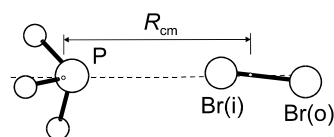


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MW**Br<sub>2</sub>H<sub>3</sub>P****Dibromine – phosphine (1/1)**  
(weakly bound complex)**C<sub>3v</sub>**  
(effective symmetry class)  
(large-amplitude motion)  
Br<sub>2</sub> · PH<sub>3</sub>

Isotopic species	$r_0(R_{\text{cm}})$ [Å]	$r_0(\text{P} \cdots \text{Br}(\text{i}))$ [Å]	$k_{\sigma}$ [N m <sup>-1</sup> ] <sup>a)</sup>
H <sub>3</sub> P · <sup>79</sup> Br <sup>79</sup> Br	4.2533(7)	3.0432(7)	9.78
H <sub>3</sub> P · <sup>81</sup> Br <sup>79</sup> Br	4.2393(8)	3.0434(8)	9.84
H <sub>3</sub> P · <sup>79</sup> Br <sup>81</sup> Br	4.2681(8)	3.0436(8)	9.87
H <sub>3</sub> P · <sup>81</sup> Br <sup>81</sup> Br	4.2540(7)	3.0438(7)	9.70
D <sub>3</sub> P · <sup>79</sup> Br <sup>79</sup> Br	4.2969(6)	3.0298(6)	9.83
D <sub>3</sub> P · <sup>81</sup> Br <sup>79</sup> Br	4.2828(6)	3.0299(6)	9.78

The P...Br(i) bond is a relatively strong one.

<sup>a)</sup> Intermolecular stretching force constant.Waclawik, E.R., Legon, A.C.: Chem. Eur. J. **6** (2000) 3968.