

Dichloro(methyl)(vinyl)silane

This document is a high-level summary intended to provide the general public with an overview of product safety for this substance. It is not intended to replace the Material Safety Data Sheet (MSDS), which is available from suppliers and should be referred to for full details of recommended safety procedures for each type of use. It is not intended to replace or supersede manufacturer's instructions and warnings for their consumer products containing this substance.

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An additional document for the safe handling of chlorosilanes can be found at: <http://www.silicones-safety.eu/files/Chlorosilanes%20Manual%2022082003.pdf>

Substance Name and Chemical Identity

Chemical Name:
Dichloro(methyl)(vinyl)silane

CAS Number:
124-70-9

Molecular formula:
 $C_3H_6Cl_2Si$

Uses and Applications

Dichloro(methyl)(vinyl)silane is an organic silicon substance containing alkyl sidechains that has been used in the following applications:

- Use as a monomer ('building block') in the production of silicone polymers. Silicone polymers may be oils, greases, rubbers and resins, and have a wide range of uses.
- Use as an intermediate (starting material) in the production of other organosilicon substances.

The substance is not suitable for use by the general public. The applications described generally take place in industrial settings under highly controlled conditions. Although the end uses of products made from dichloro(methyl)(vinyl)silane will vary, it is expected that due to its highly reactive nature, no residual unreacted material will be present in any of the final products.

Physical/Chemical Properties

Dichloro(methyl)(vinyl)silane is a corrosive, moderately volatile and highly flammable liquid with a low boiling point. It reacts violently with water, rapidly breaking down to methyl(vinyl)silanediol and hydrochloric acid. The substance is classified for hazardous physicochemical properties under the EU Globally Harmonized System (GHS) as:

- Flammable Liquid Category 2; 'H225: Highly flammable liquid and vapor'

In the EU, an additional hazard statement also applies:

- 'EUH014: Reacts violently with water'

Property	Value
Physical state	Liquid
Color	Colorless/transparent
Odor	Pungent odor
Molecular weight	141.1 g/mol
Melting/boiling point	-95°C/93.8°C
Density	1.07 g/cm ³
Vapor pressure	5880 Pa at 20°C
Flammability	Highly flammable
Flash point	3.4 at 101.3 kPa
Self-ignition temperature	286°C at 101.3 kPa
Explosive properties	Not explosive

Health Information

Dichloro(methyl)(vinyl)silane is classified for human health hazards under the EU Globally Harmonized System (GHS) as:

- Acute Toxic Category 4 (Oral); 'H302: Harmful if swallowed'
- Acute Toxic Category 3 (Vapor); 'H331: Toxic if inhaled'
- Skin Corrosion Category 1A; 'H314: Causes severe skin burns and eye damage'
- Eye Damage Category 1; 'H318: Causes serious eye damage'

In the EU, an additional hazard statement also applies:

- 'EUH071: Corrosive to the respiratory tract'

Environmental Information

Dichloro(methyl)(vinyl)silane is not classified for environmental effects under the EU Globally Harmonized System (GHS).

Exposure Potential

Consumer exposure:

There are no consumer uses of dichloro(methyl)(vinyl)silane. It is expected that there is no residual dichloro(methyl)(vinyl)silane in end-products manufactured using the substance.

Workplace exposure: This refers to potential for worker exposure at manufacturing sites, industrial workplaces, and laboratories. Due to the corrosive and highly flammable nature of the substance, all aspects of dichloro(methyl)(vinyl)silane handling, including on-site storage and transfer, require highly controlled conditions. Further details are given in the Safety Data Sheet and CES Guidance Document on safe handling.

Environmental releases:

Manufacturing generally occurs under controlled conditions and is typically subject to stringent regulations, with only very small releases to air and wastewater. Environmental exposure can be minimized by applying air and wastewater abatement technologies to remove unreacted substance and reaction products. The use of appropriate measures to manage environmental release is described in the Safety Data Sheet and CES Guidance Document on safe handling.

Risk Management Recommendations

Consumer risk management: There are no consumer uses of this substance.

Industrial risk management: For more detailed information please refer to the Safety Data Sheet and the chlorosilanes safe handling document for information on protecting workers and limiting environmental exposure at industrial sites. In summary, when using this chemical, there must be adequate ventilation. Suitable respiratory protection must be worn if the product is handled in large quantities in confined spaces. Chemical-resistant clothing and gloves, and safety glasses or other suitable eye protection must be worn. Avoid sources of ignition and keep containers tightly closed, in a dry and cool place. In a laboratory setting, local exhaust ventilation must be in place and personal protective equipment must be worn with adherence to good laboratory practice.

Conclusions

Dichloro(methyl)(vinyl)silane is used only under highly controlled conditions at industrial sites or in laboratories. The manufacturing and use of dichloro(methyl)(vinyl)silane does not pose a significant risk to humans or the environment if instructions in the Safety Data Sheet and applicable legal requirements are followed.

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