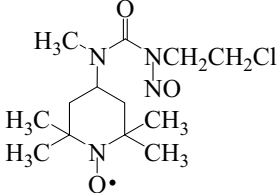
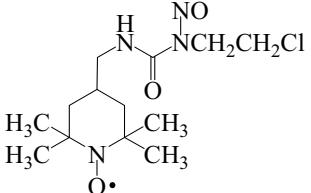
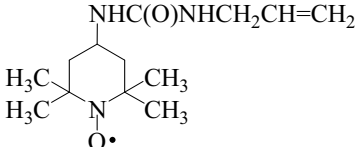
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_9H_{19}N_2O_2]$ 	Oxidation of corresponding piperidine with dimethyloxirane Acetone ESR / 298	N: 1.519	98Kab1
$[C_{10}H_{20}NO_2]$ 	Water ESR / 298	N: 1.678	93Mal1
$[C_{11}H_{20}IN_2O_2]$ 	ESR / 140 Toluene Ethanol Methanol Water/glycerine	2.0095 ₃ , 2.0057 ₇ , 2.0017 ₆ iso 2.0056 ₉ N: 3.40 (A_{zz}) 2.0091 ₀ , 2.0057 ₃ , 2.0021 ₀ iso 2.0056 ₄ N: 3.58 (A_{zz}) 2.0086 ₀ , 2.0055 ₀ , 2.0017 ₈ iso 2.0052 ₉ N: 3.73 (A_{zz}) 2.0083 ₄ , 2.0057 ₁ , 2.0016 ₇ iso 2.0052 ₄ N: 3.77 (A_{zz})	90Kri1
$[C_{11}H_{21}N_2O_2]$ 	Mixture of 6OCB-8OCB ESR / 353 to 373 [*] ESR / 303 to 318 [*] Solid matrix ESR / 241	2.0099, 2.0064, 2.0023 iso 2.0062 N: 0.592, 0.529, 3.560 iso 1.560 N: 1.569 2.00995 ₆ , 2.00611 ₉ , 2.00223 ₉ ave 2.00610 ₅ N: 0.41, 0.49, 3.42 ave 1.44	89Nay1 97Ear1
6OCB = 4-Cyano-4'-(<i>n</i> -hexyloxy)biphenyl. 8OCB = 4-Cyano-4'-(<i>n</i> -octyloxy)biphenyl. Poly- or perdeuterated samples were used. [*] Isotropic phase. [*] Smectic A phase.			
$[C_{11}H_{22}NO_2]$ 	Synthesis described ESR	N: 1.6	87Gal1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{22}N_3O_2]$ 	Synthesis described CH_2Cl_2 ESR	N: 1.6	94Sos1
$[C_{11}H_{23}N_2O]$ 	Synthesis described Benzene ESR	2.007 N: 1.55	99Nak1
$[C_{12}H_{23}N_2O]$ 	Synthesis described Benzene ESR	2.007 N: 1.44	99Nak1
$[C_{12}H_{24}N_3O_2]$ 	CH_2Cl_2 ESR / 298	N: 1.6	94Sos1
$[C_{12}H_{26}N_2O^+I^-]$ 	ESR / 293 [★] THF Acetone DMF DMSO ACN Chloroform Cyclohexanol 1-Butanol 1-Propanol Methanol	1.549 1.559 1.567 1.571 1.575 1.578 1.598 1.603 1.606 1.618	87Ott1

[★] Temperature coefficient given for the different solvents.

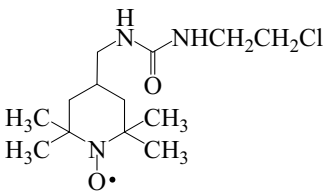
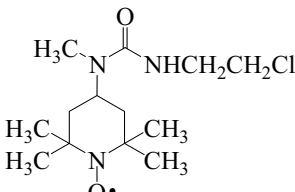
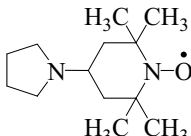
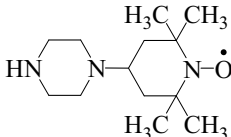
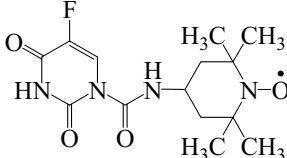
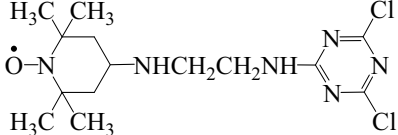
Adsorption onto different kinds of asbestos fiber discussed [96Ott1].

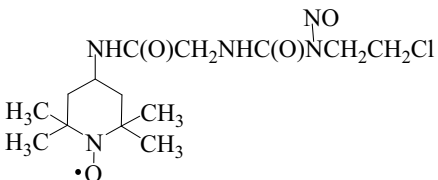
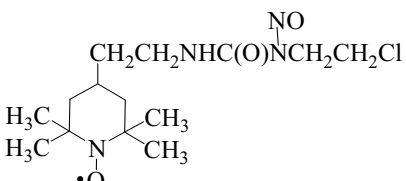
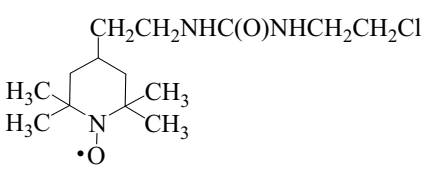
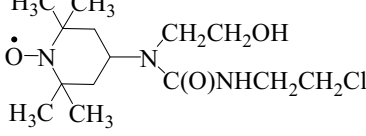
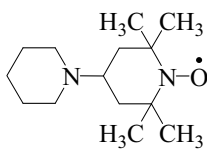
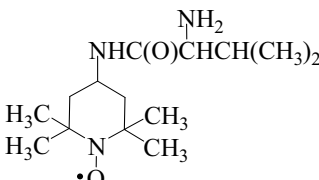
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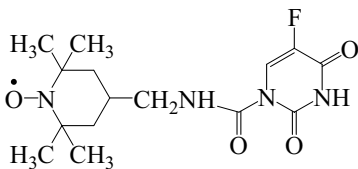
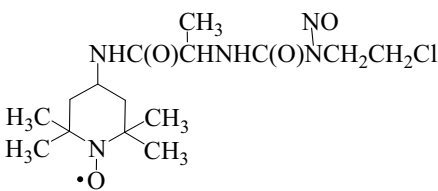
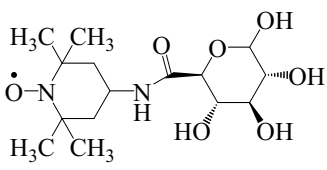
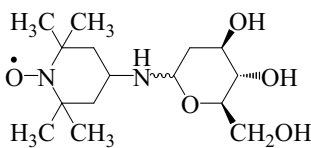
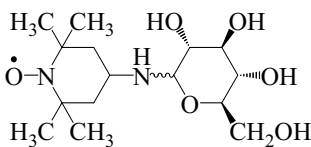
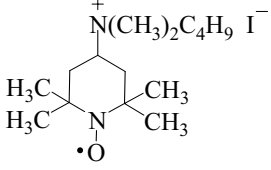
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{12}H_{26}N_2O^+I^-]$ (<i>continued</i>) 	Ethanol [♥] L62 reverse micelles/ <i>o</i> -xylene/water W = 0.4 W = 1.0 W = 2.0 L62 reverse micelles/ water W = 1.0 W = 2.0	N: 1.610 6H _γ (CH ₃ ,eq): 0.047 6H _γ (CH ₃ ,ax): 0.000 ₅ 2H _γ (ring,ax): 0.031 2H _γ (ring,eq): 0.048 H _δ (ring): 0.009 ¹³ C _β (CH ₃ ,ax): 0.665 ¹³ C _β (ring): 0.410 N: 1.625 N: 1.633 N: 1.648 N: 1.605 N: 1.625	87Ott1 98Vas1
$[C_{13}H_{24}ClN_4O_3]$ 	Synthesis described Benzene ESR / 298	N: 1.56	93Sen1
$[C_{13}H_{24}ClN_4O_3]$ 	Synthesis described Benzene ESR / 298	N: 1.56	93Sen1
$[C_{13}H_{24}N_3O_2]$ 	Synthesis described Benzene ESR / 298	N: 1.57	93Sen2

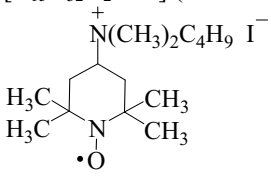
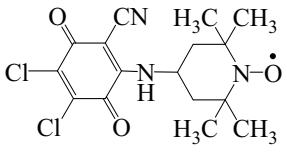
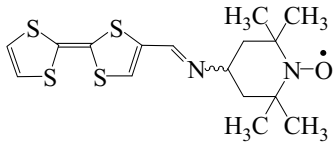
[♥] For the procedure used in the determination of the hfs constants see [87Ott2].

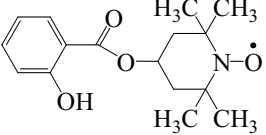
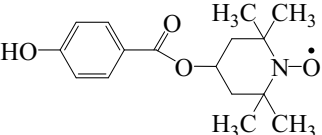
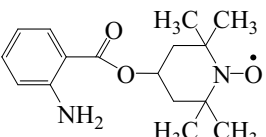
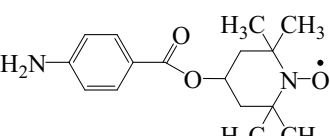
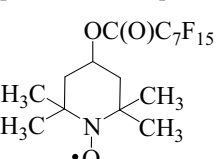
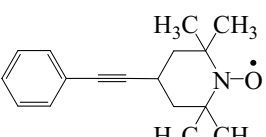
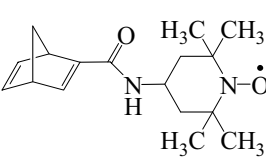
L62 = Triblock copolymer poly(ethylene oxide)-*block*-poly(propylene oxide)-*block*-poly(ethylene oxide) (EO)₆PO₃₆EO₆.
W = [H₂O] / [EO].

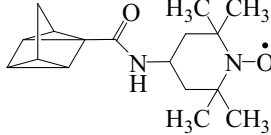
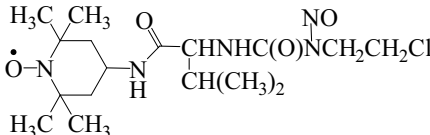
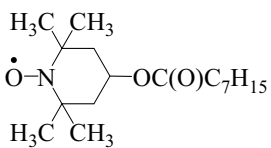
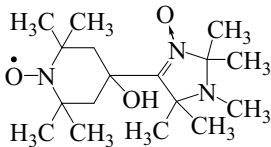
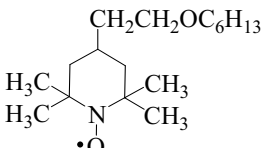
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{25}ClN_3O_2]$ 	Synthesis described Benzene ESR / 298	N: 1.56	93Sen2
$[C_{13}H_{25}ClN_3O_2]$ 	Synthesis described Benzene ESR / 298	N: 1.57	93Sen2
$[C_{13}H_{25}N_2O]$ 	Synthesis described Benzene ESR	2.007 N: 1.48	99Nak1
$[C_{13}H_{26}N_3O]$ 	ESR / 298 Hexane Water	N: 1.516 N: 1.688	93Mal1
$[C_{14}H_{20}FN_4O_4]$ 	Synthesis described Benzene ESR	N: 1.56	89Sen1
$[C_{14}H_{23}Cl_2N_6O]$ 	Synthesis described Benzene ESR Bound to rat immuno- globulin Water ESR / 298	2.0055 N: 1.675 N: 2 5.12, 2 ± 2.42 iso 1.66	88Bon1

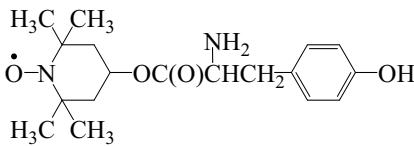
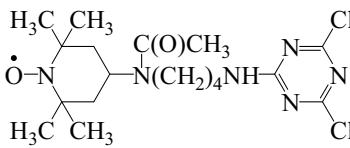
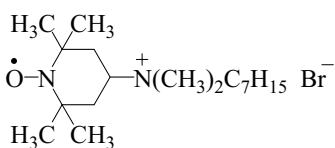
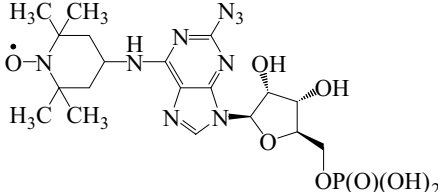
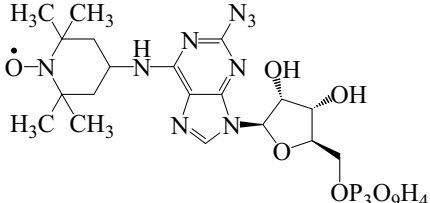
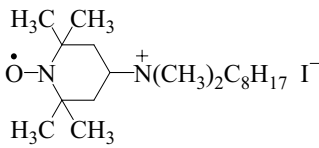
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{14}H_{25}ClN_3O_4]$ 	CH ₂ Cl ₂ ESR / 298	N: 1.6	94Sos1
$[C_{14}H_{26}ClN_4O_3]$ 	Synthesis described Benzene ESR / 298	N: 1.55	93Sen1
$[C_{14}H_{27}ClN_3O_2]$ 	Synthesis described Benzene ESR / 298	N: 1.55	93Sen1
$[C_{14}H_{27}ClN_3O_3]$ 	Synthesis described Benzene ESR / 298	N: 1.54	93Sen2
$[C_{14}H_{27}N_2O]$ 	Synthesis described Benzene ESR	2.007 N: 1.54	99Nak1
$[C_{14}H_{28}N_3O_2]$ 	CH ₂ Cl ₂ ESR / 298	N: 1.6	94Sos1

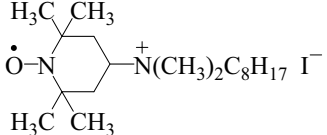
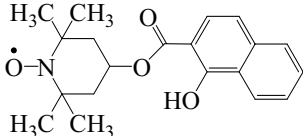
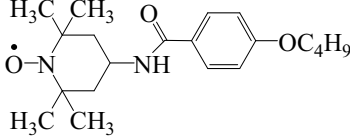
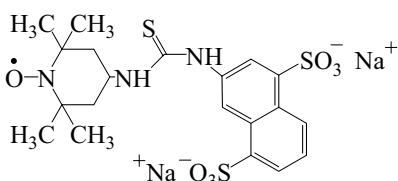
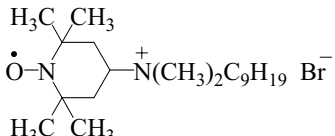
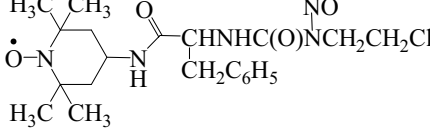
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{15}H_{22}FN_4O_4]$ 	Synthesis described Benzene ESR	N: 1.56	89Sen1
$[C_{15}H_{27}ClN_5O_4]$ 	CH_2Cl_2 ESR / 298	N: 1.6	94Sos1
$[C_{15}H_{27}N_2O_7]$ 	ESR / 298 Water Surfactant/chloroform/ cyclohexane/water [Water] / [Surf.] = 0 [Water] / [Surf.] = 2 [Water] / [Surf.] = 4 to 8 [Water] / [Surf.] = 10	N: 1.687 N: 1.575 N: 1.575 N: 1.588 N: 1.625	91Gre1
$[C_{15}H_{29}N_2O_5]$ 	Synthesis described Water ESR / 298	N: 1.6	89Sos1
$[C_{15}H_{29}N_2O_6]$ 	Synthesis described Water ESR / 298	N: 1.6	89Sos1
$[C_{15}H_{32}N_2O^+I^-]$ 	Decane EO ₄ /Water, W = 0.1 W = 1 W = 2.4 W = 3.7 W = 7 W = 11 W = 15	N: 1.52 N: 1.550 N: 1.580 N: 1.600 N: 1.615 N: 1.632 N: 1.648 N: 1.652	98Cal1
(continued)			
EO ₄ = Tetra(ethylene oxide). W = [H ₂ O] / [EO ₄].			

