

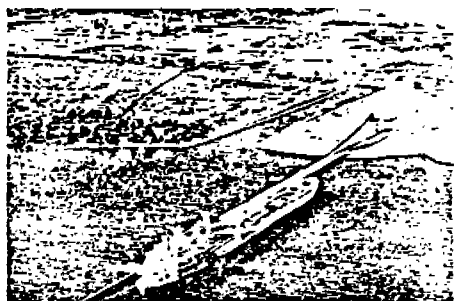
Vinyl Chloride



In keeping with its position as a leading producer of vinyl chloride monomer for the merchant market only, PPG Industries expanded its Lake Charles, Louisiana, vinyl chloride plant in 1969. The Guayanilla, Puerto Rico plant, built in 1971, greatly increased PPG's capacity for making vinyl chloride monomer.

A new large tanker, the S.S. Puerto Rican, transports refrigerated vinyl chloride monomer to a terminal at Paulsboro, New Jersey, where it is stored under refrigeration.

PPG produces vinyl chloride monomer by the oxyhydrochlorination of ethylene and holds more than 400 domestic and foreign patents on this process.



At the PPG plant in Guayanilla, Puerto Rico, the company's modern 34,000-ton chemical tanker, S.S. Puerto Rican, receives a load of vinyl chloride monomer.



At the Paulsboro, New Jersey terminal, the S.S. Puerto Rican's load of vinyl chloride monomer is transferred to the refrigerated storage tanks in the background.

Uninhibited VCM is quite stable and can be routinely shipped, handled and stored provided proper procedures, outlined below, are followed. To prevent polymerization in transit or storage, it is essential that the monomer be protected at all times from contact with air, oxygen, moisture, catalytic impurities and light.

PPG normally supplies VCM uninhibited. The use of uninhibited VCM eliminates the need for subsequent processing to remove the inhibitor. If required, suitable inhibitors will be added.

More information appears in the PPG manual, "Vinyl Chloride Monomer Handling and Properties," form A-994-115R.

GRADES

PPG Industries produces only polymer-grade vinyl chloride monomer.

USES

Most vinyl chloride is polymerized to polyvinyl chloride (PVC) or copolymerized with other monomers such as PPG's vinylidene chloride. Vinyl chloride monomer should not be used as an aerosol propellant.

TOXICITY

The Occupational Safety and Health Standard on exposure to vinyl chloride published October 4, 1974, says: "Based on the demonstrated evidence of vinyl

PROPERTIES

Chemical Names:

Vinyl chloride; vinyl chloride monomer; chloroethylene; chloroethene

Chemical Formula:

CH_2CHCl ;

Molecular Weight:

62.5

Description:

At ordinary temperatures and pressures, vinyl chloride is a colorless gas with a mild, sweet odor. But as supplied in tank cars and trucks under pressure, it is a liquid. Vinyl chloride is highly volatile and its vapor is extremely flammable. Containers are labeled "cancer-suspect agent."

Boiling Point, °C

−13.8

°F

+7.0

Freezing Point, °C

−153.7

°F

−245

Flash Point, open cup °C

−78

°F

−108.4

Autoignition Temperature, °C

472

°F

882

Liquid Density at 60°F

0.9192

Vapor Density, air=1

2.15

Vapor Pressure, psia at 0°C

25.1

20°C

49.2

40°C

87.6

Explosive Limits, volume %

in air at 25°C (77°F)

3.6 to 33

Solubility, water in monomer,

at 25°C (77°F), weight %

0.11

Solubility: Vinyl chloride is relatively insoluble in water but soluble in most organic solvents.

Reactivity: Vinyl chloride polymerizes exothermically in the presence of light, air, oxygen or catalysts. Heat alone will not initiate polymerization. Vinyl chloride is thermally stable to quite high temperatures. Although peroxide formation due to air exposure is a slow reaction, certain peroxide products are shock-sensitive. Vinyl chloride is noncorrosive to metals when dry at normal temperatures, but water and elevated temperatures accelerate corrosion. The double bond behaves as in other unsaturated compounds. The chlorine atom is relatively inactive and is more stable than in saturated or allylic compounds.

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