

Structure Data of Free Polyatomic Molecules

297 LIF	Li₂O	Dilithium oxide		Li ₂ O
	State	$\tilde{X}^1\Sigma_g^+$	\tilde{A}^1B_1	
	Energy [eV]	0.00	^{a)}	
	Symmetry	D _{∞h}	C _{2v}	
	$r_0(\text{Li-O}) [\text{\AA}]$	1.611(3)	1.86(4)	
	$\theta_0(\text{Li-O-Li}) [\text{deg}]$	180.0	105(5)	

Li₂O molecules were produced by the reaction of pulses of a 5% N₂O/Ar mixture into a chamber containing laser-vaporized lithium atoms. Fluorescence was excited by a pulsed dye laser operating in the region 21000–23000 cm⁻¹. Many bands were analyzed and accurate molecular constants obtained for the ground state. Molecular constants were also obtained for many vibrational levels in the excited state: constants for the zero level were obtained by extrapolation.

^{a)} Zero level was not observed.

Bellert, D., Winn, D.K., Breckenridge, W.H.: J. Chem. Phys. **119** (2003) 10169.

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