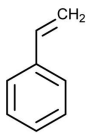


# Styrene: Chemical Identity & Physical Properties

General Information	
Chemical name	Styrene
Synonyms	Cinnamene, ethenylbenzene, phenylethylene, styrol, vinylbenzene
Chemical formula	C <sub>8</sub> H <sub>8</sub>
Chemical structure	
Molecular weight	104.15
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
Odor threshold	
Water	0.73 mg/L
Air	0.1 ppm (0.43 mg/m <sup>3</sup> )
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 <sub>OW</sub>	2.95
Log K <sub>OC</sub>	2.96
Vapor density (air = 1)	3.6
Vapor pressure at 20 °C	5 mmHG (5 mbar)
Henry's law constant (at 25 °C)	261x10 <sup>-3</sup> atm·m <sup>3</sup> /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 <sup>3</sup> =0.23 ppm 1 ppm=4.33 mg/m <sup>3</sup>