1. Substance Name and Chemical Identity

**Chemical Name:** (3-Chloropropyl)triethoxysilane  
**CAS Number:** 5089-70-3  
**Molecular formula:** C₉H₂₁ClO₃Si

2. Uses and Applications

(3-Chloropropyl)triethoxysilane is an organic silicon substance that has the following uses:

- an intermediate (starting material) in the production of other organosilicon chemicals;
- a monomer ('building block') in the production of silicone polymers or, more likely, silicone resins, usually in combination with other organochloro- or organoalkoxy-silane monomers;
- *in situ* polymer treatment/rubber mix, to enhance the adhesion properties of the surface;
- a laboratory reagent in research and development activities.

The substance is not found in products used by the general public. The applications described takes place in industrial settings or research laboratories under controlled conditions.

3. Physical/chemical properties

(3-Chloropropyl)triethoxysilane is a liquid at standard temperature and pressure. When in contact with water, the substance reacts, breaking down to (3-chloropropyl)silanetriol and ethanol. (3-Chloropropyl)triethoxysilane is classified as either a flammable liquid or a combustible liquid, based on the flash point and boiling point. The flash point may vary, as different manufacturers have different concentrations of impurities in their products. The substance is classified under the Globally Harmonised System (GHS) in one of the two following categories:

EITHER

<table>
<thead>
<tr>
<th>Flammable Liquid Category 3</th>
<th>H226: Flammable liquid and vapour</th>
</tr>
</thead>
</table>

Flammable Liquid Category 4 | H227: Combustible liquid | No pictogram required

GHS Category 4 (Combustible Liquid) is not part of EU Regulation 1272/2008 (CLP); therefore, in the EU products that fall into this category are not classified for flammability and are referred to as non-flammable.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>None reported</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>240.8 g/mol</td>
</tr>
<tr>
<td>Melting/boiling point</td>
<td>&lt;-20°C / 221°C</td>
</tr>
<tr>
<td>Density</td>
<td>1.004 g/cm³ at 20°C</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>30.9 Pa at 25°C</td>
</tr>
<tr>
<td>Flammability</td>
<td>Flammable or combustible/non-flammable (depending on the profile of the individual manufacturer's product and the region; see above)</td>
</tr>
<tr>
<td>Flash point</td>
<td>51°C to 86°C</td>
</tr>
<tr>
<td>Self-ignition temperature</td>
<td>220°C</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
</tbody>
</table>

4. Health information

(3-Chloropropyl)triethoxysilane is not classified for human health effects under the Globally Harmonised System (GHS).

5. Environmental information

(3-Chloropropyl)triethoxysilane is not classified for environmental effects under the Globally Harmonised System (GHS).

6. Exposure potential

**Consumer and Professional exposure:** There are no consumer or professional uses of (3-chloropropyl)triethoxysilane.

**Workplace exposure:** This refers to the potential for worker exposure at manufacturing sites or industrial workplaces. At industrial sites, all aspects of (3-chloropropyl)triethoxysilane handling, including on-site storage and transfer, are subject to procedural and technological control using Best Available Technique (BAT). Further details are given in the Safety Data Sheet.
**Environmental releases:** Manufacturing occurs under controlled conditions, with minimal releases to air and waste water. Environmental exposure is minimised through the application of waste water treatment technologies to remove unreacted substance and reaction products. The use of appropriate measures to manage environmental release is described in the Safety Data Sheet.

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7. Risk management recommendations

**Consumer and professional risk management:** There are no consumer or professional uses of this substance.

**Industrial risk management:** Please refer to the Safety Data Sheet for more detailed information on protecting workers and limiting environmental exposure at industrial sites. When using this chemical, there must be adequate ventilation; protective clothing, appropriate gloves, and eye protection must be worn; and training of workers is required. Releases to the environment should be minimised by use of waste water treatment.

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8. Conclusions

(3-Chloropropyl)triethoxysilane is used only under controlled conditions at industrial sites and in research laboratories. The manufacturing and use of (3-chloropropyl)triethoxysilane does not pose a risk to humans or the environment if instructions in the Safety Data Sheet are followed.

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9. Contact Information

For further information on this substance or product safety summaries in general, please contact:

Dow Corning EH&S Team