

Section 1. Product and Company Identification

**Product Name** Ethyl Chloroformate  
**CAS Number** 541-41-3

**Parchem - fine & specialty chemicals**  
**415 Huguenot Street**  
**New Rochelle, NY 10801**  
☎ (914) 654-6800 ☎ (914) 654-6899  
🌐 [parchem.com](http://parchem.com) ✉ [info@parchem.com](mailto:info@parchem.com)

EMERGENCY RESPONSE NUMBER  
CHEMTEL  
Toll Free US & Canada: 1 (800) 255-3924  
All other Origins: 1 (813) 248-0585  
Collect Calls Accepted

Section 2. Hazards Identification

**Classification of the substance or mixture**

**GHS label elements**

According to OSHA 29 CFR 1910.1200 HCS

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**GHS Label Elements**

**Pictograms:**



**Signal word:** DANGER

**Hazard and precautionary statements**

**Hazard Statements**

H225 Highly flammable liquid and vapor.  
H302 Harmful if swallowed.  
H330 Fatal if inhaled.  
H314 Causes severe skin burns and eye damage.  
H400 Very toxic to aquatic life.

**Precautionary Statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P260 Do not breathe dusts or mists.  
P284 Wear respiratory protection.  
P280 Wear protective gloves/eye protection/face protection.  
P240 Ground/bond container and receiving equipment.  
P242 Use only non-sparking tools.



P273 Avoid release to the environment.  
P243 Take precautionary measures against static discharge.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a poison center/doctor.  
P320 Specific treatment is urgent (see on this label).  
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P363 Wash contaminated clothing before reuse.  
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.  
P370+P378 In case of fire: Use for extinction: CO<sub>2</sub>, powder, or water spray.  
P391 Collect spillage.  
P405 Store locked up.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**NFPA Rating**

**Health:** 2  
**Flammability:** 3  
**Reactivity:** 0

**HMIS Rating**

**Health:** 2  
**Flammability:** 3  
**Reactivity:** 0

**Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** No data available  
**vPvB:** No data available

Section 3. Composition / Information on Ingredients

<b>Common Name</b>	Ethyl Chloroformate
<b>CAS Number</b>	541-41-3

#### Section 4. First Aid Measures

**Description of first-aid measures**

**Inhalation:** Supply fresh air; consult doctor in case of complaints.

**Skin contact:** Generally the product does not irritate the skin.

**Eye contact:** Rinse opened eye for several minutes under running water.

**Ingestion:** If symptoms persist consult doctor.

**Most important symptoms and effects, both acute and delayed:** No further relevant information available.

**Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

#### Section 5. Firefighting Measures

**Extinguishing media:** CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Suitable extinguishing agents:** CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture:** No further relevant information available.

**Advice for firefighters**

**Protective equipment:** Wear self-contained respiratory protective device

#### Section 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Wear protective equipment. Keep unprotected persons away.

**Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:** Dispose of the collected material according to regulations.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

#### Section 7. Handling and Storage

**Precautions for safe handling:** Do not get in eyes, on skin or clothing.

**Information about protection against explosions and fires:** Protect against electrostatic charges.



**Conditions for safe storage, including any incompatibilities:** Store locked up. Keep containers tightly closed in a cool, well-ventilated place. Keep away from incompatibles

#### Storage

**Requirements to be met by storerooms and receptacles:** Recommended storage temperature 2 - 8°C

**Information about storage in one common storage facility:** Store away from water.

**Further information about storage conditions:** None.

### Section 8. Exposure Controls / Personal Protection

**Additional information about design of technical systems:** No further data; see item 7.

#### Control parameters

**Components with limit values that require monitoring at the workplace:** No data available

#### Exposure Controls

##### Personal protective equipment

**General protective and hygienic measures:** Wash hands before breaks and at the end of work.

**Breathing equipment:** Not required.

**Protection of hands:** Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

**Material of gloves:** The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Penetration time of glove material:** The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:** Tightly sealed goggles