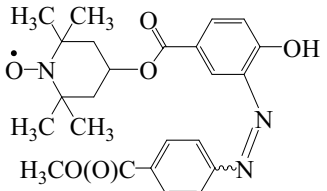
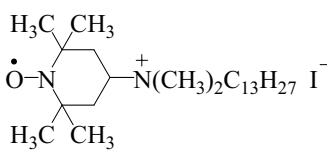
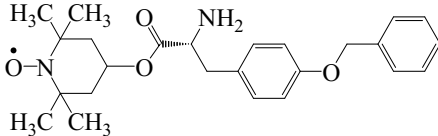
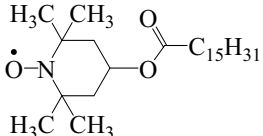
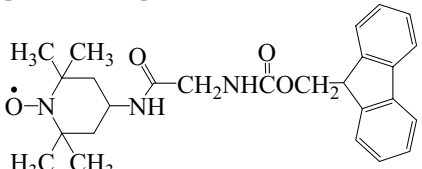
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₅H₃₂N₂O⁺I⁻] (<i>continued</i>)</p> 	<p>NPE₄(C)/Water, W = 0.8 W = 2.1 W = 3.1 W = 5.5</p> <p>C₁₂E₄(C)/Water, W = 0.3 W = 0.9 W = 1.6 W = 2.5 W = 4.0</p> <p>C₁₂E₄(D)/Water, W = 0.4 W = 1.2 W = 2.1 W = 3.2 W = 4.5 W = 7.9</p> <p>L62 reverse micelles/ <i>o</i>-xylene/water, W = 0.4 W = 1.0 W = 2.0</p> <p>L62 reverse micelles/ water, W = 1.0 W = 2.0</p> <p>NPE₄(C) = Polyoxyethylene[4]nonylphenyl ether (2.8% in cyclohexane). C₁₂E₄(C) = Polyoxyethylene[4]dodecyl ether (7.9% in cyclohexane). C₁₂E₄(D) = Polyoxyethylene[4]dodecyl ether (26.1% in decane). L62 = Triblock copolymer poly(ethylene oxide)-<i>block</i>-poly(propylene oxide)-<i>block</i>-poly(ethylene oxide) (EO)₆PO₃₆EO₆. W = [H₂O] / [Surfactant].</p>	<p>N: 1.600 N: 1.631 N: 1.643 N: 1.653</p> <p>N: 1.541 N: 1.600 N: 1.630 N: 1.640 N: 1.647</p> <p>N: 1.546 N: 1.570 N: 1.600 N: 1.615 N: 1.633 N: 1.640</p> <p>N: 1.600 N: 1.625 N: 1.637</p> <p>N: 1.600 N: 1.610</p>	<p>98Cal1</p> <p>98Vas1</p>
<p>[C₁₆H₁₈Cl₂N₃O₃]</p> 	<p>Synthesis described Benzene ESR</p>	<p>2.007 N: 1.58</p>	<p>96Nak1</p>
<p>[C₁₆H₂₁N₂OS₄]</p> 	<p>Heptane ESR / 298</p> <p>Oxidation with excess iodine affords [Nox]^{•+}I₃⁻: <i>g</i> = 2.0078, N: 7.84.</p>	<p>2.0071 N: 1.553 Further splittings due to γ-H from the methyl groups.</p>	<p>93Sug1</p>

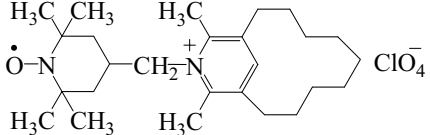
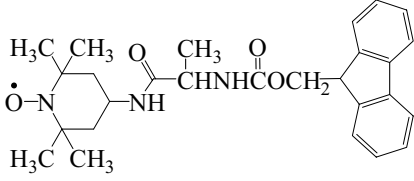
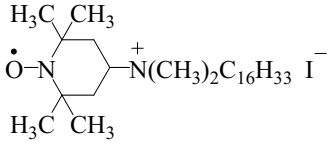
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{16}H_{22}NO_4]$ 	Synthesis described Benzene ESR / 298	N: 1.55	93Zha1
$[C_{16}H_{22}NO_4]$ 	Synthesis described Chloroform ESR / 298	N: 1.59	93Zha1
$[C_{16}H_{23}N_2O_3]$ 	Synthesis described Benzene ESR / 298	2.0061 N: 1.54	96Dra1
$[C_{16}H_{23}N_2O_3]$ 	Synthesis described Benzene ESR / 298	2.0061 N: 1.55	87She1, 96Dra1
$[C_{17}H_{17}F_{15}NO_3]$ 	Synthesis described Water/acetone (10:1) ESR / 300	N: 1.68	89Kup1
$[C_{17}H_{22}NO]$ 	<i>tert</i> -Butylbenzene ESR / 130 to 170	2.0097 ₉ , 2.0062 ₂ , 2.0020 ₆ iso 2.0060 ₂ N: 3.41 (A_{zz})	90Kri1
$[C_{17}H_{25}N_2O_2]$ 	Synthesis described Benzene ESR / 298	2.007 N: 1.56	00Nak1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{17}H_{25}N_2O_2]$ 	Photolysis of corresponding TEMPO substituted norbornadiene (preceding entry) Benzene ESR / 298	2.007 N: 1.56	00Nak1
$[C_{17}H_{31}ClN_5O_4]$ 	Synthesis described CH_2Cl_2 ESR / 298	N: 1.6	94Sos1
$[C_{17}H_{32}NO_3]$ 	Synthesis described ESR / 298 Dodecane DPPC* 1-Octanol DMPA* DTAB NaDS SPFO Water	N:1.518 1.568 1.577 1.592 1.618 1.638 1.672 1.691	94Kaw1
DPPC = Dipalmitoylphosphatidylcholine. DMPA = Dimyristoylphosphatidic acid. DTAB = Dodecyltrimethylammonium bromide. NaDS = Sodium dodecylsulphate. * At 318 K. * At 328 K.			
$[C_{17}H_{32}N_3O_3]$ 	Synthesis described Chloroform ESR / 298	N: 1.57	00Voi1
$[C_{17}H_{34}NO_2]$ 	ESR / 293 Water/DTAB (< CMC) Water/DTAB (> CMC) Water/TTAB (> CMC) Water/TTAB (> CMC) Water/CTAB (< CMC) Water/CTAB (> CMC)	N: 1.69 N: 1.63 N: 1.71 N: 1.63 N: 1.70 N: 1.62	98Was1
TTAB = Tetradecyltrimethylammonium bromide. CTAB = Cetyltrimethylammonium bromide. CMC = Critical micelle concentration.			

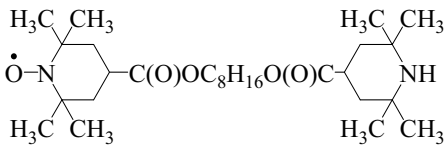
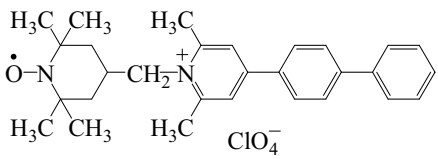
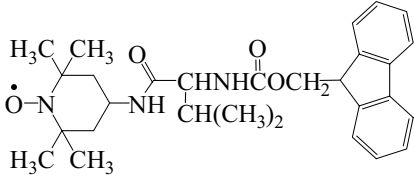
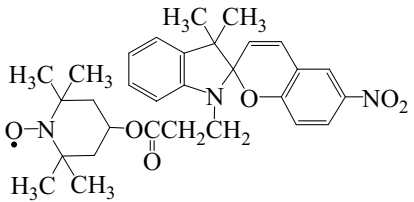
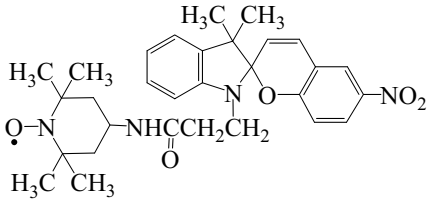
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{18}H_{27}N_2O_4]$ 	Synthesis described Benzene ESR / 298	2.0048 N: 1.54	96Dra1
$[C_{18}H_{29}Cl_2N_6O_2]$ 	Synthesis described ESR / 298 Bound to rat immuno-globulin Water ESR / 298	2.0055 N: 1.675 N: 2 4.86, 2 ± 2.52 iso 1.65	88Bon1
$[C_{18}H_{38}N_2O^+Br^-]$ 	Water ESR / 298	N: 1.58	96Liv1
$[C_{19}H_{29}N_9O_8P]$ 	Water ESR / 298	N: 1.72	96Sei1
$[C_{19}H_{31}N_9O_{14}P_3]$ 	Water ESR / 298	N: 1.74	96Sei1
$[C_{19}H_{40}N_2O^+I^-]$ 	ESR / 298 TX-100(C)/Water W = 0.1 TX-100(B-H)/Water W = 0.1	N: 1.570 N: 1.570	98Cal1
<p>(continued)</p> <p>TX-100(C) = Polyoxyethylene[10]<i>tert</i>-octylphenyl ether (0.27 M in cyclohexane). TX-100(B-H) = Polyoxyethylene[10]<i>tert</i>-octylphenyl ether (0.27 M in benzene-<i>n</i>hexane). W = [H₂O] / [Surfactant].</p>			

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₉H₄₀N₂O⁺I⁻] (<i>continued</i>)</p> 	<p>L62 reverse micelles/ <i>o</i>-xylene/water, <i>W</i> = 0.4 <i>W</i> = 1.0 <i>W</i> = 2.0</p> <p>L62 reverse micelles/ water, <i>W</i> = 1.0 <i>W</i> = 2.0</p> <p>L62 = Triblock copolymer poly(ethylene oxide)-<i>block</i>-poly(propylene oxide)-<i>block</i>-poly(ethylene oxide) (EO)₆PO₃EO₆. <i>W</i> = [H₂O] / [Surfactant].</p>	<p>N: 1.563 N: 1.590 N: 1.604</p> <p>N: 1.575 N: 1.605</p>	98Vas1
<p>[C₂₀H₂₄NO₄]</p> 	Synthesis described Benzene ESR / 298	N: 1.55	93Zha1
<p>[C₂₀H₃₁N₂O₃]</p> 	Mixture of 6OCB-8OCB ESR / 283 to 373	2.0094, 2.0058, 2.0026 iso 2.0059 N: 0.734, 0.784, 3.160 iso 1.559	89Nay1
<p>[C₂₀H₂₄N₃O₇S₂²⁻2Na⁺]</p> 	Synthesis described Water – acetone ESR / 298	A plot is reported of <i>a_N</i> vs the percent of acetone	92Sun1
<p>[C₂₀H₄₂N₂O⁺Br⁻]</p> 	ESR / 77 XAD-2 macroreticular resin XAD-4 macroreticular resin	N: 6.800 (<i>2A_z</i>) N: 6.763 (<i>2A_z</i>)	92Hwa1
<p>[C₂₁H₃₁ClN₅O₄]</p> 	Synthesis described CH ₂ Cl ₂ ESR / 298	N: 1.6	94Sos1

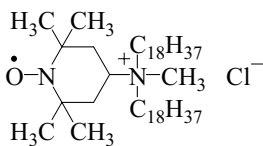
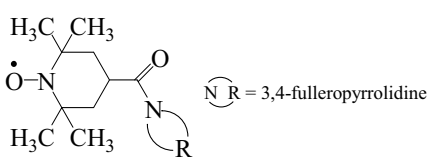
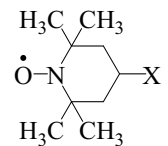
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{24}H_{28}N_3O_6]$ 	Synthesis described Benzene ESR / 298	N: 1.54	93Zha1
$[C_{24}H_{50}N_2O^+I^-]$ 	ESR / 298 Water 3.5-SBD / Water 4.5-SBD / Water 7.5-SBD / Water	2.0065 N: 1.674 N: 1.675* N: 1.668* N: 1.671*	95Ott1
n.5-SBD = Poly(amidoamine) starburst dendrimers. *At pH 4. <i>a</i> (N) decreases slightly with increasing pH up to 9.			
$[C_{25}H_{33}N_2O_4]$ 	Synthesis described Benzene ESR / 293	2.0062 N: 1.54	96Dra1
$[C_{25}H_{48}NO_3]$ 	ESR / 278 to 318 <i>tert</i> -Butanol DMF 5CB (nematic phase) 5CB (isotropic phase) 6CB (nematic phase) 6CB (isotropic phase) 5CB = <i>p</i> - <i>n</i> -Pentyl- <i>p</i> '-cyanobiphenyl. 6CB = <i>p</i> - <i>n</i> -Hexyl- <i>p</i> '-cyano-biphenyl.	N: 1.593 N: 1.564 2.00975, 2.00725, 2.00265 ave 2.00653 N: 0.590, 0.600, 3.465 ave 1.552 N: 1.473 2.00978, 2.00763, 2.00273 ave 2.00671 N: 0.590, 0.600, 3.460 ave 1.550 N: 1.473	96Mor1, 97Mor1
$[C_{26}H_{32}N_3O_4]$ 	Synthesis described CH ₂ Cl ₂ ESR	N: 1.6	94Sos1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{26}H_{44}N_2O^+ClO_4^-]$ 	ESR / 298 Ethanol Water	N: 1.62 12H γ : 0.045 N: 1.71	88Dra2
$[C_{27}H_{34}N_3O_4]$ 	Synthesis described CH_2Cl_2 ESR	N: 1.6	94Sos1
$[C_{27}H_{56}N_2O^+I^-]$ 	ESR / 77 XAD-2 or XAD-4 macroreticular resin ESR / 298 Water Water – NaOH ESR / 298 TX-100(C) L62 reverse micelles/ <i>o</i> -xylene/water, $W = 0.4$ $W = 1.0$ $W = 2.0$ Radical adsorbed on different kinds of asbestos 1.5-SBD / Water 5.5-SBD / Water ESR / 298 Frozen membranes ESR / 180	N: 6.810 ($2A_z$) 1.626 1.655 N: 1.560 N: 1.555 N: 1.565 N: 1.560 2.0088, 2.0072, 2.0035 ave 2.0065 N: 0.68, 0.82, 3.54 ave 1.68 2.00980, 2.00642, 2.00232 iso .00618 N: 3.64 (A_{zz})	92Hwa1 97Zha1 98Cal1 98Vas1 96Ott1, 96Ott2 90Kri1

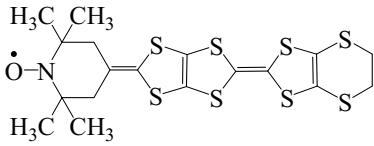
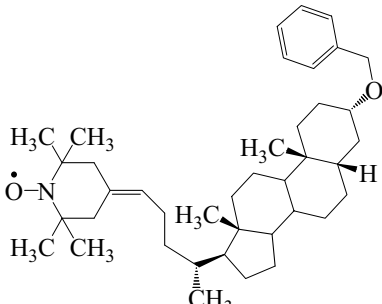
TX-100(C) = Polyoxyethylene[10]*tert*-octylphenyl ether (0.27 M in cyclohexane).
L62 = Triblock copolymer poly(ethylene oxide)-*block*-poly(propylene oxide)-*block*-poly(ethylene oxide) (EO)₆PO₃₆EO₆.
 $W = [H_2O] / [Surfactant]$.
n.5-SBD = Poly(amidoamine) starburst dendrimers.

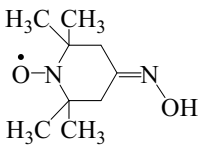
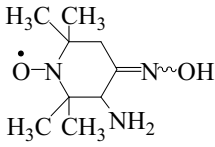
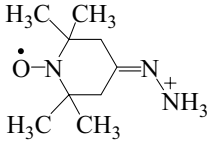
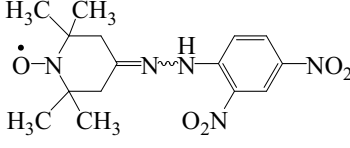
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₂₈H₅₁N₂O₅]</p> 	<p>Reaction of BTOS and triethyl phosphite in decane (350 K) CH₂Cl₂ ESR / 298</p> <p>Photolysis of ABS containing BTS ESR / 300</p> <p>BTOS = Bis [(2,2,6,6-tetramethylpiperidin-4-yl-1-oxyl) sebacate. BTS = Bis [(2,2,6,6-tetramethylpiperidin-4-yl) sebacate. ABS = Poly(acrylonitrile-butadiene-styrene).</p>	<p>N : 1.479</p> <p>2.0088, 2.0061, 2.0027 ave 2.0059 N: 0.630, 0.580, 3.360 ave 1.523</p>	<p>99Mar1</p> <p>99Mot1</p>
<p>[C₂₉H₃₆N₂O⁺ClO₄⁻]</p> 	<p>Synthesis described ESR / 298 Ethanol</p> <p>Water</p>	<p>N: 1.62 12H_γ: 0.045</p> <p>N: 1.71</p>	88Dra1
<p>[C₂₉H₃₈N₃O₄]</p> 	<p>Synthesis described CH₂Cl₂ ESR / 298</p>	N: 1.60	94Sos1
<p>[C₃₀H₃₆N₃O₆]</p> 	<p>Synthesis described Benzene ESR / 298</p>	<p>2.006 N: 1.53</p>	00Nak1
UV irradiation (λ = 365 nm) does not lead to any spectral change.			
<p>[C₃₀H₃₇N₄O₅]</p> 	<p>Synthesis described Benzene ESR / 298</p>	<p>2.007 N: 1.56</p>	00Nak1
UV irradiation (λ = 365 nm) does not lead to any spectral change.			

