3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

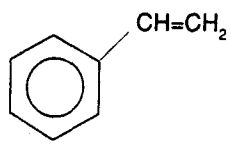
Table 3-1 lists common synonyms, trade names and other pertinent identification information for styrene.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

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

3. CHEMICAL AND PHYSICAL INFORMATION

TABLE 3-1. Chemical Identity of Styrene

Characteristic	Information	Reference
Chemical name	Styrene	Verschueren 1983
Synonyms	Vinylbenzene; ethenylbenzene; cinnamene; phenylethylene	Verschueren 1983
Trade names	No data	
Chemical formula	C_8H_8	Windholz 1983
Chemical structure		
Identification numbers:		
CAS registry	100-42-5	Sax and Lewis 1987
NIOSH RTECS	WL3675000	HSDB 1989
EPA hazardous waste	No data	
OHM/TADS	7216911	HSDB 1989
DOT/UN/NA/IMCO shipping	UN 2055 IMCO 3.3	NLM 1989 HSDB 1989
HSDB	171	HSDB 1989
NCI	C02200	NLM 1989

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

TABLE 3-2. Physical and Chemical Properties of Styrene

Property	Information	Reference
Molecular weight	104.16	Weast 1985
Color	Colorless to yellowish	Windholz 1983
Physical state	Liquid	Sax and Lewis 1987
Melting point	-30.6°C	Weast 1985
Boiling point	145.2°C	Weast 1985
Density at 20°C	0.906	Weast 1985
Odor	Sweet, sharp	Verschueren 1983
Odor threshold:		
Water	0.73 mg/L	HSDB 1989
	0.011 mg/L	Amoore and Hautala 1983
Air	1.36 mg/m^3	Amoore and Hautala 1983
Solubility:		
Water at 20°C	300 mg/L	Verschueren 1983
Organic solvents	Soluble in alcohol, ether, acetone, carbon disulfide	Windholz 1983
Partition coefficients:		
Log octanol/water	2.95	EPA 1984a
Log K_{oc}	No data	
Vapor pressure at 20°C	5 mmHg	Verschueren 1983
Henry's law constant: at 25°C	2.61 x 10^{-3} atm-m^3/mol (calculated)	EPA 1983
Autoignition temperature	914°F (490°C)	Sax and Lewis 1987
Flashpoint	87°F (31°C) (closed cup)	Windholz 1983
Flammability limits	No data	
Conversion factors	1 mg/m^3 = 0.23 ppm	Verschueren 1983
	1 ppm = 4.33 mg/m^3	Verschueren 1983
Explosive limits	1.1-6.1%	Sax and Lewis 1987