

3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

The chemical formula, structure, synonyms, and identification numbers for 1,2-dibromoethane are listed in Table 3-1.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

Important physical and chemical properties of 1,2-dibromoethane are listed in Table 3-2.

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TABLE 3-1. Chemical Identity of 1,2-Dibromoethane

| Characteristic | Information | Reference |
|--------------------|--|--|
| Chemical name | 1,2-Dibromoethane | Windholz 1983 |
| Synonyms | Ethylene dibromide; dibrom- oethane; ethylene bromide; ethane, 1,2-dibromo-; EDB; α -, β -dibromoethane; sym-dibromoethane; glycol bromide; glycol dibromide; 1,2-dibromoethano (Italian); bomoro ei etile (Italian); 1,2-dibroomethaan (Dutch); althylenbromid (German); dibromure d'ethylene (French); dwubromoetan (Polish) | HSDB 1989; Weiss 1986; Windholz 1983 |
| Trade names | Bromofume; Dowfume W85; Dowfume EDB; Dowfume 40, W-10, W-15, W-40; Dowfume MC-2; Iscobrome D; ENT 15, 349; Netis; Pestmaster EDB-85; Santryuum; Unifume; EDB-85; Fumogas; Icopfume soilbrom-85; soilfume | HSDB 1989; Weiss 1986; Windholz 1983 |
| Chemical Formula | $C_2H_4Br_2$ $BrCH_2CH_2Br$ | Windholz 1983 Windholz 1983 |
| Chemical structure | $ \begin{array}{c} H & H \\ & \\ Br-C & -C-Br \\ & \\ H & H \end{array} $ | |

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TABLE 3-1 (Continued)

| Characteristic | Information | Reference |
|-------------------------|----------------------------|------------|
| Identification numbers: | | |
| CAS registry | 106-93-4 | Weiss 1986 |
| NIOSH RTECS | NIOSH/KH 9275000 | NIOSH 1985 |
| EPA hazardous waste | U067 | HSDB 1989 |
| OHM/TADS | 7216716 | HSDB 1989 |
| DOT/UN/NA/IMCO shipping | DOT 1605; UN 1605; IMO 6.1 | HSDB 1989 |
| HSDB | 536 | HSDB 1989 |
| NCI | COO522 | HSDB 1989 |

CAS - Chemical Abstracts Services; 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 Chemicals Substances

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TABLE 3-2. Physical and Chemical Properties of 1,2-Dibromoethane

| Property | Information | Reference |
|----------------------------------|--|---|
| Molecular weight | 187.86 187.88 188.0 | Weiss 1986 Windholz 1983 NIOSH 1985 |
| Color | Colorless | Weiss 1986 |
| Physical state at 15°C, 1 atm | Liquid | Weiss 1986 |
| Melting point (centigrade) | 10°C | NIOSH 1978 |
| Boiling point (centigrade) | 131°-132°C | Windholz 1983 |
| Density at 25°C | 2.172 g/cm ³ | Windholz 1983 |
| Odor | Mild sweet odor, like chloroform | Weiss 1986 |
| Odor threshold: | | |
| Water | No data | |
| Air | No data | |
| Solubility: | | |
| Water at 20°C | 0.4 g/100 g water | NIOSH 1978 |
| Water at 25°C | 0.429 g/100 g water | Parrish 1983 |
| Organic solvents | Miscible with alcohol, ether | Windholz 1983 |
| Partition coefficients: | | |
| Octanol/water | 86 | Steinberg et al. 1987 |
| K _{oc} | 66 | Rogers and McFarlane 1981 |
| Vapor pressure at 25°C | 11 mmHg | Windholz 1983 |
| Henry's law constant: at 20°C | 8.2x10 ⁻⁴ atm m ³ /mol | Rathbun and Tai 1986 |
| Autoignition temperature | Not flammable | Weiss 1986 |
| Flashpoint | Not flammable | Weiss 1986 |
| Flammability limits | Not flammable | Weiss 1986 |
| Conversion factors | No data | |
| Explosive limits | No data | |