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{30}H_{43}N_{11}O_{15}P_2^+Cl^-]$ 	Synthesis described Phosphate buffer, pH 7.2 ESR / 298	N: 1.72	96Sei1
$[C_{33}H_{36}N_2O^+ClO_4^-]$ 	Synthesis described ESR / 298 Ethanol Water	N: 1.62 $12H_\gamma$: 0.045 N: 1.71	88Dra2
$[C_{33}H_{38}N_3O_4]$ 	Synthesis described CH_2Cl_2 ESR / 298	N: 1.60	94Sos1
$[C_{37}H_{62}NO_6]$ <p>R = H</p>	Synthesis described ESR / 298 Chloroform DPPC liposomes (multi-lamellar dispersion in phosphate buffer pH 7.2) ESR / 323	2.0060 N: 1.527 ₅ N: 1.526	99Kat3
DPPC = L- α -Dipalmitoylphosphatidylcholine.			
$[C_{42}H_{70}NO_7]$ <p>R = </p>	Synthesis described ESR / 298 Chloroform	2.0058 N: 1.581	99Kat3

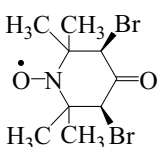
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{46}H_{94}N_2O^+Cl^-]$ 	Synthesis described Dimethyl(octadecyl)ammonium chloride ESR / < 308 308 < T < 317 $T > 317$	N: 2 6.5 N: 2 6.12, 2 ± 1.90 iso 1.65 [*] N: 2 5.26, 2 ± 2.08 iso 1.57 [*]	95Con1
* Gel L_β phase. * Lamellar L_α phase.			
$[C_{72}H_{21}N_2O_2]$ 	Synthesis described MTHF ESR – ENDOR / 298	2.0061 N: 1.538 6H $_\gamma$ (CH ₃ , ax): 0.045 2H $_\gamma$ (CH ₂): 0.032	97Are1
$[C_{72}H_{23}N_2O]$ 	Synthesis described MTHF ESR – ENDOR / 298	2.0061 N: 1.545 6H $_\gamma$ (CH ₃ , ax): 0.045 2H $_\gamma$ (CH ₂): 0.032	97Are1
X = N-methyl- 3,4-fulleropyrrolidin-2-yl			

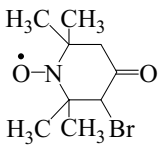
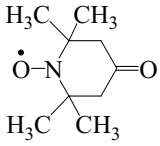
12.3.9.4 4-Vinyl- 2,2,6,6-tetramethylpiperidiny-*N*-oxyls

$[C_{18}H_{20}NOS_8]$ 	Synthesis described Benzene ESR	2.0061 N: 1.51	99Fuj2
$[C_{40}H_{62}NO_2]$ 	Synthesis described Chloroform ESR	2.0049 ₈ N: 1.575	92Ban1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
12.3.9.5 4-Imino-2,2,6,6-tetramethylpiperidinyl-N-oxyls			
$[C_9H_{17}N_2O_2]$ 	ESR / 298 Hexane Water Chloroform, ACN	2.0057 N: 1.461 N: 1.646 N: 1.52	90Saf1, 93Mal1
$[C_9H_{18}N_3O_2]$ 	Reaction of 4-hydroxy- imino-3-chloro-2,2,6,6- tetramethylpiperidine-1- oxyl with NH_3 in $CHCl_3$ Ethanol ESR / 298	N: 1.55	89Sen2
$[C_9H_{19}N_3O]^+$ 	Electrolysis of corres- ponding 4-hydrazono nitroxide ACN ESR / 298	N: 1.60	91Mar1
$[C_{15}H_{20}N_5O_5]$ 	ESR Water SDS micelles SDS saturated PEO CTAB CTAB saturated PEO DDAB bilayer vesicles	N: 1.716 N: 1.684 N: 1.594 N: 1.575 N: 1.606 N: 1.500 ^{♦,*} N: 1.540 ^{♦,♦} N: 1.450 ^{♥,♦} N: 1.520 ^{♥,♦}	88Wit1 88Buh1
SDS = Sodium dodecyl sulphate. CTAB = Cetyltrimethylammo- nium bromide. PEO = Poly(ethyleneoxide). DDAB = didodecyl- dimethylammnium bromide. [♦] 2000 Å vesicles. [♥] 3000 Å vesicles. [*] At 273 K. [♦] At 298 K.			

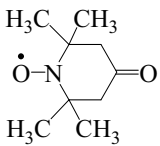
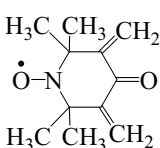
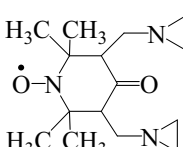
12.3.9.6 4-Carbonyl-2,2,6,6-tetramethylpiperidinyl- N -oxyls

$[C_9H_{14}Br_2NO_2]$ 	Synthesis described ESR	N: 1.60	90Bri1
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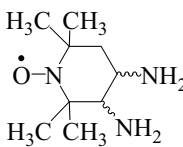
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_9H_{15}BrNO_2]$ 	Synthesis described ESR	N: 1.43	95Sos1
$[C_9H_{16}NO_2]$ 	ESR / 298 SDS micelles – water Canola oil ESR / 293 Pentane Hexane Toluene CH ₂ Cl ₂ DMF Chloroform Benzene Ethanol <i>n</i> -Butanol Water Cryptophane Acetone TR-ESR (CIDEF) ESR / 295 Sephadex – water, G-10 G-15 G-25 G-50 G-100 G-200 Dodecadeutero nitroxide Toluene ESR / 298 Perdeuterated nitroxide Rigid limit situation* ESR Sephadex G hydrogel microbeads (water contents increases with increasing G). Partition coefficients range from 0.29 (G-10) to 0.92 (G-200).	2.0056 N: 1.588 2.0061 ₇ N: 1.563 ₇ N: 1.35 N: 1.421 N: 1.42 N: 1.45 N: 1.474 N: 1.48 N: 1.50 N: 1.50 N: 1.509 N: 1.60 N: 1.46 2.0058 ₆ N: 1.65 N:1.591 N:1.592 N:1.598 N:1.604 N:1.606 N:1.608 12D _γ : 0.0020 ₅ 2.0098, 2.0066, 2.0022 ave 2.0062 N: 0.45, 0.49, 3.42 ave 1.453	88Wit1 95Smi1 90Saf1, 93Mal1, 95Bri1, 96Gar1, 96Mor1, 96Rad1 91Kaw1 92Win1 00Hwa1 97Ear1

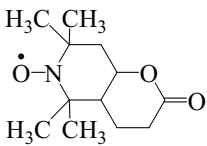
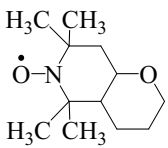
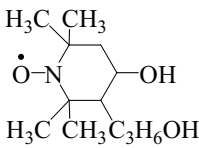
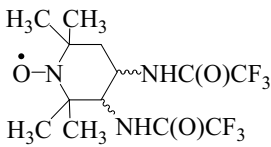
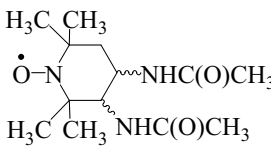
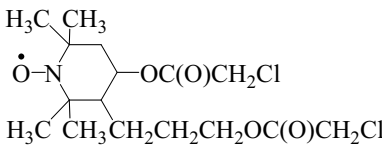
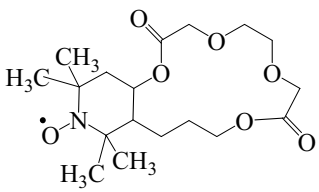
(continued)

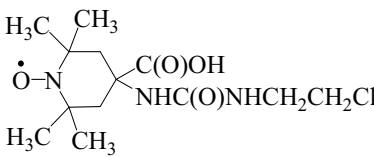
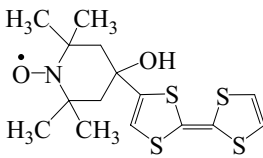
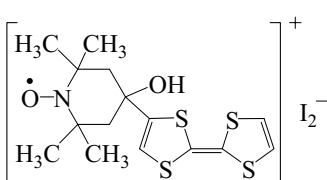
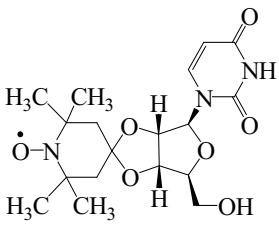
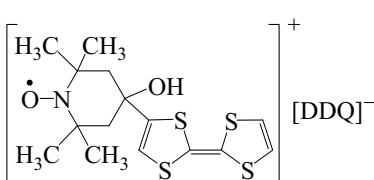
* Estimated by scaling results in different solvents.

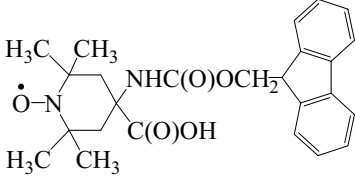
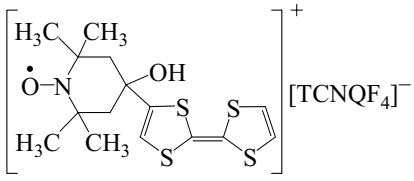
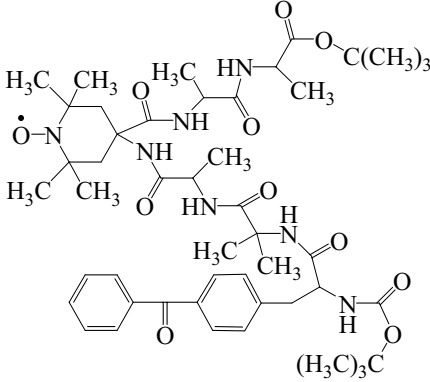
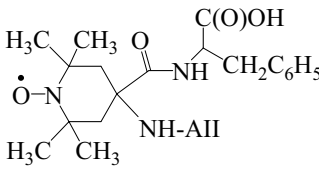
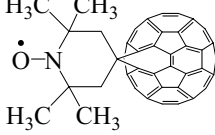
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₉H₁₆NO₂] (<i>continued</i>)</p> 	<p>Perdeuterated nitroxide ESR 5CB[♦]</p> <p>6CB[♦]</p> <p>7CB[♦]</p> <p>8CB[♦]</p> <p>Perdeuterated nitroxide 6OCB-8OCB ESR / 2D-ELDOR</p>	<p>2.00995, 2.00670, 2.00268 ave 2.00644 N: 0.495, 0.530, 3.381 ave 1.469</p> <p>2.00980, 2.00720, 2.00297 ave 2.00666 N: 0.495, 0.530, 3.381 ave 1.469</p> <p>2.00990, 2.00664, 2.00246 ave 2.00633 N: 0.495, 0.530, 3.381 ave 1.469</p> <p>2.00978, 2.00718, 2.00281 ave 2.00659 N: 0.495, 0.530, 3.381 ave 1.469</p> <p>2.0099, 2.0062, 2.00215 ave 2.00608 N: 0.56, 0.50, 3.365 ave 1.475</p>	<p>97Mor1</p> <p>89Nay1, 96Sas1</p>
<p>[C₁₁H₁₆NO₂]</p> 	Synthesis described Hexane ESR	N: 1.52	88Mal1
<p>[C₁₅H₂₆N₃O₂]</p> 	Synthesis described Benzene ESR	N: 1.52	88Mal1

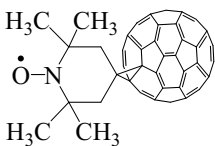
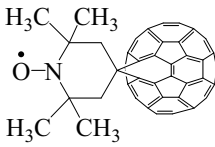
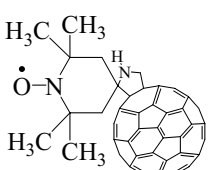
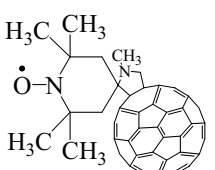
12.3.9.7 3,4-Disubstituted-2,2,6,6-tetramethylpiperidinyl-*N*-oxyls

<p>[C₉H₂₀N₃O]</p> 	Synthesis described Ethanol ESR	N: 1.59	89Sen2
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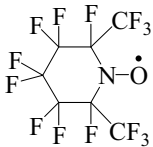
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{12}H_{20}NO_3]$ 	Synthesis described Benzene ESR	N: 1.505	93Zha2
$[C_{12}H_{22}NO_2]$ 	Synthesis described Benzene ESR	N: 1.56	93Zha2
$[C_{12}H_{24}NO_3]$ 	Synthesis described Benzene ESR	N: 1.525	93Zha2
$[C_{13}H_{18}F_6N_3O_3]$ 	Synthesis described Ethanol ESR	N: 1.60	89Sen2
$[C_{13}H_{24}N_3O_3]$ 	Synthesis described Ethanol ESR	N: 1.60	89Sen2
$[C_{16}H_{26}Cl_2NO_5]$ 	Synthesis described Benzene ESR	N: 1.55	93Zha2
$[C_{18}H_{30}NO_7]$ 	Synthesis described Benzene ESR	N: 1.54	93Zha2

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{23}ClN_3O_4]$ 	Synthesis described Benzene ESR / 298	N: 1.57	93Sen2
$[C_{15}H_{20}NO_2S_4]$ 	Synthesis described Neat compound (solid state) ESR / 298 Benzene ESR	2.0064 2.007 N: 1.53	95Nak1
$[C_{15}H_{20}I_2NO_2S_4]$ 	Synthesis described Neat compound (solid state) ESR / 298 Benzene ESR ♥ Spin exchange.	2.0070 2.007 N: 0.76♥	95Nak1
$[C_{18}H_{26}N_3O_7]$ 	Synthesis described Water, pH 7.0 ESR From the microwave frequency (9.81 GHz) and central field (0.347058 T) values reported the inconsistently high <i>g</i> -value of 2.019 is obtained.	N: 1.68	91Ale1
$[C_{23}H_{20}Cl_2N_3O_4S_4]$  DDQ = 2,3-dichloro-3,4-dicyano-1,4-benzoquinone	Synthesis described Neat compound (solid state) ESR / 298	2.0068	96Nak1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{25}H_{29}N_2O_5]$ 	Synthesis described DMF ESR	N: ca. 1.54	93Mar1
$[C_{27}H_{20}F_4N_5O_2S_4]$  TCNQF ₄ = Tetrafluoro-tetracyanoquinodimethane	Synthesis described Neat compound (solid state) ESR / 298	2.0050	95Nak1
$[C_{48}H_{70}N_7O_{11}]$ 	Chloroform ESR / 260	N: 1.565	00Cor1
$[C_{55}H_{81}N_{14}O_{13}]$ 	Synthesis described 0.02 M Ammonium acetate, pH 5.0 ESR	N: ca. 1.67	93Mar1
AII = Asp-Arg-Val-Tyr-Ile-His-Pro-Phe.			
$[C_{69}H_{16}NO]$ 	Toluene ESR – ENDOR / 300	N: 1.5 12H _γ (CH ₃): 0.0215 4H _γ (CH ₂): 0.0179	00Cer1

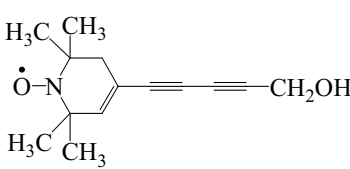
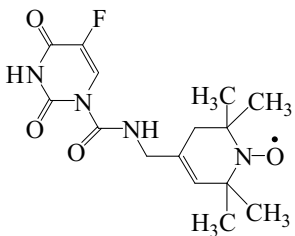
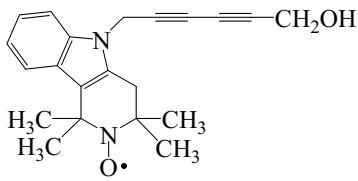
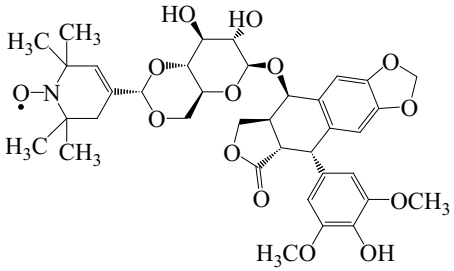
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₆₉ H ₁₆ NO] 	Toluene ESR – ENDOR / 300	2.0061 N: 1.546 12H _γ (CH ₃): 0.0195 4H _γ (CH ₂): 0.0375	00Cer1
Reduction with sodium metal leads to biradical anion characterized by <i>g</i> = 2.0029 and <i>a_N</i> = 0.784.			
[C ₆₉ H ₁₈ NO] 	Synthesis described MTHF ESR / 293	2.0061 N: 1.498 12H _γ (CH ₃): 0.021 4H _γ (CH ₂): 0.017	97Are1
[C ₇₀ H ₁₉ N ₂ O] 	Synthesis described Solid matrix ESR / 45	2.0022, 2.0066, 2.0101 ave: 2.0063 N: 92, 14, 14 ave: 40*	97Miz1, 99Miz1
	ESR / 300 MTHF	2.0061 N: 1.515	97Are1
	Toluene	2.0063 N: 42.6*	99Miz2
	* Values in MHz.		
[C ₇₁ H ₂₁ N ₂ O] 	Synthesis described MTHF ESR / 293	2.0061 N: 1.530	97Are1
Reduction with sodium metal leads to biradical anion characterized by <i>g</i> = 2.0030 and <i>a_N</i> = 0.765.			

