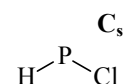


127
LIF

CIHP

Chlorophosphino



State	\tilde{X}^2A''	\tilde{A}^2A'
Energy [eV]	0.00	2.714
$r_e(\text{P-H})$ [Å]	1.4158(23)	1.4067(20)
$r_e(\text{P-Cl})$ [Å]	2.0388(4)	2.0050(2)
$\theta_e(\text{H-P-Cl})$ [deg]	95.02(27)	115.53(12)

HPCl and DPCl molecules were produced in a pulsed electric discharge jet using a precursor mixture of PCl_3 and H_2 or D_2 . From a combination of laser-induced fluorescence and wavelength resolved emission spectra, all of the vibrational frequencies in the ground and excited states have been measured and vibrational force fields determined. From the rotational constants derived from the 0-0 bands of both isotopomers and the force fields, equilibrium structures have been determined.

Tackett, B.S., He, S-G., Evans, C.J., Clouthier, D.J., Judge, R.H.: J. Chem. Phys. **119** (2003) 2037.