1. Identification

Product Name Propionyl chloride
Cat No. AC131530000; AC131530025; AC131530250; AC131532500; AC131535000
CAS-No 79-03-8
Synonyms Propionic acid chloride; Propionic chloride; Propanoyl chloride
Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11
Emergency Number US:001-201-796-7100 / Europe: +32 14 57 52 99
CHEMTREC Tel. No.US:001-800-424-9300 / Europe:001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

- Flammable liquids Category 2
- Acute oral toxicity Category 4
- Acute Inhalation Toxicity - Vapors Category 3
- Skin Corrosion/Irritation Category 1 B
- Serious Eye Damage/Eye Irritation Category 1
- Specific target organ toxicity (single exposure) Category 3
- Target Organs - Respiratory system.

Label Elements

Signal Word Danger

Hazard Statements
Propionyl chloride

Revision Date 25-Apr-2019

Highly flammable liquid and vapor
Harmful if swallowed
Causes severe skin burns and eye damage
May cause respiratory irritation
Toxic if inhaled

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
Rinse mouth
Do NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Reacts violently with water

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionyl chloride</td>
<td>79-03-8</td>
<td>&gt;95</td>
</tr>
<tr>
<td>Phosgene</td>
<td>75-44-5</td>
<td>&lt;0.2</td>
</tr>
</tbody>
</table>
4. First-aid measures

**Eye Contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

**Skin Contact**
Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Inhalation**
Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

**Ingestion**
Do NOT induce vomiting. Call a physician or poison control center immediately.

**Most important symptoms and effects**
Difficulty in breathing. Causes burns by all exposure routes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Notes to Physician**
Treat symptomatically

5. Fire-fighting measures

**Suitable Extinguishing Media**
CO₂, dry chemical, dry sand, alcohol-resistant foam. Water mist may be used to cool closed containers.

**Unsuitable Extinguishing Media**
DO NOT USE WATER

**Flash Point**
11 °C / 51.8 °F

**Method -**
No information available

**Autoignition Temperature**
270 °C / 518 °F

**Explosion Limits**
Upper 11.90 vol %
Lower 3.60 vol %

**Sensitivity to Mechanical Impact**
No information available

**Sensitivity to Static Discharge**
No information available

**Specific Hazards Arising from the Chemical**
Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Contact with water liberates toxic gas.

**Hazardous Combustion Products**

**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

6. Accidental release measures

**Personal Precautions**
Ensure adequate ventilation. Use personal protective equipment as required. Evacuate
personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges. Should not be released into the environment. See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not expose spill to water.

7. Handling and storage

Handling
Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use spark-proof tools and explosion-proof equipment. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance. Take precautionary measures against static discharges. Reacts violently with water. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. Keep away from water or moist air.

8. Exposure controls / personal protection

Exposure Guidelines

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>Mexico OEL (TWA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosgene</td>
<td>TWA: 0.1 ppm</td>
<td>(Vacated) TWA: 0.1 ppm</td>
<td>IDLH: 2 ppm</td>
<td>TWA: 0.1 ppm</td>
</tr>
<tr>
<td></td>
<td>(Vacated) TWA: 0.4 mg/m³</td>
<td>TWA: 0.1 ppm</td>
<td>TWA: 0.4 mg/m³</td>
<td>TWA: 0.4 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.1 ppm</td>
<td>Ceiling: 0.2 ppm</td>
<td>Ceiling: 0.8 mg/m³</td>
<td>TWA: 0.1 ppm</td>
</tr>
</tbody>
</table>

Legend
ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State
Liquid
Propionyl chloride

Appearance
Colorless

Odor
Pungent

Odor Threshold
No information available

pH
< 7

Melting Point/Range
-94 °C / -137.2 °F

Boiling Point/Range
77 - 79 °C / 170.6 - 174.2 °F @ 760 mmHg

Flash Point
11 °C / 51.8 °F

Evaporation Rate
No information available

Flammability (solid,gas)
Not applicable

Flammability or explosive limits
Upper
11.90 vol %

Lower
3.60 vol %

Vapor Pressure
106 mbar @ 20 °C

Vapor Density
3.2

Specific Gravity
1.060

Solubility
Reacts with water

Partition coefficient; n-octanol/water
No data available

Autoignition Temperature
270 °C / 518 °F

Decomposition Temperature
190°C

Viscosity
0.48 mPa.s @ 20°C

Molecular Formula
C3 H5 Cl O

Molecular Weight
92.52

10. Stability and reactivity

Reactive Hazard
Yes

Stability
Reacts violently with water. Contact with water liberates toxic gas.

