Species Tag:	32002	Name:	O2-v1
Version:	6		Molecular oxygen, $^{16}O_2$
Date:	Mar. 2014		X $^3\Sigma_g^-$, v = 1
Contributor:	B.J. Drouin		
Lines Listed:	336	Q(300.0)=	218.6562
Freq. (GHz) <	9817	Q(225.0)=	164.0601
Max. J:	99	Q(150.0)=	109.6050
LOGSTR0=	-34.7	Q(75.00)=	55.1979
LOGSTR1=	-21.8	Q(37.50)=	28.0345
Isotope Corr.:	0	Q(18.75)=	14.5149
Egy. (cm^{-1}) >	1556.4	Q(9.375)=	7.8713
μ_a =	magnetic	A=	
μ_b =		B=	42626.96
μ_c =		C=	

The calculations include those described for the ground state (Species 32001). The vibrational excited state, v = 1, is 1556.38 ± 0.01 cm^{-1} above the ground state, data specific to this state include:

microwave/submillimeter
T. Amano and E. Hirota, J. Mol. Spec. 53, 346-363, 1974 Brown et al., JMS 151, 482 (1992) Endo & Mizushima, Jpn J Appl Phys 21, L379 (1982)

infrared/Raman
Rouille et al., JMS 154, 372 (1992)
Millot et al., JMS 176, 211 (1996)
Brodersen & Bendtsen, JMS 219, 248 (2003)

The Hamiltonian is given in: S. Yu, C.E. Miller, B.J. Drouin, H.S.P. Mueller, J. Chem. Phys. 136, 2012. The perpendicular g-factor has been removed from the intensity file in order to eliminate its excessive contribution to intensities at higher J values, catalog version 5 differed significantly from prior catalog versions due to a change in how this parameter is treated in the intensity calculation. The zero-frequency absorption is included but the frequency is set to a synthetic frequency of —g— J for the given level.