Species Tag:	32001	Name:	O2
Version:	4		Molecular oxygen, $^{16}O_2$
Date:	Jan 2010		X $^3\Sigma_g^-$, v = 0
Contributor:	H. S. P. Müller		

Lines Listed:	260	Q(300.0)=	218.5290
Freq. (GHz) <	11158	Q(225.0)=	164.0518
Max. J:	71	Q(150.0)=	109.6047
LOGSTR0=	-20.0	Q(75.00)=	55.1977
LOGSTR1=	-20.0	Q(37.50)=	28.0344
Isotope Corr.:	0	Q(18.75)=	14.5149
Egy. (cm^{-1}) >	0.0	Q(9.375)=	7.8713
μ_a =	magnetic	A=	
μ_b =		B=	43100.44
μ_c =		C=	

Additional partition function values are:
Q(500.0)=363.9377
Q(400.0)=291.2090
Q(350.0)=254.8629
Q(275.0)=200.3668
Q(250.0)=182.2077
Q(200.0)=145.8992

This is a combined CDMS/JPL catalog entry. The data have been summarized in
(1) B.J. Drouin, S. Yu, C.E. Miller, H.S.P. Müller, F. Lewen, S. Brünken and H. Habara, 2010, J. Quant. Spectrosc. Radiat. Transfer, **111**(9), 1167-1173. This work provides new data between 0.42 and 1.88 THz. Additional sub-mmW data were taken from
(2) L.R. Zink and M. Mizushima, 1987, J. Mol. Spectrosc. **125**, 154.
(3) K. Park, I.G. Nolt, T.C. Steele, L.R. Zink, K.M. Evenson, K.V. Chance and A.G. Murray, 1996, J. Quant. Spectrosc. Radiat. Transfer. **56**, 315
(4) G. Y. Golubyatnikov and A.F. Krupnov, 2003, J. Mol. Spectrosc. **217**, 282.

The mmW data were taken from
(5) J.S. Knight and W. Gordy, 1968, Phys. Rev. Lett. **21**, 1798
(6) Y. Endo and M. Mizushima, 1982, Jpn. J. Appl. Phys. **21**, L379
(7) M. Y. Tretyakov, M.A. Koshelev, V.V. Dorovskikh, D.S. Makarov and P.W. Rosenkranz, 2005, J. Mol. Spectrosc. **231**, 1

For multiply measured transitions differing in uncertainties by less than a facot of 2, weighted averages have been derived. Predictions should be viewed with caution above 4 Thz. Intensities were calculated based on g values obtained by magnetic

resonance in (8) K.D. Bowers, R.A. Kamper and C.D. Lustig, 1959, Proc. Roy. Soc. London, **A251**, 565. The zero-frequency absorption is included but the frequency is set to a synthetic frequency of —g— J for the given level.