

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

ProductName : Crotyl chloride

2. HAZARDS IDENTIFICATION

Risk advice to man and the environment

Highly flammable. Harmful by inhalation and if swallowed. Causes burns. May cause sensitization by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Other hazards which do not result in classification

Lachrymator.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| CAS-No. | EC-No. | | Classification | Concentration |
|--------------------------|-----------|---|---|-----------------|
| 1-Chlorobut-2-ene | | | | |
| 591-97-9 | 209-739-5 | - | F, C, R11 - R20/22 - R34 - R43 - R52/53 | ≥ 70 - ≤ 75 % |
| 3-Chlorobut-1-ene | | | | |
| 563-52-0 | 209-252-8 | - | F, Xi, R11 - R43 | ≥ 25,5 - ≤ 30 % |

For the full text of the R-phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

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. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Store in cool place. 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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

Appearance

| | |
|--------|---------------|
| Form | clear, liquid |
| Colour | colourless |
| Odour | pungent |

Safety data

| | |
|-----------------------|--|
| pH | no data available |
| Melting point | -65 °C |
| Boiling point | 81 °C at 1.013 hPa |
| Flash point | -12 °C - closed cup - DIN 51755 Part 1 |
| Ignition temperature | 510 °C |
| Lower explosion limit | no data available |
| Upper explosion limit | no data available |
| Vapour pressure | 116 hPa at 20 °C |
| Density | 0,92 g/cm3 at 20 °C |
| Water solubility | ca.14 g/l at 20 °C - hydrolyses |
| Viscosity, dynamic | 0,4 mPa.s at 20 °C |

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Oxidizing agents, Strong bases

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 385 mg/kg

LC50 Inhalation - rat - 4 h - 16,3 mg/l

Irritation and corrosion

Skin - rabbit - Corrosive - 4 h - OECD Test Guideline 404

Eyes - rabbit - Moderate eye irritation - OECD Test Guideline 405

Sensitisation

Buehler Test - guinea pig - OECD Test Guideline 406 - May cause allergic skin reaction.

Chronic exposure

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

Genotoxicity in vitro - Ames test - S. typhimurium - positive

Signs and Symptoms of Exposure

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Potential Health Effects

| | |
|----------------------|--|
| Inhalation | Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. |
| Skin | May be harmful if absorbed through skin. Causes skin burns. |
| Eyes | Causes eye burns. |
| Ingestion | Harmful if swallowed. Causes burns. |
| Target Organs | Eyes, |

Additional Information

RTECS: EM4264000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

| | |
|------------------|--|
| Biodegradability | Biotic/Aerobic Result: 25 % - Not readily biodegradable. Method: Directive 67/548/EEC, Annex V, C.4.A. |
|------------------|--|

Ecotoxicity effects

| | |
|--|--|
| Toxicity to daphnia and other aquatic invertebrates. | Immobilization EC50 - Daphnia magna (Water flea) - 42 mg/l - 48 h Method: Directive 67/548/EEC, Annex V, C.2. |
|--|--|

Further information on ecology

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

ADR/RID

UN-Number: 2924 Class: 3 (8) Packing group: II
Proper shipping name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (1-Chlorobut-2-ene)

IMDG

UN-Number: 2924 Class: 3 (8) Packing group: II EMS-No: F-E, S-C
Proper shipping name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (1-Chlorobut-2-ene)
Marine pollutant: No

IATA

UN-Number: 2924 Class: 3 (8) Packing group: II

Proper shipping name: Flammable liquid, corrosive n.o.s. (1-Chlorobut-2-ene)

15. REGULATORY INFORMATION

Labelling according to EC Directives

| | |
|---|---|
| Hazard symbols | |
| F | Highly flammable |
| C | Corrosive |
| R-phrases(s) | |
| R11 | Highly flammable. |
| R20/22 | Harmful by inhalation and if swallowed. |
| R34 | Causes burns. |
| R43 | May cause sensitization by skin contact. |
| R52/53 | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| S-phrases(s) | |
| S16 | Keep away from sources of ignition - No smoking. |
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| S36/37/39 | Wear suitable protective clothing, gloves and eye/face protection. |
| S45 | In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |
| S61 | Avoid release to the environment. Refer to special instructions/ Safety data sheets. |
| Hazardous components which must be listed on the label: | |
| 591-97-9 | 1-Chlorobut-2-ene |
| 563-52-0 | 3-Chlorobut-1-ene |

16. OTHER INFORMATION

Text of R-phrases mentioned in Section 3

| | |
|--------|---|
| R11 | Highly flammable. |
| R20/22 | Harmful by inhalation and if swallowed. |
| R34 | Causes burns. |
| R43 | May cause sensitization by skin contact. |
| R52/53 | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

Further information

For R&D use only. Not for drug, household or other uses.



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WARRANTY:

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. Lookchem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.