CHAPTER 4. CHEMICAL AND PHYSICAL INFORMATION

4.1 CHEMICAL IDENTITY

Information regarding the chemical identity of chloroethane is presented in Table 4-1.

Table 4-1. Chemical Identity of Chloroethane

Characteristic	Information	Reference
Chemical name	Ethyl chloride; chloroethane	Lide 2005
Synonym(s) and registered trade name(s)	Aethylis; chloridum; chlorethyl; ether chloratus; ether hydrochloric; ether muriatic; ethyl chloride; monochloro-ethane; Anodynon; Chelen; chloryl anesthetic; Kelene; Narcotile	NLM 2023
Chemical formula	C_2H_5Cl	Budavari et al. 1989
SMILES	CCCl	NLM 2023
Chemical structure	$CH_3–CH_2–Cl$	Lide 2005
CAS Registry Number	75-00-3	NLM 2023

CAS = Chemical Abstracts Service; SMILES = simplified molecular-input line-entry system

4.2 PHYSICAL AND CHEMICAL PROPERTIES

Information regarding the physical and chemical properties of chloroethane is presented in Table 4-2.

Table 4-2. Physical and Chemical Properties of Chloroethane

Property	Information	Reference
Molecular weight	64.52 g/mol	Budavari et al. 1989
Color	Colorless	Morris and Tasto 1979
Physical state	Gas	Budavari et al. 1989
Melting point	-138.7°C	Budavari et al. 1989
Boiling point	32.5°C at 2 atm; 12.3°C at 760 torr	Budavari et al. 1989, 1996
Specific gravity at 0°C	0.9214	Budavari et al. 1996
Density at 20°C	0.8970	Morris and Tasto 1979
Odor	Ethereal, pungent	NLM 2023
Odor threshold:		
Water	0.019 ppm (w/v)	Amoore and Hautala 1983
Air	4.2 ppm (v/v) (11.3 g/L)	Amoore and Hautala 1983

Table 4-2. Physical and Chemical Properties of Chloroethane

Property	Information	Reference
Solubility:		
Water at 20°C	0.574 g/100 mL	Budavari et al. 1989
Organic solvents	Alcohol: 48.3 g/100 mL	Budavari et al. 1989
Partition coefficients:		
Log K_{ow}	1.43	NLM 2023
Log K_{oc}	1.52 (estimated using equation 4–7)	Lyman 1982
K_{oc}	143; 33 (using log K_{oc} of 1.52)	Lyman 1982
Vapor pressure at 20°C	1,008 mmHg	Daubert and Danner 1985
Henry's law constant at 25°C	$1.11x10^{-2}$ atm•m^3/mole (24.8 C)	Gossett 1987
Autoignition temperature	519°C	Morris and Tasto 1979
Flashpoint		
Open cup	-43°C	Budavari et al. 1989
Closed cup	-50°C	Budavari et al. 1989
Conversion factors:		
ppm (v/v) to mg/m^3 in air (20°C)	ppm (v/v) x 2.68 = mg/m^3	Budavari et al. 1989
mg/m^3 to ppm in air (20°C)	mg/m^3 x 0.373 = ppm (v/v)	Budavari et al. 1989
Explosive limits in air	3.6–14.8 volume %	Budavari et al. 1989