

Structure Data of Free Polyatomic Molecules

326	C₂N₂O	Cyanogen fulminate	C_{∞v}
MW, IR		Ethanedinitrile <i>N</i> -oxide Cyanogen <i>N</i> -oxide	(large-amplitude motion) (effective symmetry class) N≡C–C≡N–O

r^a	Å	θ^a	deg
N≡C	1.16161(70)	C–C≡N	1.3075(22)
C–C	1.3669(16)		
C≡N	1.1652(17)		
N–O	1.19467(75)		

^a) Parameters derived from a general semirigid bender analysis of rotational and rovibrational transitions.

Lichau, H., Ross, S.C., Lock, M., Albert, S., Winnewisser, B.P., Winnewisser, M., De Lucia, F.C.: J. Phys. Chem. A **105** (2001) 10080.

r_0	Å ^{b)}	C _{∞v} ^{a)}
N≡C	1.1602(20)	
C–C	1.3639(20)	
C≡N	1.1586(20)	
N–O	1.1925(20)	

r_s	Å ^{b)}	
N≡C	1.1606(20)	
C–C	1.3633(30)	
C≡N	1.1574(30)	
N–O	1.1933(20)	

r_{lg}	Å ^{b)}	
N≡C	1.1606(20)	
C–C	1.3633(20)	
C≡N	1.1574(20)	
N–O	1.1933(20)	

^a) Though the present data strongly indicate that the molecule is linear, they are insufficient to completely rule out quasilinear behavior.

^b) Uncertainties were not estimated in the original paper.

Brupbacher, T., Bohn, R.K., Jäger, W., Gerry, M.C.L., Pasinszki, T., Westwood, N.P.C.: J. Mol. Spectrosc. **181** (1997) 316.