

Structure Data of Free Polyatomic Molecules

225 IR	HN ₂ O	Hydroxyl – dinitrogen (1/1) (weakly bound complex)		C _{∞v} (effective symmetry class) (large-amplitude motion) OH · N ₂

Isotopic species	State	R_{cm} [Å] ^{a)}	$r[\text{H}\dots\text{N}(\text{inner})]$ [Å] ^{a)}
OH · N ₂	$v=0$	3.859(8)	2.387(8)
	$v=2$	3.926(8)	2.417(8)
OD · N ₂	$v=0$	3.812(8)	2.394(8)
	$v=2$	3.846(6)	2.403(6)

The H-bound complex has linear structure in its $^2\Pi_{3/2}$ electronic ground state. The structure was determined from the rotationally resolved O–H overtone band under the assumption that the bond lengths are unchanged upon complexation.

^{a)} Estimated uncertainties reflect the spread in the rotational constants in repeated measurements.

Tsiouris, M., Pollack, I.B., Leung, H.O., Marshall, M.D., Lester, M.I.: J. Chem. Phys. **116** (2002) 913.

See also: Marshall, M.D., Pond, B.V., Hopman, S.M., Lester, M.I.: J. Chem. Phys. **114** (2001) 7001.