12.3.9.9 Decasubstituted piperidinyln-*N*-oxyls

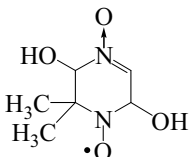
[C ₇ F ₁₄ NO] 	Photochemical oxidation of perfluoro[N-fluoro- 2(e),6(e)-dimethylpiperi- dine Perfluoropentane ESR / 183	2.0078 N: 1.01 2F _β : 3.00 2F _γ : 0.35	95Nic1
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Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
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12.3.10 Tetrahydropyridinyl-*N*-oxyls

<p>[C₁₄H₁₈NO₂]</p> 	<p>Synthesis described Toluene ESR / 294</p> <p>Neat solid ESR / 294</p>	<p>2.011 N: 1.41</p> <p>2.0069</p>	<p>91Wil1, 91Wil2</p>
<p>[C₁₅H₂₀FN₄O₄]</p> 	<p>Synthesis described Benzene ESR / 298</p>	<p>N: 1.51</p>	<p>89Sen1</p>
<p>[C₂₁H₂₃N₂O₂]</p> 	<p>Synthesis described Toluene ESR / 293</p>	<p>N: ~ 1.50</p>	<p>91Laz1</p>
<p>[C₃₇H₄₄NO₁₄]</p> 	<p>Synthesis described Chloroform ESR</p>	<p>2.0037 N: 1.674</p>	<p>97Lu1</p>

12.3.11 Tetrahydropyrazine-4-oxide-1-oxyls

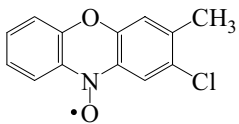
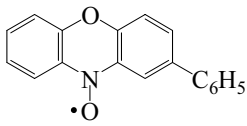
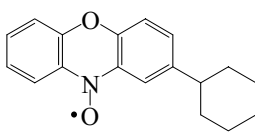
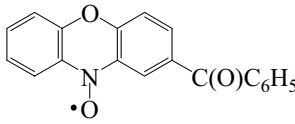
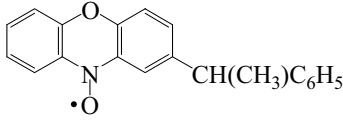
<p>[C₆H₁₁N₂O₄]</p> 	<p>Photolysis of corresponding 2,3-dihydropyrazine and H₂O₂ Water ESR / 298</p>	<p>N: 1.53 H_β: 1.83</p>	<p>96Dul1</p>
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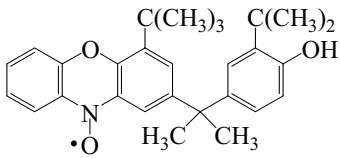
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_7H_{13}N_2O_4]$ 	Photolysis of corresponding 2,3-dihydropyrazine and H_2O_2 Water ESR / 298	N: 1.54 H_β : 1.99	96Dul1
$[C_7H_{13}N_2O_4]$ 	Photolysis of corresponding 2,3-dihydropyrazine, methanol and H_2O_2 Water ESR / 298	N: 1.70 H_β : 2.00	96Dul1
$[C_8H_{15}N_2O_4]$ 	Photolysis of corresponding 2,3-dihydropyrazine, methanol and H_2O_2 Water ESR / 298	N: 1.53 H_β : 1.12	96Dul1
$[C_8H_{15}N_2O_4]$ 	Photolysis of corresponding 2,3-dihydropyrazine and H_2O_2 Water ESR / 298	N: 1.50	96Dul1
$[C_9H_{17}N_2O_4]$ 	Photolysis of corresponding 2,3-dihydropyrazine, methanol and H_2O_2 Water ESR / 298	N: 1.46	96Dul1
$[C_{12}H_{15}N_2O_4]$ 	Photolysis of corresponding 2,3-dihydropyrazine and H_2O_2 Water ESR / 298	N: 1.54 H_β : 0.93	96Dul1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{17}N_2O_4]$ 	Photolysis of corresponding 2,3-dihydropyrazine, methanol and H_2O_2 Water ESR / 298	N: 1.51 H_β : 0.92	96Dul1

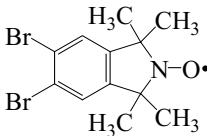
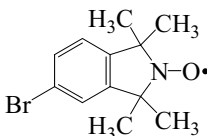
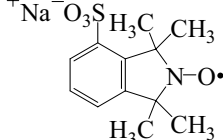
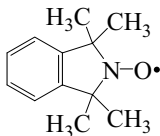
12.3.12 Phenoxazilinyln- N -oxyls and phenothiazilinyln- N -oxyls

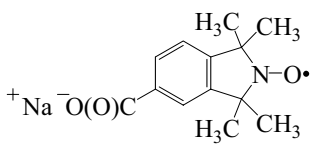
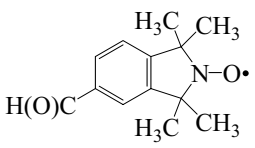
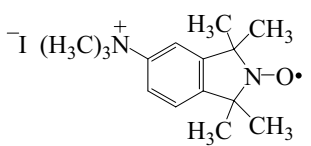
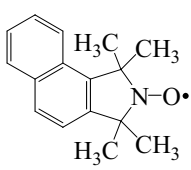
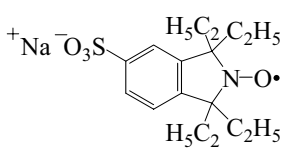
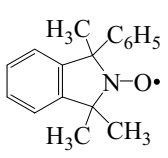
$[C_{12}H_7ClNO_2]$ 	Reaction of <i>p</i> -chloro phenol and NB with PbO_2 Benzene ESR	N: 0.930 $3H(H_{4,6,8})$: 0.042 $H(H_1)$: 0.231* $H(H_3)$: 0.240* $H(H_7)$: 0.250* $H(H_9)$: 0.259*	94Ome1
* Couplings may be exchanged.			
$[C_{12}H_7ClNO_2]$ 	Reaction of <i>o</i> -chloro phenol and NB with PbO_2 Benzene ESR	N: 0.958 $3H(H_2, 6, 8)$: 0.053 $H(H_1)$: 0.234* $H(H_3)$: 0.244* $H(H_7)$: 0.254* $H(H_9)$: 0.264*	94Ome1
* Couplings may be exchanged.			
$[C_{12}H_7N_2O_4]$ 	Reaction of NB, <i>p</i> -nitro phenol and PbO_2 Benzene ESR	N: 0.890 $N(NO_2)$: 0.008 $H(H_4)$: 0.030* $H(H_6)$: 0.046* $H(H_4)$: 0.050* $H(H_1)$: 0.203* $H(H_3)$: 0.232* $H(H_7)$: 0.248* $H(H_9)$: 0.268*	94Ome1
** Couplings may be exchanged.			
$[C_{12}H_8NOS]$ 	Oxidation of phenothiazine with CPBA Benzene ESR	2.0055 N: 0.923 $4H(H_{2,4,6,8})$: 0.059 $4H(H_{1,3,7,9})$: 0.223	99Luc1

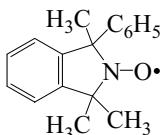
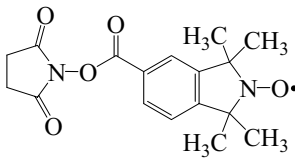
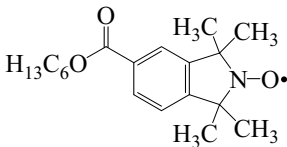
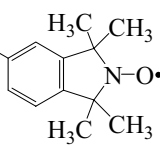
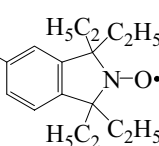
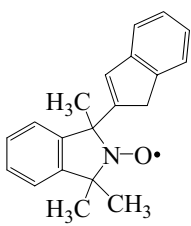
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₁₃ H ₉ ClNO ₂] 	Reaction of 3-methyl-4-chlorophenol and NB with PbO ₂ Benzene ESR	N: 0.945 3H(H2, 6,8): 0.050 H(H1): 0.227* H(H3): 0.237* H(H7): 0.256* H(H9): 0.270*	94Ome1
* Couplings may be exchanged.			
[C ₁₈ H ₁₂ NO ₂] 	Reaction of 4-hydroxybiphenyl and NB with PbO ₂ Benzene ESR	N: 0.900 3H(H2, 6,8): 0.044 2H(H1,3): 0.242* 2H(H7,9): 0.257*	94Ome1
* Couplings may be exchanged.			
[C ₁₈ H ₁₈ NO ₂] 	Reaction of 4-cyclohexylphenol and NB with PbO ₂ Benzene ESR	N: 0.920 3H(H2, 6,8): 0.048 H(Cyclohexyl): 0.022 H(H1): 0.227* H(H3): 0.237* H(H7): 0.248* H(H9): 0.258*	94Ome1
* Couplings may be exchanged.			
[C ₁₉ H ₁₂ NO ₃] 	Reaction of 4-hydroxybenzophenone and NB with PbO ₂ Benzene ESR	N: 0.893 H(H4): 0.036* H(H6): 0.048* H(H8): 0.050* H(H1): 0.215* H(H3): 0.239* H(H7): 0.248* H(H9): 0.252*	94Ome1
*. Couplings may be exchanged.			
[C ₂₀ H ₁₆ NO ₂] 	Reaction of 4-hydroxybenzophenone and NB with PbO ₂ Benzene ESR	N: 0.930 3H(H4,6,8): 0.046 H(CH): 0.025 H(H1): 0.226* H(H3): 0.235* H(H7): 0.247* H(H9): 0.257*	94Ome1
* Couplings may be exchanged.			

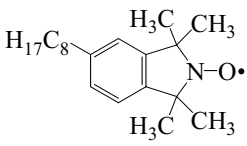
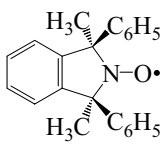
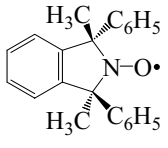
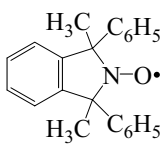
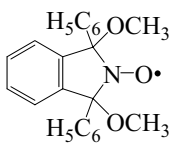
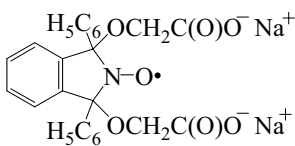
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{29}H_{34}NO_3]$ 	Reaction of 2,2-bis(3- <i>tert</i> -butyl-4-hydroxyphenyl)propane and NB with PbO_2 Benzene ESR	N: 0.930 2H(H6,8): 0.047 H(H1): 0.212* 3H(H3,7,9): 0.246*	94Ome1
* Couplings may be exchanged.			

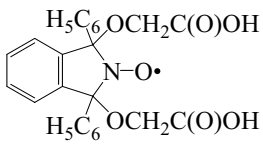
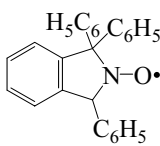
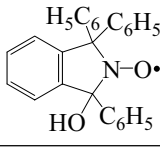
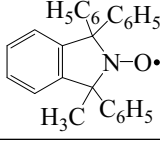
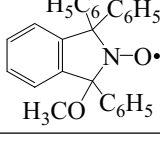
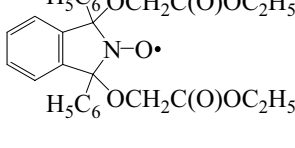
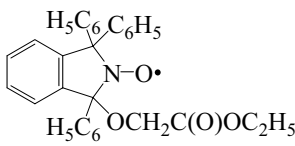
12.3.13 Isoindolinyl-*N*-oxyls

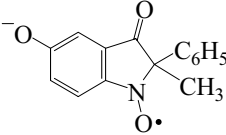
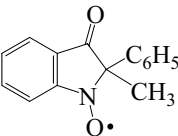
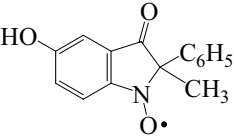
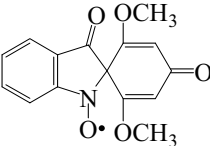
$[C_{12}H_{14}Br_2NO]$ 	Oxidation of 2,5,6-tribromo-1,1,3,3-tetramethylisoindoline with H_2O_2 and $Na_2WO_4 \cdot 2H_2O$ Water ESR	2.0058 N: 1.4431	99Mic1
$[C_{12}H_{15}BrNO]$ 	Oxidation of 2,5-dibromo-1,1,3,3-tetramethylisoindoline with H_2O_2 and $Na_2WO_4 \cdot 2H_2O$ Water ESR	2.0058 N: 1.4428	99Mic1
$[C_{12}H_{15}NO_4S^- Na^+]$ 	Synthesis described Water – Sucrose ESR / 291	Rotational correlation times have been measured for sucrose solutions of different concentration	99Bel1
$[C_{12}H_{16}NO]$ 	Toluene solid solution ESR / 138 Toluene ESR / 218 Photolysis of 1,1,3,3-tetramethyl-2-indanone followed by purging with NO/NO_2 ACN ESR / 287	2.0015, 2.0052, 2.0082 ave 2.0049 N: 3.38, 0.439, 0.500 ave 1.44 [^{15}N : 2.01] 2.0054 N: 1.410 12H $_{\gamma}$: 0.0243 4 $^{13}C_{\beta}$: 0.640 2.0058 N: 1.452 [^{15}N : 2.031] 4 $^{13}C_{\beta}$: 0.661 2 $^{13}C_{\beta}$: 0.551	93Bol1, 97Lan1 93Bol1 94Kor1
Nearly identical spectra for the d_{12} derivative.			

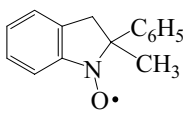
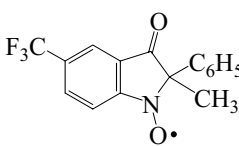
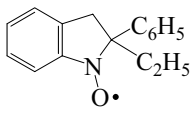
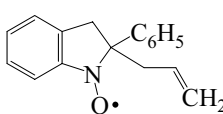
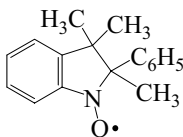
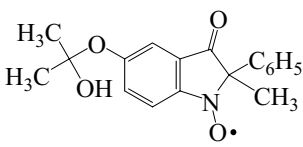
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{13}H_{15}NO_3^- Na^+]$ 	Photolysis of 1,1,3,3-tetramethyl-2-indanone 6-sodium carboxylate followed by purging with NO/NO ₂ Water- <i>d</i> ₂ ESR / 291 Oxidation of corresponding isoindoline with H ₂ O ₂ and Na ₂ WO ₄ ·2H ₂ O ESR Chloroform <i>n</i> -Octanol	2.0054 ₈ N: 1.600 ₅ 4 ¹³ C _β : 0.661 2.0058 ₅ N: 1.445 N: 1.478	94Kor1, 99Bot1 98Rei1, 99Bot1, 00Bot1
$[C_{13}H_{16}NO_2]$ 	Synthesis described Chloroform ESR / 293 Toluene- <i>d</i> ₈ ESR / 130	2.0058 N: 1.456 2.00909, 2.00616, 2.00220 ave 2.0058 ₁ N: 0.550, 0.414, 3.271 ave 1.528	00Bot1
$[C_{15}H_{24}N_2O^+ I^-]$ 	Synthesis described Water ESR	2.00562 N: 1.583 N(N ⁺): 0.0204	98Rei1
$[C_{16}H_{18}NO]$ 	Photolysis of 1,1,3,3-tetramethyl-5,6-benz-2-indanone followed by purging with NO/NO ₂ <i>n</i> -Hexane ESR / 294	2.0061 ₀ N: 1.375 ₅	94Kor1
$[C_{16}H_{23}NO_4S^- Na^+]$ 	Synthesis described Water ESR	N: 1.546	00Mar1
$[C_{17}H_{18}NO]$  (continued)	Photolysis of 1-phenyl-1,3,3-trimethyl-2-indanone followed by purging with NO/NO ₂ <i>n</i> -Hexane ESR / 293	2.0060 ₆ N: 1.600 ₅ 4 ¹³ C _β : 0.661	94Kor1