Conditions to Avoid
Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moist air or water.

Incompatible Materials
Strong oxidizing agents, Bases, Alcohols, Amines

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen chloride gas

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
Contact with water liberates toxic gas.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionyl chloride</td>
<td>823 mg/kg</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Phosgene</td>
<td>Not listed</td>
<td>Not listed</td>
<td>LC50 = 8.6 mg/m³ (Rat) 4 h</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products
No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation
Causes burns by all exposure routes

Sensitization
No information available

Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
</table>

Page 5 / 8
**Propionyl chloride**

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionyl chloride</td>
<td>Not listed</td>
<td>LC50: 215-464 mg/L/96h (Brachydanio rerio)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Persistence and Degradability**
Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation**
No information available.

**Mobility**
Will likely be mobile in the environment due to its volatility.

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionyl chloride</td>
<td>0.02</td>
</tr>
</tbody>
</table>

**12. Ecological information**

**Ecotoxicity**
Do not empty into drains. Reacts with water so no ecotoxicity data for the substance is available.

**13. Disposal considerations**

**Waste Disposal Methods**
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

**14. Transport information**

**DOT**

<table>
<thead>
<tr>
<th>UN-No</th>
<th>PROPIONYL CHLORIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>PROPIONYL CHLORIDE</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>3</td>
</tr>
<tr>
<td>Subsidiary Hazard Class</td>
<td>8</td>
</tr>
<tr>
<td>Packing Group</td>
<td>II</td>
</tr>
<tr>
<td>TDG</td>
<td></td>
</tr>
<tr>
<td>UN-No</td>
<td>UN1815</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>PROPIONYL CHLORIDE</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>3</td>
</tr>
<tr>
<td>Subsidiary Hazard Class</td>
<td>8</td>
</tr>
</tbody>
</table>
15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active/Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionyl chloride</td>
<td>79-03-8</td>
<td>X</td>
<td>ACTIVE</td>
<td></td>
</tr>
<tr>
<td>Phosgene</td>
<td>75-44-5</td>
<td>X</td>
<td>ACTIVE</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- TSCA - Toxic Substances Control Act, (40 CFR Part 710)
- X - Listed
- ' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionyl chloride</td>
<td>79-03-8</td>
<td>-</td>
<td>X</td>
<td>201-170-0</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-29372</td>
</tr>
<tr>
<td>Phosgene</td>
<td>75-44-5</td>
<td>X</td>
<td>-</td>
<td>200-870-3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-28456</td>
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</tbody>
</table>

U.S. Federal Regulations

SARA 313

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosgene</td>
<td>75-44-5</td>
<td>&lt;0.2</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

<table>
<thead>
<tr>
<th>Component</th>
<th>CWA - Hazardous Substances</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosgene</td>
<td>X</td>
<td>10 lb</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Clean Air Act

<table>
<thead>
<tr>
<th>Component</th>
<th>HAPS Data</th>
<th>Class 1 Ozone Depleters</th>
<th>Class 2 Ozone Depleters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosgene</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OSHA - Occupational Safety and Health Administration Not applicable

<table>
<thead>
<tr>
<th>Component</th>
<th>Specifically Regulated Chemicals</th>
<th>Highly Hazardous Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosgene</td>
<td></td>
<td>TQ: 100 lb</td>
</tr>
</tbody>
</table>
Propionyl chloride

CERCLA

<table>
<thead>
<tr>
<th>Component</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA EHS RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionyl chloride</td>
<td>10 lb</td>
<td>10 lb</td>
</tr>
</tbody>
</table>

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propionyl chloride</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Phosgene</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security

This product contains the following DHS chemicals:

Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

<table>
<thead>
<tr>
<th>Component</th>
<th>DHS Chemical Facility Anti-Terrorism Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosgene</td>
<td>Release STQs - 500lb</td>
</tr>
<tr>
<td></td>
<td>Theft STQs - 15lb</td>
</tr>
</tbody>
</table>

Other International Regulations

Mexico - Grade
Serious risk, Grade 3

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date
06-May-2010
Revision Date
25-Apr-2019
Print Date
25-Apr-2019
Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of SDS