

309 **N₂O₄** **Dinitrogen tetraoxide** **D_{2h}** assumed
ED

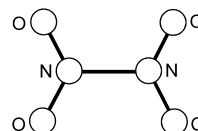
r_e	$\text{\AA}^a)$	θ_a	$\text{deg}^a)$
N=O	1.192(3)	O=N=O	134.6(5)
N–N	1.777(6)		



The vapor was found to exist as a mixture of NO₂ (82.0(6) mol%) and N₂O₄ (18.0(6) mol%) molecules. The barrier height to internal rotation around the N–N bond was estimated to be *ca.* 40 kJ mol^{–1}.

The nozzle temperature was 294 K.

The molecular parameters of monomeric NO₂ molecule were assumed at the values obtained for 480 K and corrected to 294 K.



^{a)} Estimated total errors.

Borisenko, K.B., Kolonits, M., Rozsondai, B., Hargittai, I.: J. Mol Struct. **413-414** (1997) 121.

r_a	$\text{\AA}^a)$	θ_a	$\text{deg}^a)$
N=O	1.191(2)	O=N=O	134.8(4)
N–N	1.774(5)		

The amount of N₂O₄ at –35 °C was found to be 76.3(58) mol%. The molecular parameters of NO₂ as obtained at 104 °C were included as constrained quantities. The experiments were made at several temperatures of the nozzle and the sample bath down to –35 and –43 °C, respectively, to study the monomer-dimer equilibrium.

^{a)} Twice the estimated standard errors.

Shen, Q., Hedberg, K.: J. Phys. Chem. A **102** (1998) 6470.

Replaces [II/25A\(2, 837\)](#), ED