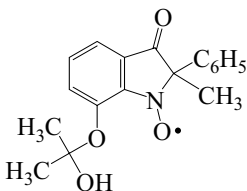
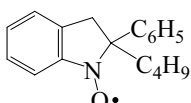
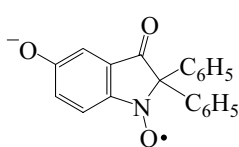
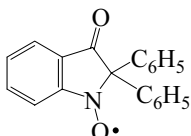
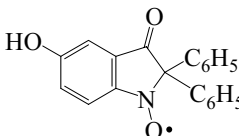
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₇H₁₈NO] (<i>continued</i>)</p> 	<p>Photolysis of 1-phenyl-1,3,3-trimethyl-2-indanone followed by purging with NO/NO₂</p> <p>ACN-<i>d</i>₃</p> <p>ESR / 292</p>	<p>2.0059₇</p> <p>N: 1.40₅</p>	94Kor1
<p>[C₁₇H₁₉N₂O₅]</p> 	<p>Synthesis described</p> <p>Chloroform</p> <p>ESR</p>	<p>2.0059</p> <p>N: 1.456</p>	00Bot1
<p>[C₁₉H₂₈NO₃]</p> 	<p>Synthesis described</p> <p>Chloroform</p> <p>ESR</p>	<p>2.0058</p> <p>N: 1.470</p>	00Bot1
<p>[C₁₉H₃₂N₂O⁺Cl⁻]</p> <p>⁻Cl (H₅C₂)₃N⁺H₂C-</p> 	<p>Photolysis of 5-((triethylammonio)methyl)1,1,3,3-tetramethyl-2-indanone chloride followed by purging with NO/NO₂</p> <p>ACN-<i>d</i>₃</p> <p>ESR / 292</p>	<p>2.0061₁</p> <p>N: 1.367₅</p>	94Kor1
<p>[C₁₉H₃₂N₂O⁺I⁻]</p> <p>⁻I (H₃C)₃N⁺</p> 	<p>Synthesis described</p> <p>Water</p> <p>ESR</p>	<p>N: 1.546</p>	00Mar1
<p>[C₂₀H₂₀NO]</p> 	<p>Photolysis of 1-(2-indenyl)-1,3,3-trimethyl-2-indanone chloride followed by purging with NO/NO₂</p> <p>ACN-<i>d</i>₃</p> <p>ESR / 293</p> <p><i>n</i>-Hexane</p> <p>ESR / 294</p>	<p>2.0060₀</p> <p>N: 1.402₂</p> <p>4¹³C_β: 0.66₁</p> <p>2¹³C_β: 0.538₅</p> <p>2.0060₅</p> <p>N: 1.368₅</p> <p>4¹³C_β: 0.66₁</p> <p>2¹³C_β: 0.54₃</p>	94Kor1

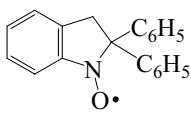
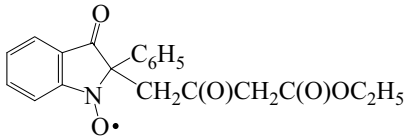
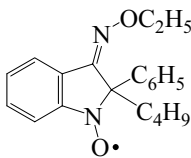
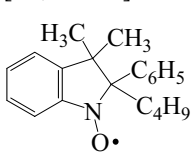
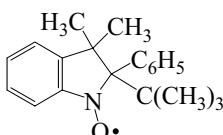
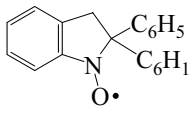
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₂₀H₃₂NO]</p> 	<p>Toluene ESR / 140</p> <p>ESR / 210</p> <p>5(<i>n</i>-Octyl)naphthalene ESR / 140</p>	<p>2.0081, 2.0057, 2.0020 ave 2.0053 N: 0.50, 0.44, 3.38 ave 1.44</p> <p>2.0050 N: 1.41</p> <p>2.00911, 2.00264, 2.00230 ave 2.00588 N: 0.47, 0.45, 3.31 ave 1.41</p>	97Bri1
<p>[C₂₂H₂₀NO]</p>   	<p>Oxidation of <i>meso</i>-2-benzyl-1,3-dimethyl-1,3-diphenylisoindoline CH₂Cl₂ ESR</p> <p>Synthesis described CH₂Cl₂ ESR</p> <p>Photolysis of 1,3-diphenyl-1,3-dimethylindan-2-one followed by purging with NO ACN ESR / 298</p>	<p>N: 1.422</p> <p>1.466₃</p> <p><i>Diastereomer I</i> 2.0060₂ N: 1.42₂ [¹⁵N: 1.99₅] 4¹³C_β: 0.54 <i>Diastereomer II</i> 2.0059₃ N: 1.40₅</p>	98Bra1 96Pau1
<p>[C₂₂H₂₀NO₃]</p> 	<p>Photolysis of <i>meso</i>-1,3-dimethoxy-1,3-diphenylindan-2-one followed by purging with NO ESR / 298 ACN Benzene</p>	<p>2.0062₉ N: 1.18₅ [¹⁵N: 1.66] 4¹³C_β: 0.43</p> <p>2.0063₄ N: 1.15₀ [¹⁵N: 1.61] 4¹³C_β: 0.42</p>	96Pau1
<p>[C₂₄H₁₈NO₇²⁻·2Na⁺]</p> 	<p>Photolysis of disodium <i>meso</i>-1,3-bis(carboxymethoxy)-1,3-diphenylindan-2-one followed by purging with NO Buffer, pH 7.4 ESR / 298</p>	<p>2.0060₃ N: 1.29₂ [¹⁵N: 1.65] 2¹³C_β: 0.40 2¹³C_β: 0.42</p>	96Pau1

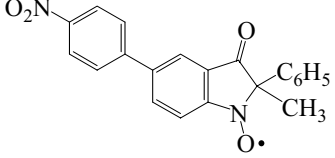
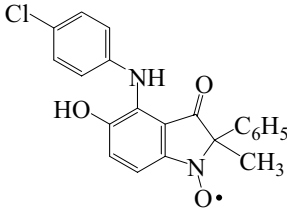
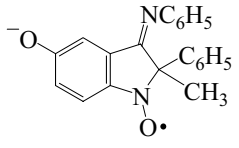
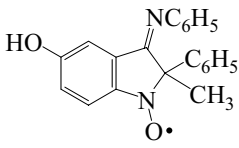
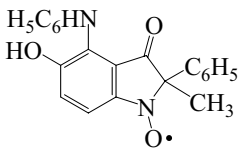
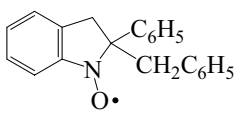
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{24}H_{20}NO_7]$ 	Photolysis of <i>meso</i> -1,3-bis(carboxymethoxy)-1,3-diphenylindan-2-one followed by purging with NO ACN ESR / 298	2.0062 ₇ N: 1.17 ₃ [15N: 1.65] 4 ¹³ C _β : 0.39	96Pau1
$[C_{26}H_{20}NO]$ 	Photolysis of 1,1,3-triphenylindan-2-one followed by purging with NO Benzene ESR / 298	2.0061 ₅ N: 1.38 ₅ 2 ¹³ C _β : 0.56 3 ¹³ C _β : 0.68	96Pau1
$[C_{26}H_{20}NO_2]$ 	Photolysis of 1-hydroxy-1,3,3-triphenylindan-2-one followed by purging with NO ACN ESR / 298	2.0061 ₆ N: 1.26 ₇	96Pau1
$[C_{27}H_{22}NO]$ 	Photolysis of 1-methyl-1,3,3-triphenylindan-2-one followed by purging with NO Benzene ESR / 298	2.0060 ₆ N: 1.38 ₀ [15N: 1.94] 3 ¹³ C _β : 0.53 2 ¹³ C _β : 0.72	96Pau1
$[C_{27}H_{22}NO_2]$ 	Photolysis of 1-methoxy-1,3,3-triphenylindan-2-one followed by purging with NO Benzene ESR / 298	2.0061 ₅ N: 1.26 ₇ [15N: 1.79] 3 ¹³ C _β : 0.52 1 ¹³ C _β : 0.72	96Pau1
$[C_{28}H_{28}NO_7]$ 	Photolysis of <i>meso</i> -1,3-bis[(ethoxycarbonyl)methoxyl]-1,3-diphenylindan-2-one followed by purging with NO ACN ESR / 298	2.0063 ₃ N: 1.16 ₈ [15N: 1.62] 2 ¹³ C _β : 0.40 2 ¹³ C _β : 0.41	96Pau1
$[C_{30}H_{26}NO_4]$ 	Photolysis of 1-[(ethoxycarbonyl)methoxyl]-1,3,3-diphenylindan-2-one followed by purging with NO ACN ESR / 298	2.0061 ₅ N: 1.25 ₂ [15N: 1.790] 3 ¹³ C _β : 0.52 1 ¹³ C _β : 0.63	96Pau1

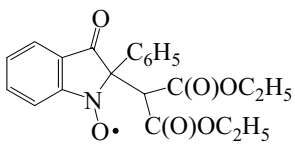
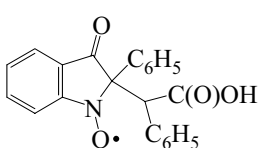
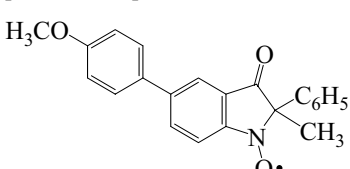
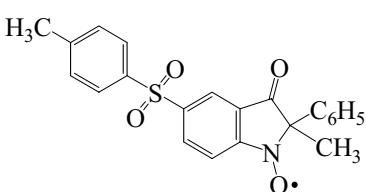
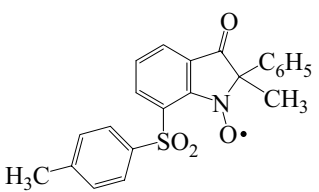
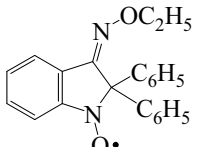
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
12.3.14 Indolinyln-<i>N</i>-oxyls, indolinonyln-<i>N</i>-oxyls and indoliminyl-<i>N</i>-oxyls			
$[C_{15}H_{11}NO_3]^-$ 	Electrochemical reduction of 2-phenyl-2-methylindole-3,5-dione- <i>N</i> -oxide DMSO (DMF) ESR / 298	2.0056 N: 0.995 H(H4): 0.05 H(H6): 0.120 H(H7): 0.217	93Car1
$[C_{15}H_{12}NO_2]$ 	Mixed crystals of 2-methyl-2-phenyl-1,3-indandione and 2-methyl-2-phenylindolin-3-one <i>N</i> -oxyl Single crystal ESR – ENDOR / 293	2.0071, 2.0059, 2.0002 iso 2.0044 N: 8.2, 6.0, 69.4 iso 27.87* H(H4): 0.23, 3.59, 2.33 iso 2.05 H(H5): -4.13, -13.8, -8.77 iso -8.90 H(H6): 0.90, 4.50, 3.03 iso 2.81 H(H7): -5.62, -8.83, -10.18 iso -8.21	91Man1
	Glassy toluene solution ESR – ENDOR / 105	H(H4): 2.9* H(H5): -9.0 H(H6): 2.9 H(H7): -8.4	87Bru2
* Values in MHz. * Signs based on spin density distribution assumed from calculations.			
$[C_{15}H_{12}NO_3]$ 	Electrochemical reduction of 2-phenyl-2-methylindole-3,5-dione- <i>N</i> -oxide DMF containing 2,4-dimethylphenol ESR / 298	2.0055 N: 1.015 H(H4): 0.067 H(H6): 0.053 H(H7): 0.240	93Car1
$[C_{15}H_{12}NO_5]$ 	Oxidation of corresponding hydroxylamine Benzene ESR / 298	N: 0.965 2H(H4',6'): 0.060 2H(H4,6): 0.10 2H(H5,7): 0.316	92For1
Linewidth alternation effects observed.			

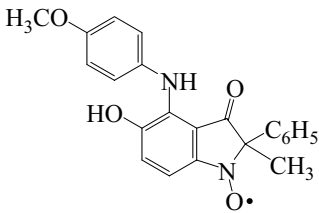
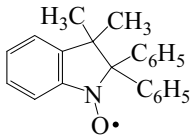
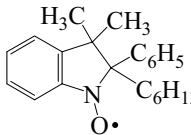
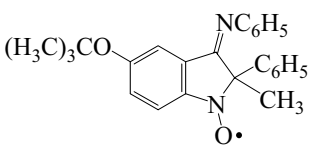
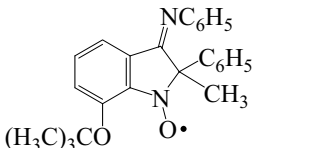
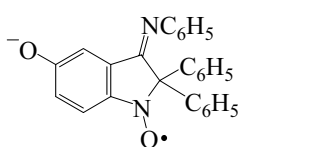
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₅H₁₄NO]</p> 	<p>Reaction of CH₃MgBr and 1-hydroxy-2-phenyl indole followed by PbO₂ oxidation Chloroform ESR / 298</p>	<p>N: 1.070 3H_γ(CH₃): 0.022 H_γ(H3): 2.66 H_γ(H3): 3.55 H(H4): 0.106 H(H5): 0.335 H(H6): 0.089 H(H7): 0.319</p>	98Bru1
<p>[C₁₆H₁₁F₃NO₂]</p> 	<p>Reaction of methyl(tri-fluoromethyl)dioxirane with 2-methyl-2-phenyl-indolinone <i>N</i>-oxyl Chloroform ESR / 298</p>	<p>N: 0.885 3H_γ(CH₃): 0.019 H(H4): 0.100 3F: 0.393 H(H6): 0.100 H(H7): 0.283</p>	98Din1
<p>[C₁₆H₁₆NO]</p> 	<p>Reaction of C₂H₅MgBr and 1-hydroxy-2-phenyl indole followed by PbO₂ oxidation Chloroform ESR / 298</p>	<p>N: 1.062 3H_γ(CH₃): 0.027 H_γ(H3): 2.62 H_γ(H3): 3.39 H(H4): 0.108 H(H5): 0.341 H(H6): 0.086 H(H7): 0.341</p>	98Bru1
<p>[C₁₇H₁₆NO]</p> 	<p>Reaction of C₃H₅MgBr and 1-hydroxy-2-phenyl indole followed by PbO₂ oxidation Chloroform ESR / 298</p>	<p>N: 1.059 2H_γ(C₃H₅): 0.031 H_γ(H3): 2.61 H_γ(H3): 3.50 H(H4): 0.126 H(H5): 0.334 H(H6): 0.079 H(H7): 0.319</p>	98Bru1
<p>[C₁₇H₁₈NO]</p> 	<p>Synthesis described Chloroform ESR / 298</p>	<p>N: 1.100 3H_γ(CH₃): 0.016 H(H4): 0.091 H(H5): 0.339 H(H6): 0.100 H(H7): 0.329</p>	99Tom1
<p>[C₁₈H₁₈NO₄]</p> 	<p>Reaction of dimethyldioxirane with 2-methyl-2-phenyl-indolinone <i>N</i>-oxyl Chloroform ESR / 298</p>	<p>N: 0.918 3H_γ(CH₃): 0.018 H(H4): 0.100 H(H6): 0.100 H(H7): 0.283</p>	98Din1

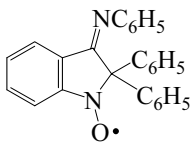
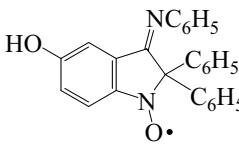
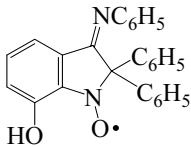
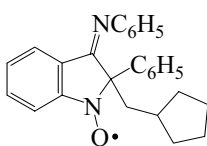
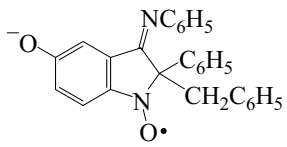
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
[C ₁₈ H ₁₈ NO ₄] 	Reaction of dimethyldioxirane with 2-methyl-2-phenyl-indolinone <i>N</i> -oxyl Chloroform ESR / 298	N: 0.903 3H _γ (CH ₃): 0.018 H(H4): 0.100 H(H5): 0.320 H(H6): 0.100	98Din1
[C ₁₈ H ₂₀ NO] 	Reaction of <i>n</i> -butyllithium and 1-hydroxy-2-phenylindole followed by PbO ₂ oxidation Chloroform ESR / 298	N: 1.058 H _γ (C ₄ H ₉): 0.024 H _γ (H3): 2.50 H _γ (H3): 3.49 H(H4): 0.114 H(H5): 0.332 H(H6): 0.077 H(H7): 0.331	98Bru1
[C ₂₀ H ₁₃ NO ₃] [−] 	Electrochemical reduction of 2,2-diphenylindole-3,5-dione- <i>N</i> -oxide DMSO (DMF) ESR / 298	2.0056 N: 1.000 H(H4): 0.050 H(H6): 0.138 H(H7): 0.215	93Car1
[C ₂₀ H ₁₄ NO ₂] 	Glassy toluene solution ESR – ENDOR / 105 Benzene ESR / 298	2.008, 2.005, 2.002 ave 2.005 N: 11, 11, 65 ave 29,0 ^{*,♦} H(H4): 2.8 H(H5): −8.9 H(H6): 2.8 H(H7): −8.3 N: 0.93 2H(H4,6): 0.10 2H(H5,7): 0.32	87Bru2 87Alb1
* Values in MHz. ♦ Signs based on spin density distribution assumed from calculations.			
[C ₂₀ H ₁₄ NO ₃] 	Electrochemical reduction of 2,2-diphenylindole-3,5-dione- <i>N</i> -oxide DMF containing 2,4-dimethylphenol ESR / 298	2.0054 N: 1.014 H(H4): 0.070 H(H6): 0.054 H(H7): 0.240	93Car1

