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Table 1. Centrifugal distortion constants for PH_3 (10^{-4} cm^{-1}) and PF_3 (10^{-7} cm^{-1})^a

Molecule	Type ^b	D_J	D_{JK}	D_K
PH_3	T unscaled	1.157	-1.488	1.044
	T scaled	1.448	-1.885	1.331
	L unscaled	1.181	-1.517	1.067
	L scaled	1.436	-1.867	1.323
	E ref.25	1.3135(3)	-1.72532(4)	1.4140(2)
PF_3	T unscaled	2.336	-3.499	1.611
	T scaled	2.648	-3.920	1.785
	E ref.22	2.617(1) ^c	-3.922(5) ^c	1.73 ^d

a) Theoretical equilibrium values and experimental ground-state values.

b) T theoretical, 6-31G^{**}; L theoretical, large basis L;

T scaled and L scaled refer to theoretical force fields scaled with respect to the fundamental frequencies ν_i^{obs} ; E experiment, uncertainty of last digit given in parentheses.

c) Equilibrium values (ref.22): D_J^e 2.604(6), D_{JK}^e -3.800(46).

d) Fixed.

Table 2. Coriolis constants (dimensionless)

Molecule	Type ^a	ζ_3	ζ_4	$ \zeta_{13} $	$ \zeta_{24} $
PH ₃	T unscaled	0.0192	-0.4206	0.0037	0.5382
	T scaled	0.0194	-0.4208	0.0030	0.5382
	L unscaled	0.0194	-0.4212	0.0030	0.5380
	L scaled	0.0196	-0.4214	0.0023	0.5379
	E	0.0168 ^b	-0.4498 ^c	$\leq 0.01^d$	0.526 ^{c,e}
PF ₃	T unscaled	0.4438	-0.6331	0.4450	0.3649
	T scaled	0.4521	-0.6414	0.4624	0.3556
	E	0.419 ^{f,g}	-0.629 ^f	0.392(15) ^f	-

a) See footnote b of Table 1.

b) Reference 18.

c) Reference 19.

d) Upper limit from reference 29; empirical force field value 0.004 from reference 30.

e) Reference 30.

f) Reference 22.

g) See text.

Table 3. Centrifugal distortion constants (10^{-5} cm^{-1}) and Coriolis constants for PD_3^{a}

Type ^b	D_{J}	D_{JK}	D_{K}	ζ_3	4	$ \zeta_{13} $	$ \zeta_{24} $
T unscaled	3.036	-3.857	2.606	0.0631	-0.4442	0.0297	0.5267
T scaled	3.736	-4.820	3.290	0.0627	-0.4438	0.0303	0.5269
Experiment ^{c,d}	3.404(23)	-4.377(2)	3.425(7)	0.0564	-0.4685	0.062	0.5154

a) Theoretical equilibrium values and experimental ground-state values.

b) T theoretical, 6-31G**^{*}; T scaled refers to theoretical force fields scaled with respect to ν_i^{obs} .

c) References 30, 64.

d) Experimental equilibrium values (ref.29): D_{J}^{e} 3.336, D_{JK}^{e} -4.049, D_{K}^{e} 3.022.