Material Safety Data Sheet
2-Chloro-2-methylpropane

MSDS# 22648

Section 1 - Chemical Product and Company Identification

MSDS Name: 2-Chloro-2-methylpropane
Catalog Numbers: O1875-500
Synonyms: tert-Butyl chloride; 2-Chloroisobutane; 2-Chloro-2-methylpropane; Trimethylchloromethane.

Company Identification:
Acros Organics BVBA
Janssen Pharmaceuticaal 3a
2440 Geel, Belgium

Company Identification: (USA)
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 507-20-0
Chemical Name: tert-Butyl chloride
%: > 98
EINECS#: 208-066-4

Hazard Symbols: F
Risk Phrases: 11

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Warning! Flammable liquid and vapor. May cause respiratory tract irritation. May cause central nervous system depression. May cause eye and skin irritation. May cause liver and kidney damage. Target Organs: Kidneys, central nervous system, liver.

Potential Health Effects

Eye: May cause eye irritation. May cause chemical conjunctivitis and corneal damage.
Skin: May cause irritation and dermatitis. May cause cyanosis of the extremities. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.
Inhalation: High concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Aspiration may lead to pulmonary edema. Vapors may cause dizziness or suffocation. May cause burning sensation in the chest.
Chronic: May cause liver and kidney damage. Effects may be delayed.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Wash clothing before reuse. Remove contaminated clothing and shoes. Flush skin with plenty of soap and water.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician:

Section 5 - Fire Fighting Measures

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can form an explosive mixture with air. Vapors may travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Containers may explode in the heat of a fire. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. Cool containers with flooding quantities of water until well after fire is out.

Autoignition Temperature: 570 deg C (1,058.00 deg F)
Flash Point: < 0 deg C (< 32.00 deg F)

Explosion Limits: Lower: 2.0%
Explosion Limits: Upper: 8.8%

NFPA Rating: health: 2; flammability: 3; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>tert-Butyl chloride</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>
OSHA Vacated PELs: tert-Butyl chloride: None listed

Engineering Controls:
   Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Personal Protective Equipment

Eyes: 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: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: 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.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
   Color: clear, colorless
   Odor: none reported
   pH: Not available
   Vapor Pressure: 266 mbar @ 15 deg C
   Vapor Density: 3.20 (Air=1)
   Evaporation Rate: Not available
   Viscosity: 0.51 mPas 20 deg C
   Boiling Point: 51 deg C (123.80°C)
   Freezing/Melting Point: -25 deg C (-13.00°F)
   Decomposition Temperature: Not available
   Solubility in water: Sparingly soluble in water
   Specific Gravity/Density: 0.87
   Molecular Formula: C₄H₉Cl
   Molecular Weight: 92.57

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: High temperatures, incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials: Oxidizing agents.

Hazardous Decomposition Products: Hydrogen chloride, carbon monoxide, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

RTECS#: CAS# 507-20-0: TX5040000
LD50/LC50: RTECS: Not available.
Carcinogenicity: tert-Butyl chloride - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: See actual entry in RTECS for complete information.

Section 11 - Toxicological Information

Section 12 - Ecological Information

Dispose of in a manner consistent with federal, state, and local regulations.

Section 13 - Disposal Considerations

US DOT
Shipping Name: CHLOROBUTANES
Hazard Class: 3
UN Number: UN1127
Packing Group: II
Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: F

Risk Phrases:
  R 11 Highly flammable.

Safety Phrases:
  S 9 Keep container in a well-ventilated place.
  S 16 Keep away from sources of ignition - No smoking.
  S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection)

CAS# 507-20-0: 2

Canada

CAS# 507-20-0 is listed on Canada's DSL List

Canadian WHMIS Classifications: B2, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 507-20-0 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 507-20-0 is listed on the TSCA Inventory.

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Section 16 - Other Information

MSDS Creation Date: 12/12/1997
Revision #8 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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