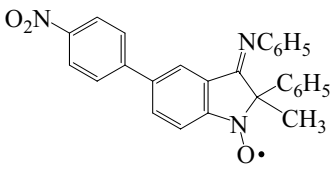
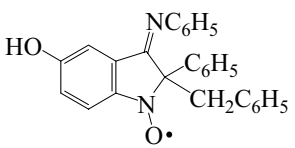
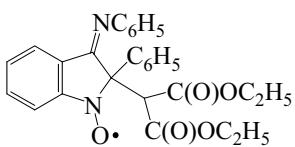
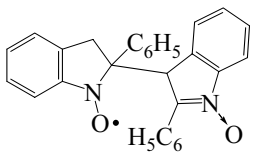
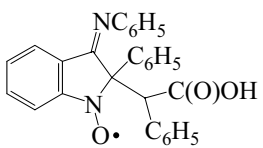
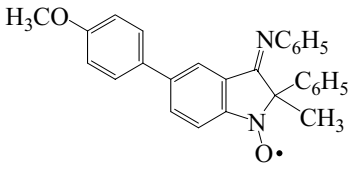
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{20}H_{16}NO]$ 	Reaction of phenyl-lithium and 1-hydroxy-2-phenylindole followed by PbO_2 oxidation Chloroform ESR / 298	N: 1.071 $2H_\gamma(H3)$: 2.70 $H(H4)$: 0.094 $H(H5)$: 0.345 $H(H6)$: 0.097 $H(H7)$: 0.326	98Bru1
$[C_{20}H_{18}NO_5]$ 	Reaction of 2-phenylindole-3-one with ethyl acetoacetate anion and oxidation with CPBA Chloroform ESR / 298	N: 0.916 $H_\gamma(CH_2)$: 0.028 $H_\gamma(CH_2)$: 0.042 $H(H4)$: 0.099 $H(H5)$: 0.292 $H(H6)$: 0.092 $H(H7)$: 0.278	99Tom2
$[C_{20}H_{23}NO_2]$ 	Synthesis described ESR / 298	N: 0.885 N_γ : 0.076 $H(H4)$: 0.103 [♥] $H(H5)$: 0.313 $H(H6)$: 0.098 $H(H7)$: 0.297	00Dam1
♥ Incorrect assignment in the original paper.			
$[C_{20}H_{24}NO]$ 	Synthesis described Chloroform ESR / 298	N: 1.094 $H(H4)$: 0.086 $H(H5)$: 0.341 $H(H6)$: 0.108 $H(H7)$: 0.319	99Tom1
$[C_{20}H_{24}NO]$ 	Synthesis described Chloroform ESR / 298	N: 1.058 H : 0.022 $H(H4)$: 0.077 $H(H5)$: 0.332 $H(H6)$: 0.114 $H(H7)$: 0.331	99Tom1
$[C_{20}H_{24}NO]$ 	Reaction of <i>n</i> -hexyl-lithium and 1-hydroxy-2-phenylindole followed by PbO_2 oxidation Chloroform ESR / 298	N: 1.062 $H_\gamma(C_6H_{13})$: 0.017 $H_\gamma(H3)$: 2.61 $H_\gamma(H3)$: 3.58 $H(H4)$: 0.100 $H(H5)$: 0.325 $H(H6)$: 0.098 $H(H7)$: 0.326	98Bru1

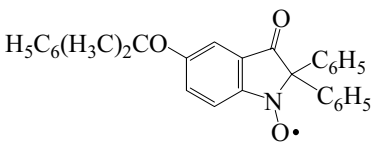
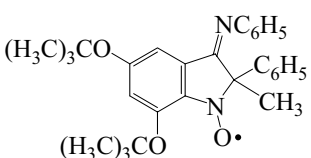
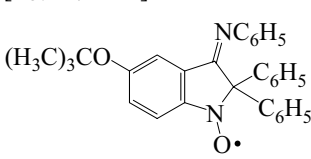
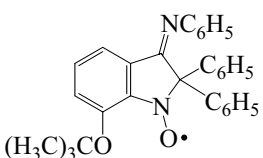
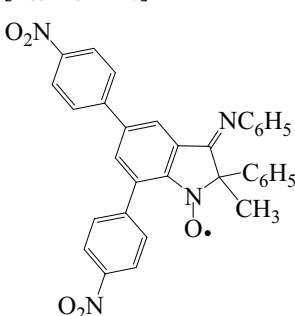
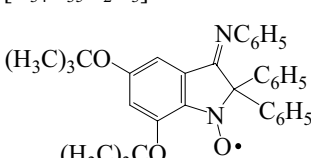
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{21}H_{15}N_2O_4]$ 	Reaction of 2-methyl-2-phenylindolin-3-one <i>N</i> -oxyl with <i>p</i> -nitrobenzenediazonium tetrafluoroborate Chloroform ESR / 298	N: 0.924 2H(H4,6): 0.10 H(H7): 0.30	91Car1
$[C_{21}H_{16}ClN_2O_3]$ 	Reaction of 2-methyl-2-phenyl-3,5-dioxoindole <i>N</i> -oxide with <i>p</i> -chloroaniline followed by reduction with phenylhydrazine Chloroform ESR / 298	2.0057 N: 0.985 H(H6): 0.106 H(H7): 0.329	90Car1
$[C_{21}H_{16}N_2O_2]^-$ 	Electrochemical reduction of 2-methyl-2-phenylindole-5-oxo-3-phenylimino- <i>N</i> -oxide DMSO (DMF) ESR / 298	2.0052 N: 1.050 N_{γ} : 0.110 H(H4): 0.065 H(H6): 0.040 H(H7): 0.220	93Car1
$[C_{21}H_{17}N_2O_2]$ 	Electrochemical reduction of 2-methyl-2-phenylindole-5-oxo-3-phenylimino- <i>N</i> -oxide DMF containing 2,4-dimethylphenol ESR / 298	2.0054 N: 1.018 N_{γ} : 0.095 H(H4): 0.090 H(H6): 0.090 H(H7): 0.301	93Car1
$[C_{21}H_{17}N_2O_3]$ 	Reaction of 2-methyl-2-phenyl-3,5-dioxoindole <i>N</i> -oxide with aniline followed by reduction with phenylhydrazine Chloroform ESR / 298	2.0057 N: 0.997 H(H6): 0.109 H(H7): 0.336	90Car1
$[C_{21}H_{18}NO]$ 	Reaction of C_7H_7MgBr and 1-hydroxy-2-phenylindole followed by PbO_2 oxidation Chloroform ESR / 298	N: 1.066 $H_{\gamma}(CH_2)$: 0.022 $H_{\gamma}(H3)$: 2.59 $H_{\gamma}(H3)$: 3.48 H(H4): 0.100 H(H5): 0.337 H(H6): 0.062 H(H7): 0.336	98Bru1

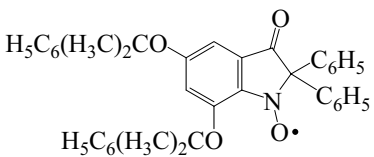
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₂₁H₂₀NO₆]</p> 	Reaction of 2-phenylindole-3-one with diethyl malonate anion and oxidation with CPBA Chloroform ESR / 298	N: 0.962 H _γ (CH): 0.029 H(H4): 0.101 H(H5): 0.304 H(H6): 0.099 H(H7): 0.292	99Tom2
<p>[C₂₂H₁₆NO₄]</p> 	Reaction of 2-phenylindole-3-one with lithium phenylacetate anion and oxidation with CPBA Chloroform ESR / 298	N: 1.052 H _γ (CH): 0.012 H(H4): 0.102 H(H5): 0.315 H(H6): 0.101 H(H7): 0.303	99Tom2
<p>[C₂₂H₁₈NO₃]</p> 	Reaction of 2-methyl-2-phenylindolin-3-one <i>N</i> -oxyl with <i>p</i> -anisoldiazonium tetrafluoroborate Chloroform ESR / 298	N: 0.965 2H(H4,6): 0.11 H(H7): 0.310	91Car1
<p>[C₂₂H₁₈NO₄S]</p> 	Reaction of 2-methyl-2-phenylindolin-3-one <i>N</i> -oxyl with <i>p</i> -methylthiophenol Benzene ESR / 298	N: 0.901 3H _γ (CH ₃): 0.021 2H(H4,6): 0.105 H(H7): 0.283	99Dam1
<p>[C₂₂H₁₈NO₄S]</p> 	Reaction of 2-methyl-2-phenylindolin-3-one <i>N</i> -oxyl with <i>p</i> -methylthiophenol Benzene ESR / 298	N: 0.809 3H _γ (CH ₃): 0.026 2H(H4,6): 0.099 H(H5): 0.312	99Dam1
<p>[C₂₂H₁₉N₂O₂]</p> 	Synthesis described ESR / 298	N: 0.886 N _γ : 0.071 H(H4): 0.100 [♥] H(H5): 0.308 H(H6): 0.099 H(H7): 0.294	00Dam1
[♥] Incorrect assignment in the original paper.			

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₂₂H₁₉N₂O₄]</p> 	Reaction of 2-methyl-2-phenyl-3,5-dioxoindole <i>N</i> -oxide with <i>p</i> -anisidine followed by reduction with phenylhydrazine Chloroform ESR / 298	2.0057 N: 0.994 H(H6): 0.109 H(H7): 0.345	90Car1
<p>[C₂₂H₂₀NO]</p> 	Synthesis described Chloroform ESR / 298	N: 1.062 H(H4): 0.098 H(H5): 0.325 H(H6): 0.100 H(H7): 0.326	99Tom1
<p>[C₂₂H₂₈NO]</p> 	Synthesis described Chloroform ESR / 298	N: 1.059 H(H _γ): 0.021 H(H4): 0.090 H(H5): 0.329 H(H6): 0.110 H(H7): 0.316	99Tom1
<p>[C₂₅H₂₅N₂O₂]</p> 	Reaction of BHP with PbO ₂ and 1-methyl-2-phenyl-3-indoliminyln <i>N</i> -oxyl in acetone Chloroform ESR / 298	2.0058–2.0060 N: 1.042 N _γ : 0.090 2H(H4,6): 0.106 H(H7): 0.315	89Car1
<p>[C₂₅H₂₅N₂O₂]</p> 	Reaction of BHP with PbO ₂ and 1-methyl-2-phenyl-3-indoliminyln <i>N</i> -oxyl in acetone Chloroform ESR / 298	2.0058–2.0060 N: 0.991 N _γ : 0.085 2H(H4,6): 0.103 H(H5): 0.341	89Car1
<p>[C₂₆H₁₈N₂O₂][−]</p> 	Electrochemical reduction of 2,2-diphenylindole-5-oxo-3-phenylimino- <i>N</i> -oxide DMSO (DMF) ESR / 298	2.0052 N: 1.050 N _γ : 0.111 H(H4): 0.065 H(H7): 0.230	93Car1

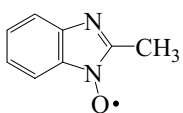
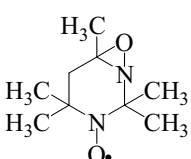
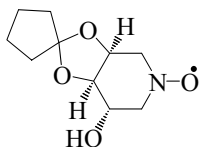
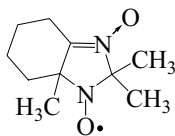
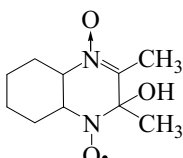
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{26}H_{19}N_2O]$ 	Reaction of H_5C_6MgBr with 2-phenyl-3-phenyliminoindoline- N -oxide followed by PbO_2 oxidation Benzene ESR / 298	2.0053_5 N : 0.976 N_γ : 0.076 $5H(NC_6H_5)$: 0.008 $H(H4)$: 0.110 $H(H5)$: 0.326 $H(H6)$: 0.106 $H(H7)$: 0.315	88Alb1
$[C_{26}H_{19}N_2O_2]$ 	Electrochemical reduction of 2,2-diphenylindole-5-oxo-3-phenylimino- N -oxide DMF containing 2,4-dimethylphenol Reaction of 2,2-diphenyl-5-oxo-3-phenyliminoindoline- N -oxide and phenylhydrazine Water ESR / 298	2.0052_6 N : 1.017 N_γ : 0.094 $2H(H4,6)$: 0.082 $H(H7)$: 0.307	88Alb1, 93Car1
$[C_{26}H_{19}N_2O_2]$ 	Reaction of 2,2-diphenyl-7-oxo-3-phenyliminoindoline- N -oxide and phenylhydrazine Water ESR / 298	2.0054_2 N : 1.076 N_γ : 0.082 $2H(H4,6)$: 0.082 $H(H5)$: 0.344	88Alb1
$[C_{26}H_{25}N_2O]$ 	Reaction of cyclopentylmethylmagnesium bromide and 2-phenyl-3-phenyliminoindole- N -oxide Chloroform ESR / 298	2.0058 N : 0.966 N_γ : 0.076 $H_\gamma(CH_2)$: 0.037 $2H(H4,6)$: 0.107 $2H(H5,7)$: 0.3222	88Ebe1
Spectrum also observed using 5-hexenylmagnesium bromide.			
$[C_{27}H_{20}N_2O_2]^-$ 	Electrochemical reduction of 2-phenyl-2-benzyl-5-oxo-3-phenyliminoindole- N -oxide DMSO (DMF) ESR / 298	2.0052 N : 1.040 N_γ : 0.110 $H_\gamma(CH_2)$: 0.052 $H(H4)$: 0.068 $H(H7)$: 0.245	93Car1

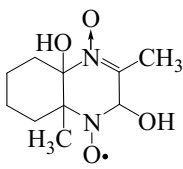
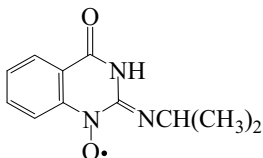
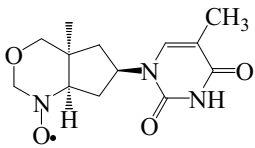
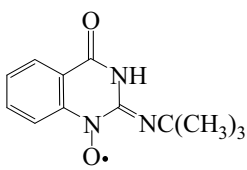
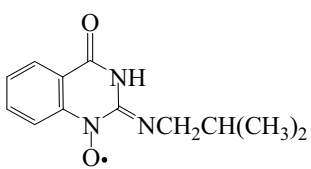
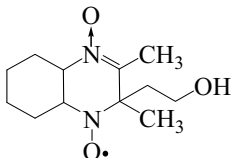
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₂₇H₂₀N₃O₃]</p> 	<p>Reaction of 2-methyl-2-phenyl-3-phenyliminoindole <i>N</i>-oxyl with <i>p</i>-nitrobenzediazonium tetrafluoroborate</p> <p>Chloroform</p> <p>ESR / 298</p>	<p>N: 0.950</p> <p>2H(H4,6): 0.120</p> <p>H(H7): 0.312</p>	91Car1
<p>[C₂₇H₂₁N₂O₂]</p> 	<p>Electrochemical reduction of 2-phenyl-2-benzyl-5-oxo-3-phenyliminoindole-<i>N</i>-oxide</p> <p>DMF containing 2,4-dimethylphenol</p> <p>ESR / 298</p>	<p>2.0052</p> <p>N: 1.010</p> <p>N_γ: 0.090</p> <p>H_γ(CH₂): 0.052</p> <p>2H(H4,6): 0.080</p> <p>H(H7): 0.301</p>	93Car1
<p>[C₂₇H₂₅N₂O₃]</p> 	<p>Reaction of 2-phenyl-3-phenyliminoindole with diethyl malonate anion and oxidation with CPBA</p> <p>Chloroform</p> <p>ESR / 298</p>	<p>N: 0.970</p> <p>N_γ: 0.090</p> <p>H_γ(CH): 0.031</p> <p>H(H4): 0.116</p> <p>H(H5): 0.315</p> <p>H(H6): 0.102</p> <p>H(H7): 0.234</p>	99Tom2
<p>[C₂₈H₂₁N₂O₂]</p> 	<p>Photooxidation of the corresponding <i>N,N'</i>-dihydroxy compound</p> <p>Chloroform</p> <p>ESR / 298</p>	<p>N: 0.937</p> <p>H_γ(H3): 0.010</p> <p>H_γ(H3): 0.154</p> <p>H(H4): 0.096</p> <p>H(H5): 0.333</p> <p>H(H6): 0.092</p> <p>H(H7): 0.316</p> <p>[D_γ: n.r.]</p> <p>[D_γ: n.r.]</p>	98Bru1
<p>[C₂₈H₂₁N₂O₃]</p> 	<p>Reaction of 2-phenyl-3-phenyliminoindole with phenyl acetate anion and oxidation with CPBA</p> <p>Chloroform</p> <p>ESR / 298</p>	<p>N: 1.089</p> <p>N_γ: 0.089</p> <p>H(H4): 0.114</p> <p>H(H5): 0.336</p> <p>H(H6): 0.103</p> <p>H(H7): 0.319</p>	99Tom2
<p>[C₂₈H₂₃N₂O₂]</p> 	<p>Reaction of 2-methyl-2-phenyl-3-phenyliminoindole <i>N</i>-oxyl with <i>p</i>-anisyl diazonium tetrafluoroborate</p> <p>Chloroform</p> <p>ESR / 298</p>	<p>N: 0.975</p> <p>2H(H4,6): 0.113</p> <p>H(H7): 0.307</p>	91Car1

