

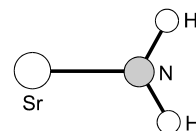
249
MW H_2NSr

Strontium monoamide

 C_{2v}
 SrNH_2

r_0	$\text{\AA}^a)$	θ_0	$\text{deg}^a)$
N-H	1.021(5)	H-N-H	105.4(5)
Sr-N	2.256(2)		

The SrNH_2 radical has the \tilde{X}^2A_1 ground electronic state. The present study provides additional evidence that the radical is planar with ionic bonding.



^{a)} Uncertainties were not estimated in the original paper.

Thompson, J.M., Sheridan, P.M., Ziurys, L.M.: Chem. Phys. Lett. **330** (2000) 373.

LIF

State	\tilde{X}^2A_1	\tilde{A}^2B_2	\tilde{B}^2B_1
Energy [eV]	0.00	1.764	1.821
$r_0(\text{Sr-N}) [\text{\AA}]$	2.247	2.223	2.228
$r_0(\text{N-H}) [\text{\AA}]$	1.041 ^{a)}	1.041 ^{a)}	1.041 ^{a)}
$\theta_0(\text{H-N-H}) [\text{deg}]$	100.0	97.7	99.7

Strontium monoamide was prepared in a Broida type oven by the reaction of strontium vapor with ammonia. The $\tilde{A}^2B_2 - \tilde{X}^2A_1$, $\tilde{B}^2B_1 - \tilde{X}^2A_1$ and $\tilde{C}^2A_1 - \tilde{X}^2A_1$ transitions were studied in laser-excited fluorescence and rotational analyses carried out for the first two. Structural parameters were deduced from the rotational constants.

^{a)} Assumed.

Brazier, C.R., Bernath, P.F.: J. Mol. Spectrosc. **201** (2000) 116.