**Body protection:** Use protective suit.

### Section 9. Physical and Chemical Properties

**Appearance:** Liquid

**Color:** Colorless

**Odor:** Pungent

**Odor threshold:** Not determined.

**pH Value:** < 7

**Melting point/Melting range:** -81°C (-114°F)



**Boiling point/Boiling range:** 93°C (199°F)

**Flash point:** 16°C (61°F)

**Flammability (solid, gaseous):** Flammable Liquid.

**Ignition temperature:** No data available

**Decomposition temperature:** No data available

**Auto igniting:** No data available

**Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

#### **Explosion limits**

**Lower:** 3.7 Vol % (at 37 hPa)

**Upper:** 12.6 Vol % (125.5 hPa)

**Oxidizing properties:** No data available

**Vapor pressure (20°C/68°F):** 54.6 hPa (41 mm Hg)

**Density (20°C/68°F):** 1.14 g/cm<sup>3</sup> (9.513 lbs/gal)

**Relative density (25°C/77°F):** 1.135 g/cm<sup>3</sup> (9.472 lbs/gal)

**Vapor density:** 3.75 g/cm<sup>3</sup> (31.294 lbs/gal) ((Air=1.0))

**Evaporation rate:** No data available

**Solubility in / Miscibility with Water:** Hydrolyzed.

**Partition coefficient (n-Octanol/water):** No data available

#### **Viscosity**

**Dynamic:** No data available

**Kinematic:** No data available

**Other information:** No further relevant information available.

### Section 10. Stability and Reactivity

#### **Reactivity**

##### **Chemical stability**

**Thermal decomposition/conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions:** No dangerous reactions known.

**Conditions to avoid:** Sensitive to moisture

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.

### Section 11. Toxicological Information

#### **Information on toxicological effects**

##### **Acute toxicity**



LD/LC50 values that are relevant for classification		
Oral	LD50	270 mg/kg (rat)
Dermal	LD50	7120 mg/kg (rabbit)
Inhalation	LC50/4 h	145 mg/l (rat)

**Primary irritant effect**

on the skin: Causes sever skin burns.  
on the eye: Causes severe eye damage

**Sensitization:** No sensitizing effects known.

**Additional toxicological information:** N/A

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer):** Substance is not listed.

**NTP (National Toxicology Program):** Substance is not listed.

**OSHA-Ca (Occupational Safety & Health Administration):** Substance is not listed.

Section 12. Ecological Information

**Toxicity**

**Aquatic toxicity:** Toxic to aquatic life with long lasting effect

**Persistence and degradability:** No further relevant information available.

**Bioaccumulative potential:** No further relevant information available.

**Mobility in soil:** No further relevant information available

**Additional ecological information:**

**General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**Results of PBT and vPvB assessment**

**PBT:** No data available

**vPvB:** No data available

**Other adverse effects:** No further relevant information available

Section 13. Disposal Considerations

**Waste Treatment Methods:** Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

**DOT, ADR, IMDG, IATA**

**UN-Number:** UN1182



**Proper shipping name:** Ethyl Chloroformate, ENVIRONMENTALLY HAZARDOUS

**Transport hazard class(es):** 6.1(3,8)

**Packing group:** I

**Environmental hazards:** Environmentally hazardous substance, liquid

**Marine pollutant:** Yes

**Special marking (ADR):** Symbol (fish and tree)

**Special precautions for user Warning:** Toxic substances

**Danger code (Kemler):** 663

**EMS Number:** F-E,S-C

Segregation groups Acids

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** No data available

**UN "Model Regulation":** UN1182, Ethyl chloroformate, Environmentally Hazardous, 6.1 (3,8), I

Section 15. Regulatory Information

**Safety, health, and environmental regulations/legislation specific for the substance or mixture**

**SARA**

**Section 355 (extremely hazardous substances):** Substance is not listed.

**Section 313 (Specific toxic chemical listings):** Substance is listed.

**TSCA (Toxic Substances Control Act):** Substance is listed.

**Proposition 65**

**Chemicals known to cause cancer:** Substance is not listed.

**Chemicals known to cause reproductive toxicity for females:** Substance is not listed.

**Chemicals known to cause reproductive toxicity for males:** Substance is not listed.

**Chemicals known to cause developmental toxicity:** Substance is not listed.

**Carcinogenic Categories**

**EPA (Environmental Protection Agency):** Substance is not listed.

**TLV (Threshold Limit Value established by ACGIH):** Substance is not listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health):** Substance is not listed.

**GHS label elements:** According to OSHA 29 CFR 1910.1200 HCS

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.



Section 16. Other Information

**Disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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