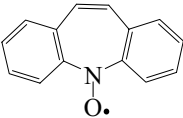
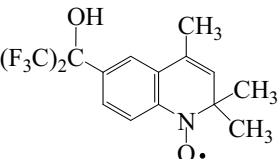
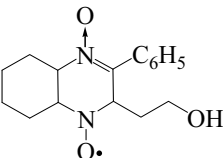
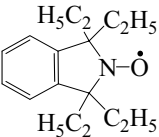
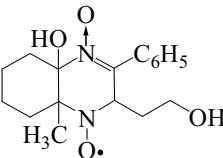
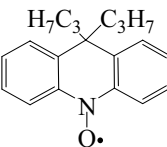
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₂₉H₂₄NO₃]</p>  <p>H₅C₆(H₃C)₂CO-</p>	Reaction of 2,2-diphenylindole-3-one <i>N</i> -oxyl with cumylhydroperoxide and PbO ₂ in acetone Chloroform ESR / 298	2.0058–2.0060 N: 1.054 2H(H _{4,6}): 0.097 H(H ₇): 0.306	89Car1
<p>[C₂₉H₃₃N₂O₃]</p>  <p>(H₃C)₃CO-</p>	Reaction of 2-methyl-2-phenyl-3-phenyliminoindole <i>N</i> -oxyl with BHP and PbO ₂ in acetone Chloroform ESR / 298	2.0058–2.0060 N: 1.022 N _γ : 0.094 2H(H _{4,6}): 0.094	89Car1
<p>[C₃₀H₂₇N₂O₂]</p>  <p>(H₃C)₃CO-</p>	Reaction of 2,2-diphenyl-3-phenyliminoindole <i>N</i> -oxyl with BHP and PbO ₂ in acetone Chloroform ESR / 298	2.0058–2.0060 N: 1.001 N _γ : 0.095 2H(H _{4,6}): 0.097 H(H ₇): 0.308	89Car1
<p>[C₃₀H₂₇N₂O₂]</p>  <p>(H₃C)₃CO-</p>	Reaction of 2,2-diphenyl-3-phenyliminoindole <i>N</i> -oxyl with BHP and PbO ₂ in acetone Chloroform ESR / 298	2.0058–2.0060 N: 0.948 N _γ : 0.081 2H(H _{4,6}): 0.095 H(H ₅): 0.329	89Car1
<p>[C₃₃H₂₃N₄O₅]</p>  <p>O₂N-</p>	Reaction of 2-methyl-2-phenyl-3-phenyliminoindole <i>N</i> -oxyl with <i>p</i> -nitrobenzondiazonium tetrafluoroborate Chloroform ESR / 298	N: 0.924	91Car1
<p>[C₃₄H₃₅N₂O₃]</p>  <p>(H₃C)₃CO-</p>	Reaction of 2,2-diphenyl-3-phenyliminoindole <i>N</i> -oxyl with BHP and PbO ₂ in acetone Chloroform ESR / 298	2.0058–2.0060 N: 0.924 N _γ : 0.091 2H(H _{4,6}): 0.091	89Car1

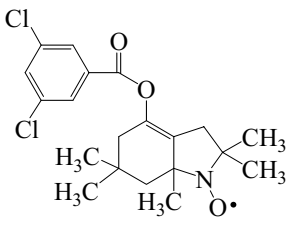
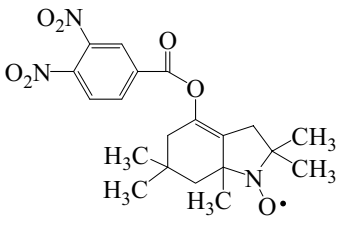
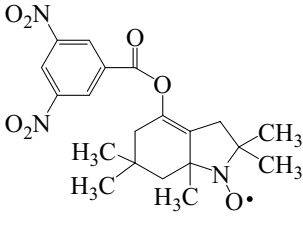
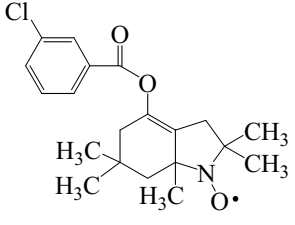
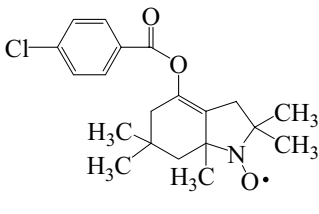
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{38}H_{34}NO_4]$ 	Reaction of 2,2-diphenylindole-3-one <i>N</i> -oxyl with cumylhydroperoxide and PbO ₂ in acetone Chloroform ESR / 298	2.0058–2.0060 N: 1.032 2H(H4,6): 0.093 H(H5): 0.294*	89Car1
* Wrong assignment. Should be the 7-cumyloxy derivative C ₂₉ H ₂₄ NO ₃ .			

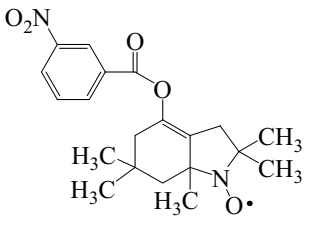
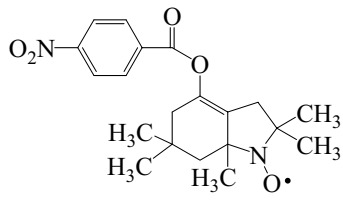
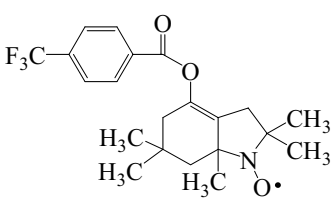
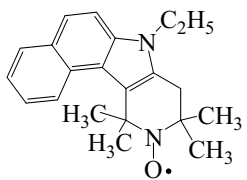
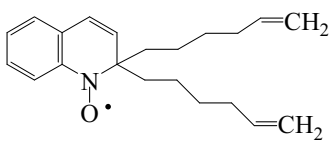
12.3.15 Miscellaneous fused-rings nitroxides

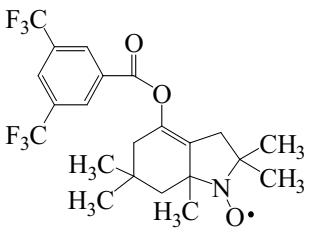
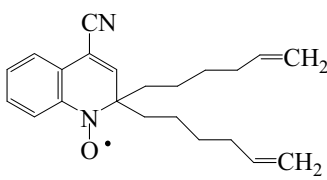
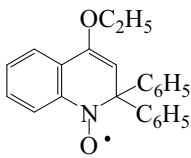
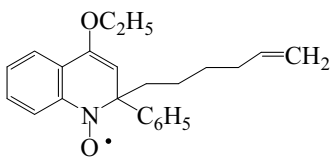
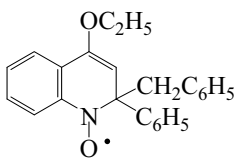
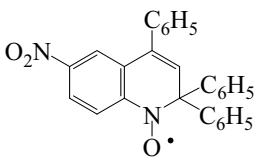
$[C_8H_7N_2O]$ 	Oxidation of the corresponding <i>N</i> -hydroxylamine with PbO ₂ Benzene ESR / 298	2.0061 N: 0.515 N _β : 0.174 H(H4): 0.025 H(H6): 0.049 H(H7): 2.13 H(H5): 2.42	91Alb1
$[C_9H_{17}N_2O_2]$ 	Oxidation of 2,2,4,6,6-pentamethyl-1,2,5,6-tetrahydropyrimidine with CPBA in ethylether Water containing LiCl ESR / 298	N: 1.58	00Hua1
$[C_{10}H_{16}NO_4]$ 	Spontaneous air oxidation of the corresponding hydroxylamine Diglyme ESR / 323	2.006 N: 1.44 H _β : 0.8 H _β : 1.15 H _β : 1.97 H _β : 2.13	91Tro1, 94Tro1
$[C_{10}H_{17}N_2O_2]$ 	Synthesis described Chloroform (ACN) ESR / 298	N: 1.46	90Saf1
$[C_{10}H_{17}N_2O_3]$ 	Photolysis of H ₂ O ₂ and 2,3-dimethylhexahydroquinoxaline-1,4-dioxide Water ESR	N: 1.49 H _β : 2.48	96Dul1

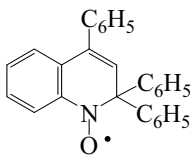
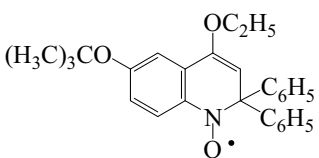
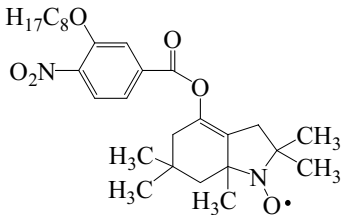
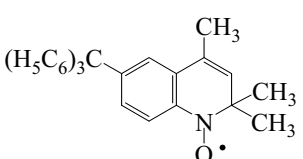
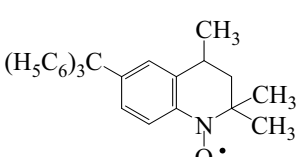
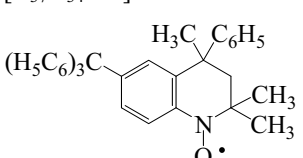
Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
<p>[C₁₀H₁₇N₂O₄]</p> 	<p>Photolysis of H₂O₂ and 3,10-dimethyl-9-hydroxyhexahydroquinoxaline-1,4-dioxide</p> <p>Water</p> <p>ESR</p>	<p>N: 1.55</p> <p>H_β: 1.87</p>	96Dul1
<p>[C₁₁H₁₂N₃O₂]</p> 	<p>Oxidation of 2-(isopropylamino)quinazolin-4-one with NPBA</p> <p>Benzene</p> <p>ESR / 298</p>	<p>N: 0.720</p> <p>N(NR): 0.044*</p> <p>N(NH): 0.068*</p> <p>H(NH): 0.083</p> <p>H(NCH): 0.068</p> <p>2H(H5,7): 0.068</p> <p>H(H6): 0.231♥</p> <p>H(H8): 0.235♥</p>	95Ome1
*♥ Can be exchanged.			
<p>[C₁₁H₁₄N₃O₅]</p> 	<p>Spontaneous air oxidation of the corresponding hydroxylamine</p> <p>Diglyme</p> <p>ESR / 343</p>	<p>2.0060</p> <p>N: 1.51</p> <p>H_β(CH₂): 0.48</p> <p>H_β(CH₂): 1.58</p> <p>H_β(CH): 2.00</p>	94Tro2
<p>[C₁₂H₁₄N₃O₂]</p> 	<p>Oxidation of 2-(<i>tert</i>-butylamino)quinazolin-4-one with NPBA</p> <p>Benzene</p> <p>ESR / 298</p>	<p>N: 0.740</p> <p>N(NR): 0.044*</p> <p>N(NH): 0.073*</p> <p>H(NH): 0.068</p> <p>2H(H5,7): 0.065</p> <p>2H(H6,8): 0.238</p>	95Ome1
* Can be exchanged.			
<p>[C₁₂H₁₄N₃O₂]</p> 	<p>Oxidation of 2-(isobutylamino)quinazolin-4-one with NPBA</p> <p>Benzene</p> <p>ESR / 298</p>	<p>N: 0.712</p> <p>N(NR): 0.045*</p> <p>N(NH): 0.068*</p> <p>H(NH): 0.083</p> <p>2H(NCH₂): 0.090</p> <p>2H(H5,7): 0.068</p> <p>2H(H6,8): 0.234</p>	95Ome1
* Can be exchanged.			
<p>[C₁₂H₂₁N₂O₃]</p> 	<p>Photolysis of ethanol, H₂O₂ and 2,3-dimethylhexahydroquinoxaline-1,4-dioxide</p> <p>Water</p> <p>ESR</p>	<p>N: 1.53</p> <p>H_β: 1.17</p>	96Dul1

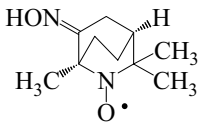
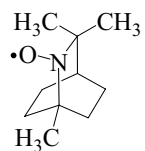
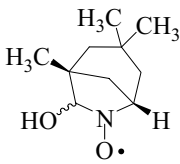
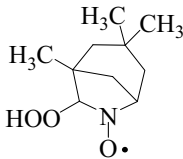
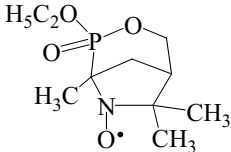
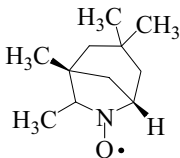
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₁₄H₁₀NO]</p> 	<p>Oxidation of iminostilbene with CPBA Benzene ESR 7 298</p>	<p>2.0058 N: 1.261 4H(H2,4,7,9): 0.050 2H(H5,6): 0.069 2H(H1,10): 0.151 2H(H3,8): 0.171</p>	99Luc1
<p>[C₁₅H₁₄F₆NO₂]</p> 	<p>Reaction of corresponding tetrahydroquinoline with H₂O₂ and Na₂WO₄ Aqueous methanol ESR / 298</p>	<p>N: 1.16 H: 0.293</p>	89Kom1
<p>[C₁₆H₂₁N₂O₃]</p> 	<p>Photolysis of ethanol, H₂O₂ and 2-phenylhexahydroquinoxaline-1,4-dioxide Water ESR</p>	<p>N: 1.65 H_β: 1.12</p>	96Dul1
<p>[C₁₆H₂₄NO]</p> 	<p>Water Heptane Sodium alkylsulphate micelles (C7 to C13)* ESR / 298</p>	<p>N: 1.55 N: 1.33 N: 1.52</p>	97Vas1, 98Was1
* Number of carbon atoms in the alkyl chain.			
<p>[C₁₇H₂₃N₂O₄]</p> 	<p>Photolysis of H₂O₂, ethanol and 3-phenyl-9-hydroxy-10-methylhexahydroquinoxaline-1,4-dioxide Water ESR</p>	<p>N: 1.47 H_β: 1.97</p>	96Dul1
<p>[C₁₉H₂₂NO]</p> 	<p>Synthesis described Benzene ESR / 298</p>	<p>2.0050 N: 0.882 4H(H1,3,6,8): 0.237 4H(H2,4,5,7): 0.077</p>	99Nak3
MacLachlan calculations.			

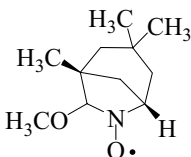
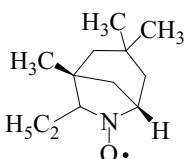
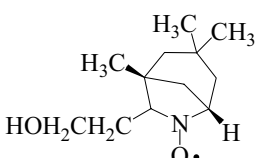
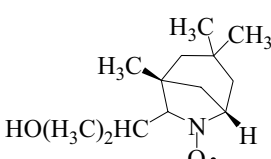
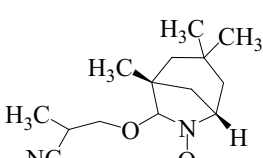
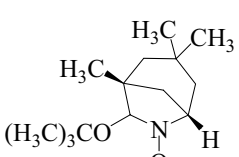
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{20}H_{24}Cl_2NO_3]$ 	Synthesis described THF 298	2.0059 N: 1.47	95Tam1
$[C_{20}H_{24}N_3O_7]$ 	Synthesis described THF 298	2.0058 N: 1.39	95Tam1
$[C_{20}H_{24}N_3O_7]$ 	Synthesis described THF 298	2.0058 N: 1.46	95Tam1
$[C_{20}H_{25}ClNO_3]$ 	Synthesis described THF 298	2.0060 N: 1.46	95Tam1
$[C_{20}H_{25}ClNO_3]$ 	Synthesis described THF 298	2.0060 N: 1.46	95Tam1

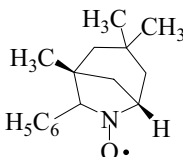
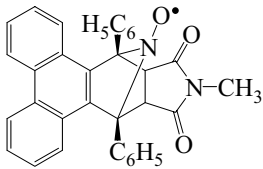
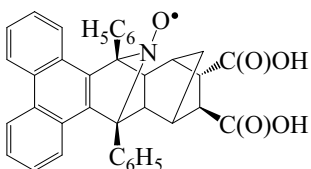
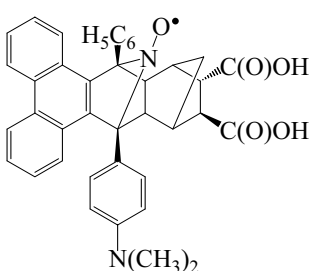
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{20}H_{25}N_2O_5]$ 	Synthesis described THF 298	2.0058 N: 1.48	95Tam1
$[C_{20}H_{25}N_2O_5]$ 	Synthesis described THF 298	2.0058 N: 1.39	95Tam1
$[C_{21}H_{25}F_3NO_3]$ 	Synthesis described THF 298	2.0060 N: 1.7	95Tam1
$[C_{21}H_{25}N_2O]$ 	Water Heptane Sodium alkylsulphate micelles (C7 to C13)* ESR / 298	N: 1.72 N: 1.55 N: 1.69	97Vas1, 98Was1
* Number of carbon atoms in the alkyl chain.			
$[C_{21}H_{28}NO]$ 	Synthesis described Chloroform ESR / 298	2.0059 N: 1.023 2H(H6,8): 0.337♥	88Ebe1
♥ Additional hyperfine structure not interpreted.			

