1. PRODUCT AND COMPANY IDENTIFICATION

Product name: 2-Chloropropane
Product Number: 49863
Brand: Aldrich
Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63003
USA
Telephone: +1 800-325-5632
Fax: +1 800-325-5602
Emergency Phone # (For both supplier and manufacturer): (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8558

2. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
Flammable liquid, Target Organ Effect
Target Organs
Liver, Nerves.
GHS Classification
Flammable liquids (Category 1)
Acute toxicity, Oral (Category 5)
Acute toxicity, Inhalation (Category 4)
GHS Label elements, including precautionary statements
Pictogram
Signal word Danger
Hazard statement(s)
H224 Extremely flammable liquid and vapour.
H303 May be harmful if swallowed.
H332 Harmful if swallowed.
Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

3. COMPOSITION INFORMATION ON INGREDIENTS

Synonyms: Isopropyl chloride
Formula: C3H7Cl
Molecular Weight: 76.54 g/mol
Component Concentration
2-Chloropropane
CAS-No: 75-29-6
EC-No: 200-056-8
Index-No: 602-016-00-X

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Flush eyes with water as a precaution.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters
Wear self-contained breathing apparatus for fire fighting if necessary.
Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Blow or vacuum vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions
Prevent further leakage or spillage if it is safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet brushing and place in containers for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Handle and open container with care.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Chloropropane</td>
<td>75-29-6</td>
<td>TWA</td>
<td>50 ppm</td>
<td>USA, Workplace Environmental Exposure Levels (WEL)</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Breakthrough time: 480 min
Material tested: Visitech® (KCL 890 / Aldrich 2677689, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Breakthrough time: 480 min
Material tested: Visitech® (KCL 890 / Aldrich 2677689, Size M)

data source: KCL GmbH, D-36124 Eschenzell, phone +49 (0)6656 87300, e-mail salong@kcl.de, test method: EN734
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use/environment.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Form</th>
<th>Colour</th>
<th>Safety data</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>liquid</td>
<td>no data available</td>
<td>no data available</td>
</tr>
<tr>
<td>melting point</td>
<td>Melting point range: -118 °C (-180 °F) - 71 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>boiling point</td>
<td>34 - 36 °C (93 - 97 °F) - 71 °C</td>
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<td></td>
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<tr>
<td>flash point</td>
<td>-21 °C (-8 °F) - closed cup</td>
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<td></td>
</tr>
<tr>
<td>ignition temperature</td>
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<td></td>
</tr>
<tr>
<td>auto-ignition temperature</td>
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<td></td>
</tr>
<tr>
<td>lower explosion limit</td>
<td>2.4 % (V)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vapour pressure</td>
<td>552.1 kPa (4444.9 mmHg) at 23 °C (73 °F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>water solubility</td>
<td>1.937 6 g/l (1.453 3 mmHg) at 25 °C (77 °F)</td>
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<td></td>
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<tr>
<td>density</td>
<td>0.859 g/cm3 at 25 °C (77 °F)</td>
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<td></td>
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<tr>
<td>partition coefficient</td>
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</tr>
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</tr>
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<td></td>
</tr>
<tr>
<td>evaporation rate</td>
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<td></td>
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</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid
Strong oxidizing agents, Strong bases, Metals

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION
Acute toxicity

Oral LD50
LD50 Oral - rat: 5,000 mg/kg
Remarks: Autonomic Nervous System: Other (direct) parasympathomimetic. Behavioral: Somnolence (general depressed activity), Cyanosis

Inhalation LC50
LC50 Inhalation - rat: 120,000 mg/m3
Remarks: Blood: Changes in leukocyte (WBC) count. Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels. True cholinesterase. Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Transaminases.

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Germ toxicity in vitro - Histidine reversion (Ames)

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probably, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Ingestion: May be harmful if swallowed.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Signs and Symptoms of Exposure
Cough, Shortness of breath, Headache, Nausea, Vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTCS: TX410000

12. ECOLOGICAL INFORMATION

Toxicity
no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an air burner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2356 Class: 3 Packing group: I
Proper shipping name: 2-Chloropropane
Reportable Quantity (RO): Marine Pollutant: No
Poison Inhilation Hazard: No

IMDG
UN number: 2356 Class: 3 Packing group: I
EMS No: F-E, S-D
Proper shipping name: 2-CHLOROPROPANE
Marine Pollutant: No

IATA
UN number: 2356 Class: 3 Packing group: I
Proper shipping name: 2-Chloropropane

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Target Organ Effect

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title II, Section 313.

SARA 311/312 Hazards
Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
<tr>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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2-Chloropropane

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further Information
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