

Species Tag:	18006	Name:	13CH3D
Version:	1		13C-Mono-deutero
Date:	May 2009		methane
Contributor:	B. J. Drouin H.S.P. Müller		
Lines Listed:	143	Q(300.0)=	807.8471
Freq. (GHz) <	4825	Q(225.0)=	525.1756
Max. J:	30	Q(150.0)=	286.6040
LOGSTR0=	-8.0	Q(75.00)=	102.2782
LOGSTR1=	-9.0	Q(37.50)=	36.9725
Isotope Corr.:	-5.784	Q(18.75)=	14.0711
Egy. (cm <sup>-1</sup> ) >	0.0	Q(9.375)=	5.9646
$\mu_a$ =	0.0056	A=	157412.
$\mu_b$ =		B=	116325.
$\mu_c$ =		C=	B

This entry is a combined CDMS and JPL entry. The transition frequencies were taken from

(1) B.J. Drouin, S. Yu, J.C. Pearson & H.S.P.Müller, *J. Quant. Spectrosc. Radiat. Trans.* 110(18) 2077-2081, 2009.

In addition, infrared ground state combination differences were used in the fit. These were published in

(2) C. Chackerian Jr., G. Guelachvili, *J. Molec. Spectrosc.* 1980; 80: 244-248.

Hamiltonian operators involving only  $K$  were assumed to be identical to those determined via perturbed infrared transitions for the <sup>12</sup>CH<sub>3</sub>D isotopologue in (3). (3) C. Chackerian, Jr., E. S. Bus, W. B. Olson, and G. Guelachvili, 1986, *J. Mol. Spectrosc.*, 117, 255; Octic parameters which were determined for <sup>12</sup>CH<sub>3</sub>D in (1) were held fixed in the analysis.

The dipole moment and distortion corrections are also taken from the <sup>12</sup>CH<sub>3</sub>D isotopologue (4) J. K. G. Watson, M. Takami, and T. Oka, 1979, *J. Chem. Phys.*, 70, 5376. As the distortion effects are rather large the intensities should be viewed with increasing caution beyond J of about 8.