

**Table IR-6.1** Parent names of mononuclear hydrides

BH <sub>3</sub>	borane	CH <sub>4</sub>	methane <sup>c</sup>	NH <sub>3</sub>	azane <sup>d</sup>	H <sub>2</sub> O	oxidane <sup>a,d</sup>	HF	fluorane <sup>g</sup>
AlH <sub>3</sub>	alumane <sup>a</sup>	SiH <sub>4</sub>	silane	PH <sub>3</sub>	phosphane <sup>e</sup>	H <sub>2</sub> S	sulfane <sup>a,f</sup>	HCl	chlorane <sup>g</sup>
GaH <sub>3</sub>	gallane	GeH <sub>4</sub>	germane	AsH <sub>3</sub>	arsane <sup>e</sup>	H <sub>2</sub> Se	selane <sup>a,f</sup>	HBr	bromane <sup>g</sup>
InH <sub>3</sub>	indigane <sup>b</sup>	SnH <sub>4</sub>	stannane	SbH <sub>3</sub>	stibane <sup>e</sup>	H <sub>2</sub> Te	tellane <sup>a,f</sup>	HI	iodane <sup>g</sup>
TlH <sub>3</sub>	thallane	PbH <sub>4</sub>	plumbane	BiH <sub>3</sub>	bismuthane <sup>a</sup>	H <sub>2</sub> Po	polane <sup>a,f</sup>	HAt	astatane <sup>g</sup>

<sup>a</sup> The names aluminane, bismane, oxane, thiane, selenane, tellurane and polonane cannot be used since they are the names of saturated six-membered heteromonocyclic rings based on the Hantzsch-Widman system (see Section IR-6.2.4.3). The name 'alane' has been used for AlH<sub>3</sub>, but must be discarded because the systematically derived name of the substituent group –AlH<sub>2</sub> would be 'alanyl' which is the well established name of the acyl group derived from the amino acid alanine.

<sup>b</sup> The analogous systematic name for InH<sub>3</sub> would be 'indane' which is, however, well established as the name of the hydrocarbon 2,3-dihydroindene. The name 'indiane' would lead to confusion when naming unsaturated derivatives, *e.g.* 'triindiene' could mean a compound with two double bonds (a diene) as well as the monounsaturated derivative of triindane. The parent name 'indigane' derives from the etymological source 'indigo' (from the flame colour of indium).

<sup>c</sup> The systematic analogue is 'carbane'. Because of the universal use of the name 'methane' for CH<sub>4</sub>, 'carbane' is not recommended.

<sup>d</sup> The names 'azane' and 'oxidane' are only intended for use in naming derivatives of ammonia and water, respectively, by substitutive nomenclature. Examples of such use may be found in Section IR-6.4. In Section P.62 of Ref. 1 many organic derivatives of ammonia are named on the basis of the substituent group suffixes 'amine' and 'imine'.

<sup>e</sup> The systematic names 'phosphane', 'arsane' and 'stibane' are used throughout this book. The names 'phosphine', 'arsine' and 'stibine' are not recommended.

<sup>f</sup> Sulfane, when unsubstituted, may also be named 'hydrogen sulfide' or, better, 'dihydrogen sulfide' (compositional nomenclature, Chapter IR-5). However, a compositional name cannot be used as a parent name. Corresponding remarks apply to selane, tellane, and polane.

<sup>g</sup> The names 'fluorane', 'chlorane', 'bromane', 'iodane' and 'astatane' are included here because they are the basis for the formation of substitutive names of ions, radicals and substituent groups (see IR-6.4.7 and Table IX for examples). The unsubstituted hydrides may also be named 'hydrogen fluoride', 'hydrogen bromide', *etc.* (compositional nomenclature, Chapter IR-5). However, these compositional names cannot be used as parent names.

IUPAC Provisional Recommendations