Species Tag:	38008	Name:	$H^{37}Cl^+$
Version:	1		Chloroniumyl cation
Date:	Dec. 2016		$v = 1 \leftarrow 0$
Contributors:	B. J. Drouin		$^2\Pi_{1/2} \leftarrow^2 \Pi_{3/2}$
			$^2\Sigma \leftarrow^2 \Pi$
Lines Listed:	2583	Q(300.0)=	197.2359
Freq. (GHz) <	86000	Q(225.0)=	147.8291
Max. J:	40	Q(150.0)=	102.6078
LOGSTR0=	-8.0	Q(75.00)=	60.0006
LOGSTR1=	-10.0	Q(37.50)=	40.3538
Isotope Corr.:	-0.611	Q(18.75)=	33.1643
Egy. (cm^{-1}) >	0.0	Q(9.375)=	31.9492
μ_0 =	1.0	A=	
μ' =	0.1	B=	293003.82
μ_{el} =	0.13	C=	

The work of H. Gupta, B. J. Drouin, & J. C. Pearson, 2012, ApJ, **751**, L38 and the optical spectra in W. D. Sheasley, 1972, Ph.D. Dissertation, The Ohio State University; Ann Arbor, MI. is expanded to include vibrational data from Doménech, Drouin, Cernicharo *et al.* ApJL 833 L32 (2016). The transition dipole moments for infrared (μ' and optical (μ_{el}) are calculated by A. Pradhan *et al.* 1991, J. Chem. Phys, **95**, 9010. The magnetic dipole, which predicts fine structure transitions in the mid and far-ir was taken to be 1 Bohr magneton. The state identifiers v = 90 and v = 91 refer to the ground and first excited vibrational levels, respectively. The $^2\Sigma$ ground vibrational state has a state identifier of 50, and the state identifier 10 is the $^2\Pi$ vibrational ground state without hyperfine splitting.

state identifier (v)	state	HFS
10	$^2\Pi$ v = 0	no
50	$^2\Sigma$ v = 0	no
90	$^2\Pi$ v = 0	yes
91	$^2\Pi$ v = 1	yes