

Appendix B

Table of Chemical Agent Properties

Table B-1, on this and the next two pages, provides a quick reference for Chemical Agent Properties. The extreme left column of each page shows the general classes

of agents. The next column shows specific agents. The remaining columns across the page show selected properties.

Table B-1. Properties of chemical agents and compounds. (Part 1 of 3)

Agents	Chemical Agent; Formula; Symbol	Molecular Weight	State at 20°C	Odor	Vapor Density (Air = 1)	Liquid Density (g/cc)	Freezing/ Melting Point (°C)	Boiling Point (°C)
Choking Agents	Phosgene; COCl ₂ ; CG	98.92	Colorless gas	New-mown hay; green corn	3.4	1.37 at 20°C	- 128	7.6
	Diphosgene; ClCOOCCl ₃ ; DP	197.85	Colorless liquid	New-mown hay; green corn	6.8	1.65 at 20°C	- 57	127 to 128
Nerve Agents	Tabun; C ₂ H ₅ OPO(CN)N(CH ₃) ₂ ; GA	162.3	Colorless to brown liquid	Faintly fruity; none when pure	5.63	1.073 at 25°C	- 5	240
	Sarin; CH ₃ PO(F)OCH(CH ₃) ₂ ; GB	140.1	Colorless liquid	Almost none when pure	4.86	1.0887 at 25°C 1.102 at 20°C	- 56	158
	Soman; CH ₃ PO(F)OCH(CH ₃)C(CH ₃) ₃ ; GD	182.178	Colorless liquid	Fruity; camphor when impure	6.33	1.0222 at 25°C	- 42	198
	GF; CH ₃ PO(F)OC ₆ H ₁₁	180.2	Liquid	Sweet; musty; peaches; shellac	6.2	1.1327 at 20°C	- 30	239
	VX (C ₂ H ₅ O)(CH ₃ O)P(O)S(C ₂ H ₄)N[C ₂ H ₂ (CH ₃) ₂] ₂	267.38	Colorless to amber liquid	None	9.2	1.0083 at 20°C	Below - 51	298
	"V-Sub X" V _x	211.2	Colorless liquid	None	7.29	1.062 at 20°C	-	256
Blood Agents	Hydrogen cyanide HCN AC	27.02	Colorless gas or liquid	Bitter almonds	0.990 at 20°C	0.687 at 20°C	- 13.3	25.7
	Cyanogen chloride CNCl CK	61.48	Colorless liquid or gas	Pungent, biting; can go unnoticed	2.1	1.18 at 20°C	- 6.9	12.8
	Arsine AsH ₃ SA	77.93	Colorless gas	Mild garlic	2.69	1.34 at 20°C	- 116	- 62.5