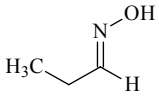
430 **C_3H_7NO** **(*E*)-Propionaldehyde oxime** **C_1 (*ac*)**
ED, MW (*E*)-Propanal oxime **C_s (*sp*)**

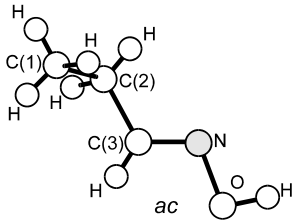
r_g	Å [a])	
	ac	*sp*
C(1)–C(2)	1.552(3)	
C(2)–C(3)	1.493(2)	
N–O	1.429(2)	
C(3)=N	1.284(2)	1.291(3)

θ_α^0	deg [a])	
	ac	*sp*
C(3)=N–O	109.4(2)	
C(1)–C(2)–C(3)	111.5(1)	112.6(6)
C(2)–C(3)=N	119.0(3)	122.6(6)
τ [b])	60	180



E- and *Z*-isomers exist in the gas phase. The geometrical parameters for the *antiperiplanar* (*ap*) form of the *Z*-isomer were taken from [1]. *E*-isomer exists as a mixture of *anticlinal* (*ac*) and *synperiplanar* (*sp*) conformers. The *ac* conformer was found to be more stable by 0.15(10) kcal mol^{-1} than the *sp* conformer. The ratio of *E-ac*, *E-sp* and *Z-ap* forms was determined to be 56:23:21. The torsional motion around the C(2)–C(3) bond was treated as a large-amplitude motion.
The nozzle was at about 323 K.

[a]) Estimated limits of error.
[b]) C–C–C=N torsional angle, $\tau = 0°$ for the *anti* position.



Iijima, K., Matsuoka, M., Sakaizumi, T., Ohashi, O.: Bull. Chem. Soc. Jpn. **69** (1996) 2481.
[1] Iijima, K., Ohashi, O.: J. Mol. Struct. **291** (1993) 159.

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