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_{22}H_{24}F_6N_2O_3]$ 	Synthesis described THF ESR / 298	2.0060 N: 1.49	95Tam1
$[C_{22}H_{27}N_2O]$ 	Synthesis described Chloroform ESR / 298	2.0058 N: 0.996 2H(H6,8): 0.335♥	88Ebe1
♥ Additional hyperfine structure not interpreted.			
$[C_{23}H_{20}NO_2]$ 	Glassy toluene solution ESR – ENDOR / 105	H(H3): -3.9♦, ♦ 2H(H5,7): 2.9 H(H6): -8.9 H(H8): 2.9	87Bru2
♦ Nitrogen splitting not given. ♦ Values in MHz.			
$[C_{23}H_{26}NO_2]$ 	Synthesis described Benzene ESR / 298	2.0058 N: 0.976 2H(H6,8): 0.332♥ 3H(H3,5,7): 0.118	88Ebe1
♥ Additional hyperfine structure not interpreted.			
$[C_{24}H_{22}NO_2]$ 	Synthesis described Chloroform ESR / 298	2.0057 N: 0.1027 2H(H6,8): 0.329 2H(H5,7): 0.111 H(H3): 0.121	88Ebe1
$[C_{27}H_{19}N_2O_3]$ 	Synthesis described CH ₂ Cl ₂ ESR / 288	2.0053 ₇ N: 0.875 N(NO ₂): 0.087 H(H8): 0.300 H(H7): 0.092 H(H5): 0.100 H(H3): 0.125	94Web1

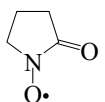
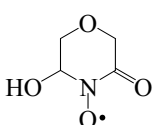
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
<p>[C₂₇H₂₀NO]</p> 	Synthesis described CH ₂ Cl ₂ ESR / 288	2.0057 ₀ N: 1.011 2H(H5,7): 0.102 H(H3): 0.125 2H(H6,8): 0.320	93Web1
<p>[C₂₇H₂₈NO₃]</p> 	Reaction of BHP, Fe ²⁺ and 2,2-diphenyl-4-ethoxyquinolin-1-yl oxyl Ethyl acetate ESR / 298	N: 0.947 2H(H5,7): 0.089 H(H3): 0.107 H(H8): 0.292	00Car1
<p>[C₂₈H₄₁N₂O₆]</p> 	Synthesis described THF ESR / 298	2.0060 N: 1.47	95Tam1
<p>[C₃₁H₂₈NO]</p> 	Synthesis described ESR	N: 1.12 H(H8): 0.28	88Shi1
<p>[C₃₁H₃₀NO]</p> 	Synthesis described ESR	N: 1.12 2H(H4,8): 0.28	88Shi1
<p>[C₃₇H₃₄NO]</p> 	Synthesis described ESR	N: 1.12 H(H8): 0.28	88Shi1

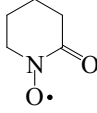
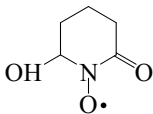
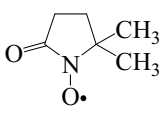
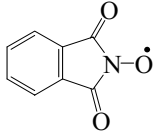
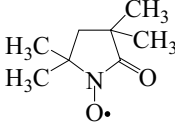
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
12.3.16 Polycyclic nitroxides			
$[C_{10}H_{17}N_2O_2]$ 	Synthesis described Chloroform ESR	N: 1.45	95Bak1
$[C_{10}H_{18}NO]$ 	Synthesis described Chloroform Water – LiCl ESR	N: 1.605 H: 0.299 N: 1.779 H: 0.352	97Bak1
$[C_{10}H_{18}NO_2]$ 	Photolysis of Trazon and H_2O_2 Water ESR / 298	N: 1.50 $2H_\beta$: 0.97 H: 0.10 H: 0.11	96San2
Trazon = 1,3,3-trimethyl-6-azabicyclo[3.2.1]oct-6-ene- <i>N</i> -oxide.			
$[C_{10}H_{18}NO_3]$ 	Incubation of Trazon with xanthine/xanthine oxidase Water ESR	N: 1.47 H_β : 0.91 H_β : 1.04 H_γ : 0.12 H_γ : 0.18	96San2, 00Tsa1
$[C_{10}H_{19}NO_4P]$ 	Heating ((4-(hydroxymethyl)-2,5,5-trimethylpyrrolidinyl- <i>N</i> -oxy)-2-phosphonate and NaH <i>tert</i> -Butylbenzene ESR / 298	2.0061 N: 1.340 ^{31}P : 5.798	93Sti1
$[C_{11}H_{20}NO]$ 	Reaction of H_3CMgBr and Trazon Benzene ESR / 298	N: 1.42 H_β : 0.85 H_β : 1.38 $2H_\gamma$: 0.12	96San2

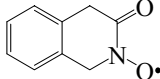
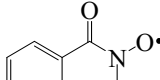
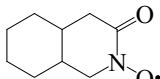
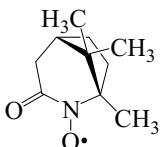
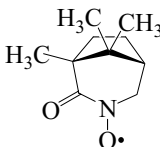
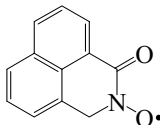
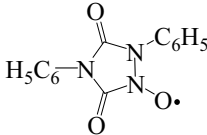
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / α -Value [mT]	Ref. / add. Ref.
$[C_{11}H_{20}NO_2]$ 	Photolysis of Trazon and benzophenone Methanol ESR / 298	N: 1.32 H_β : 0.85 H_β : 0.90 $2H_\gamma$: 0.12	96San2
$[C_{11}H_{22}NO]$ 	Reaction of H_5C_2MgBr and Trazon Benzene ESR / 298	N: 1.42 H_β : 0.86 H_β : 1.36 $3H_\gamma$: 0.11	96San2
$[C_{11}H_{22}NO_2]$ 	Photolysis of Trazon and benzophenone Ethanol ESR / 298	N: 1.54 H_β : 0.92 H_β : 1.48 $2H_\gamma$: 0.14	96San2
$[C_{13}H_{24}NO_2]$ 	Photolysis of Trazon and benzophenone Isopropanol ESR / 298	N: 1.48 H_β : 0.88 H_β : 1.77 H_γ : 0.12 H_γ : 0.14	96San2
$[C_{14}H_{23}N_2O_2]$ 	Heating Trazon and AIBN Benzene ESR / 298	N: 1.30 H_β : 0.79 H_β : 0.88 $2H_\gamma$: 0.11	96San2
$[C_{14}H_{26}NO_2]$ 	Photolysis of Trazon and BOOB Benzene ESR / 298	N: 1.30 H_β : 1.20 H_β : 1.80 $2H_\gamma$: 0.15	96San2

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_{16}H_{22}NO]$ 	Heating Trazon and PAT Benzene ESR / 298	N: 1.49 H_β : 0.85 H_β : 1.40 $2H_\gamma$: 0.14	96San2
PAT = Phenylazotriphenylmethane.			
$[C_{33}H_{23}N_2O_3]$ 	Synthesis described THF ESR / 293	2.0062 ₈ N: 2.261 3H: 0.027 2H: 0.09 N(NCH ₃): 0.05	97Bät1, 97Bät2
$[C_{37}H_{28}NO_5]$ 	Synthesis described THF ESR / 293	2.0062 ₂ N: 2.284 H: 0.048 2H: 0.077	97Bät1, 97Bät2
$[C_{39}H_{33}N_2O_5]$ 	Synthesis described THF ESR / 296	2.0061 ₀ N: 2.287 4H: 0.014 H: 0.048 2H: 0.076	99Mei

12.3.17 Cyclic and polycyclic acylnitroxides

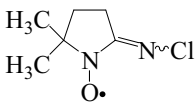
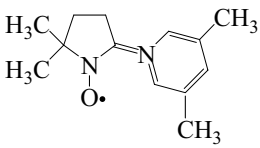
$[C_4H_6NO_2]$ 	Photolysis of cyclobutyl nitrite ACN (Flowing solution) ESR / 256	2.0065 N: 0.668 $2H_\beta$: 1.525 $2H_\gamma(H_{3,3})$: 0.368	97Gro1
$[C_4H_6NO_4]$ 	Photolysis of tetrahydro-3,4-furandiol and NO ACN (Flowing solution) ESR / 243	2.0064 N: 0.650 H_β : 0.710 $2H_\gamma$: 0.125	99Gro1

Substance	Generation / Matrix or Solvent / Method / <i>T</i> [K]	<i>g</i> -Factor / <i>a</i> -Value [mT]	Ref. / add. Ref.
$[C_5H_8NO_2]$ 	Photolysis of cyclopentyl nitrite ACN (Flowing solution) ESR / 223 to 298	2.0065 N: 0.760 2H _β : 1.160 2H _γ (H3,3): 0.180	97Gro1, 97Gro2
$[C_5H_8NO_3]$ 	Photolysis of 2-hydroxycyclopentyl nitrite ACN (Flowing solution) ESR / 223 to 298	2.0065 N: 0.708 H _β : 0.708 2H _γ (H3,3): 0.175	97Gro2
$[C_6H_{10}NO_2]$ 	Reaction of DMPO with H ₂ O ₂ /Fe ^{II} Electrolysis of aqueous solutions of DMPO Photolysis of DMPO in the presence of micellar Rose Bengal or of Ru(bpz) ₃ ²⁺ Water / pH 2 ESR / 298 Ru(bpz) ₃ ²⁺ = Tris(2,2'-bipyrazyl)ruthenium (II).	2.0060 N: 0.72 2H _γ : 0.42	91Gil1, 92Mak1, 95Che1, 96Bil1, 98Gic1
$[C_8H_4NO_3]$ 	Exposure of <i>N</i> -hydroxyphthalimide to NO Benzonitrile ESR / 373 Exposure of <i>N</i> -hydroxyphthalimide to Co(Ac) ₂ and toluene in oxygen atmosphere ACN ESR / 298 to 373 Electrochemical oxidation of <i>N</i> -hydroxyphthalimide CAN ESR / 298	2.0073 N: 0.423 2.0070 N: 0.477 2H: 0.04	96Ish1, 97Sak1, 97Yos1 87Ued1
$[C_8H_{14}NO_2]$ 	Mixing NH ₄ H ₂ PO ₄ , Na ₂ B ₄ O ₇ , TMPO and HOCl Water, pH 9 Oxidation of TMPO with TBPA CH ₂ Cl ₂ ESR / 298 TBPA = Tris(4-bromophenyl)aminium hexachloroantimonate.	N. 0.690	94Ban1, 94Ebel

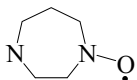
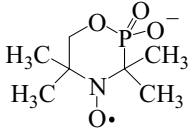
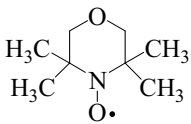
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[C_9H_8NO_2]$ 	Photolysis of 2-indanylnitrite ACN (Flowing solution) ESR / 223 to 298	2.0064 N: 0.725 $2H_\beta$: 1.175 $2H_\gamma(H_{3,3})$: 0.180	97Gro2
$[C_9H_8NO_2]$ 	Photolysis of 3-indanylnitrite ACN (Flowing solution) ESR / 223 to 298	2.0064 N: 0.725 $2H_\beta$: 1.000	97Gro2
$[C_9H_{14}NO_2]$ 	Photolysis of 2-tetrahydroindanylnitrite ACN (Flowing solution) ESR / 223 to 298	2.0064 N: 0.725 $2H_\beta$: 1.175 $2H_\gamma(H_{3,3})$: 0.187	97Gro2
$[C_{10}H_{16}NO_2]$ 	Potassiumferricyanide oxidation of <i>dl</i> -1,8,8-trimethyl-2-hydroxy-2-azabicyclo[3.2.1]octan-3-one in CH_2Cl_2 Chloroform ESR / 298	N: 0.73 H: 0.12 $2H$: 0.33	95Bra1
	Photolysis of <i>dl</i> -bornyl or <i>dl</i> -isobornyl nitrite ACN ESR / 238	2.0064 N: 0.750 H: 0.045 H: 0.080	97Gro2
$[C_{10}H_{16}NO_2]$ 	Photolysis of <i>dl</i> -bornyl or <i>dl</i> -isobornyl nitrite ACN ESR / 238	2.0064 N: 0.762 H_β : 0.625 H_β : 1.125	97Gro2
$[C_{12}H_8NO_2]$ 	Photolysis of 1-acenaphthyl nitrite ACN ESR / 298	2.0064 N: 0.713 $2H_\beta$: 1.325	97Gro2
$[C_{14}H_{10}N_3O_3]$ 	Reaction of BHP, PbO_2 and 1,4-diphenyl-1,2,4-triazolidin-3,5-dione Benzene ESR / 298	2.0060 N: 0.925 N_α : 0.063	92Klu1

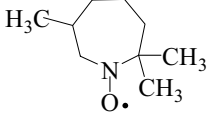
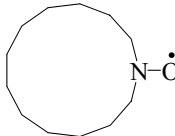
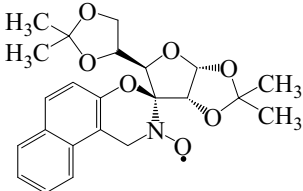
Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / α -Value [mT]	Ref. / add. Ref.
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12.3.18 Cyclic iminylnitroxides

$[C_6H_{10}ClN_2O]$ 	Mixing DMPO, NH_4Cl and $HOCl$ Phosphate buffer, pH 3 ESR / 298	N : 0.89 N_β : 0.371 ^{35}Cl : 0.078 ^{37}Cl : 0.070 $[^{15}N:0.525]$	92Ban3, 94Ban1
$[C_{13}H_{19}N_2O]$ 	Reaction of 3,5-lutidine, DMPO and TBA CH_2Cl_2 ESR / 298 TBPA = Tris(4-bromophenyl)aminium hexachloroantimonate.	N : 0.67 $2H_\beta$: 0.034	94Ebe1

12.3.19 Other cyclic nitroxides

$[C_5H_{11}N_2O]$ 	Oxidation of homopiperazine with H_2O_2 Water / Ethanol ESR / 308 to 403	N : 1.55 $4H_\beta$: 1.1	88Hus1
Activation energy for ring inversion estimated as $1.9 \text{ kcal mol}^{-1}$.			
$[C_7H_{14}NO_4P]^-$ 	Treatment of 3,3,5,5-tetramethyl-2-hydroxy-2-oxo-1,4,2-oxaazaphosphorinane with H_2O_2 and $NaHCO_3$ ACN Water ESR	N : 1.64 ^{31}P : 0.46 N : 1.69 ^{31}P : 0.62	00Lev1
$[C_8H_{16}NO_2]$ 	Water CCl_4 ESR	N : 1.462 ₅ N : 1.450 ₀	93AlB1

Substance	Generation / Matrix or Solvent / Method / T [K]	g -Factor / a -Value [mT]	Ref. / add. Ref.
$[\text{C}_9\text{H}_{18}\text{NO}]$ 	Electrochemical reduction and reoxidation of TEMPO Water – d_2 , pH 12 ESR / 298	N: 1.63 $2H_\beta$: 1.23	88Fis1
$[\text{C}_{12}\text{H}_{24}\text{NO}]$ 	Oxidation of dodecamethyleneimine with H_2O_2 Water / Ethanol ESR / 308 to 403	N: 1.6 $4H_\beta$: 1.05	88Hus1
$[\text{C}_{23}\text{H}_{26}\text{NO}_7]$ 	Spontaneous oxidation of the corresponding hydroxylamine Diglyme ESR / 293	2.0048 N: 1.39 H_β : 0.765 H_β : 2.195	92Tro1, 92Tro2