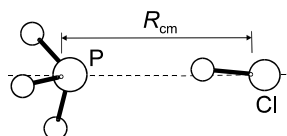


136
MW**ClH₃P****Hydrogen chloride – phosphine (1/1)**
(weakly bound complex)**C_{3v}**
(effective symmetry class)
(large-amplitude motion)
HCl · PH₃

Isotopic species	$r_0(R_{\text{cm}})$ [Å] ^{a)}	$r_0(\text{P} \cdots \text{H})$ [Å] ^{a)}	$r_0(\text{P} \cdots \text{Cl})$ [Å] ^{a)}
H ₃ P · H ³⁵ Cl	3.9122(2)	2.5803(2)	3.8775(2)
H ₃ P · H ³⁷ Cl	3.9138(2)	2.5800(2)	3.8772(2)
H ₃ P · D ³⁵ Cl	3.8753(2)	2.5802(2)	3.8749(2)
D ₃ P · H ³⁵ Cl	3.9645(5)	2.5736(5)	3.8708(5)

The intermolecular stretching and bending force constants, k_σ and $k_{\theta\theta}$, are 6.01 N m⁻¹ and 1.52×10⁻²⁰ J rad⁻², respectively.



^{a)} Monomer rotational constants and geometries were used after adjustment to allow for the changes in these quantities suggested by MP2/aug-cc-pVTZ calculations.

Legon, A.C., Thumwood, J.M.A., Wacławik, E.R., Willoughby, L.C.: Phys. Chem. Chem. Phys. **2** (2000) 4918.

Replaces [II/25A\(2, 293\)](#)