

3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

Table 3-1 lists common synonyms, trade names, and other pertinent identification information for bromomethane.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

Table 3-2 lists important physical and chemical properties of bromomethane.

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TABLE 3-1. Chemical Identity of Bromomethane

Characteristic	Information	Reference
Chemical name	Bromomethane	Windholz 1983
Synonyms	Methyl bromide; monobromomethane; methyl fume	IRIS 1989
Trade names	Embafume [®] ; Terabol [®]	EPA 1986b
Chemical formula	CH ₃ Br	Windholz 1983
Chemical structure	$\begin{array}{c} \text{H} \\ \\ \text{H} - \text{C} - \text{Br} \\ \\ \text{H} \end{array}$	Windholz 1983
Identification numbers:		
CAS registry	74-83-9	Sax and Lewis 1987
NIOSH RTECS	PA-900000	HSDB 1989
EPA hazardous waste	U029	NLM 1989
OHM/TADS	No data	
DOT/UN/NA/IMCO shipping	UN1062	NLM 1989
	IMCO 2.3	HSDB 1989
	NA1581	HSDB 1989
HSDB	799	NLM 1989
NCI	No data	

CAS = Chemical Abstracts Service; DOT/UN/NA/IMCO = Department of Transportation/United Nations/North America/International Maritime Dangerous Goods Code; EPA = Environmental Protection Agency; HSDB = Hazardous Substances Data Bank; NCI = National Cancer Institute; NIOSH = National Institute for Occupational Safety and Health; OHM/TADS = Oil and Hazardous Materials/Technical Assistance Data System; RTECS = Registry of Toxic Effects of Chemical Substances

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TABLE 3-2. Physical and Chemical Properties of Bromomethane

Property	Information	Reference
Molecular weight	94.95	Windholz 1983
Color	Colorless	Sax and Lewis 1987
Physical state	Gas	Windholz 1983
Melting point	-93.7°C	Windholz 1983
Boiling point	3.6°C	Windholz 1983
Density at 20°C ^a	3.97	Windholz 1983
Odor	Chloroform-like	Windholz 1983
Odor threshold:		
Water	No data	
Air	80 mg/m ³ (20 ppm)	Ruth 1986
Solubility:		
Water at 20°C	0.9 g/L 13.4-18.1 g/L 13 g/L	Verschuieren 1983 EPA 1986b Lyman et al. 1982
Organic solvents	Freely soluble	Windholz 1983
Partition coefficients:		
Log K _{ow}	1.1	Callahan et al. 1979
Log K _{oc}	0.77	Mabey et al. 1982
Vapor pressure at 20°C	1,420 mmHg	Mabey et al. 1982
Henry's law constant: (20°C)	0.013 atm·m ³ /mole 0.197 atm·m ³ /mole	Lyman et al. 1982 Mabey et al. 1982
Autoignition temperature	Nonflammable	EPA 1986b
Flashpoint	Nonflammable	EPA 1986b
Flammability limits	Nonflammable	EPA 1986b
Conversion factors	1 ppm = 3.95 mg/m ³ 1 mg/m ³ = 0.25 ppm	Verschuieren 1983 Verschuieren 1983
Explosive limits	Nonflammable	EPA 1986b

^aDensity of vapor relative to air.

