

## Supplement 1. Safe Handling of Hazardous Substances

### Appendix 4-4 Combustion / Explosion Risk of Major Gases with Special Components

Specialized Material	Gas	Explosive Range (vol%)	Ignition Point etc	Degradation Explosiveness
silane	SiH <sub>4</sub>	1.37~*1	pyrophoric	×
disilane	Si <sub>2</sub> H <sub>6</sub>	0.5~*1	pyrophoric	×
dichlorosilane	SiH <sub>2</sub> Cl <sub>2</sub>	4.1~98.8	ignition temperature: ca. 50 °C	×
trichlorosilane	SiHCl <sub>3</sub>	unclear	ignition point: ca. 200 °C	×
diborane	B <sub>2</sub> H <sub>6</sub>	0.84~93.3	ignition point: ca. 80 °C	△
phosphine	PH <sub>3</sub>	1.6~*1	pyrophoric	×
germane	GeH <sub>4</sub>	2.28~100	ignition point: ca. 150 °C	○
arsine	AsH <sub>3</sub>	5.1~78	non-pyrophoric	×
hydrogen selenide	H <sub>2</sub> Se	12.5~63	non-pyrophoric	×
tin hydride	SnH <sub>4</sub>	*2~100	unclear	○
stibine	SbH <sub>3</sub>	*2~100	unclear	○
hydrogen telluride	H <sub>2</sub> Te	*2~100	unclear	○

\*1: not 100 vol%, but close to 100 vol%

\*2: unclear

○: explode

△: might explode

×: believed not to explode

(Based on the 3<sup>rd</sup> Edition of [Safety Guideline for Chemical Experiment] by The Chemical Society of Japan)