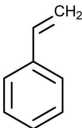


Styrene: Chemical Identity & Physical Properties

GENERAL INFORMATION	
Chemical name	Styrene
Synonyms	Cinnamene, ethenylbenzene, phenylethylene, styrol, vinylbenzene
Chemical formula	C ₈ H ₈
Chemical structure	
Molecular weight	104.15 g/mol
Color	Colorless to yellow
Odor	Sweet, aromatic (if pure) Sharp, penetrating, unpleasant (commercial grades)
Physical state	Oily liquid
Identification numbers	CAS Registry: 100-42-5 EINICS: 202-851-5 DOT/UN/NA/IMDG shipping: IMDG 3.3; UN 2055

PHYSICAL PROPERTIES	
Characteristic	Property
Melting point/freezing point	-30.6°C (-23.1°F)
Boiling point	145.2°C (293.4°F)
Density at 20°C	0.9059 g/cm ³
Odor threshold	
Water	0.73 mg/L
Air	0.1 ppm (0.43 mg/m ³)
Solubility	
Water at 20°C	300 mg/L (0.03% wt.vol.)
Organic solvents	Soluble in alcohol, ether, acetone, carbon disulfide
Partition coefficients	
Log K_{ow}	2.95
Log K_{oc}	2.96
Vapor density (air = 1)	3.6
Vapor pressure at 20°C	5 mmHG (5 mbar)
Henry's law constant (at 25°C)	0.00261 atm·m ³ /mol (calculated)
Autoignition temperature	490°C (914°F)
Explosive limits in air	0.9-6.8% vol.
Flashpoint	31°C (87°F), closed cup 34.4°C (93.9°F), Tag open cup
Flammability limits	0.9-1.1 (lower); 6.1-6.8 (higher)
Conversion factors	1 mg/m ³ =0.23 ppm 1 ppm=4.33 mg/m ³

Published by SIRC, Jan.2014. Source:

Adapted from ATSDR Toxicological Profile for Styrene and the website of the European Styrene Producers Association.