Material Safety Data Sheet
2-Chloro-2-methylpropane

MSDS# 01596

Section 1 - Chemical Product and Company Identification

MSDS Name: 2-Chloro-2-methylpropane
Catalog Numbers: AC109500000, AC109500025, AC109500250, AC109505000
Synonyms: tert-Butyl chloride.

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaaln 3a
2440 Geel, Belgium
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Company Identification: (USA)

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

<table>
<thead>
<tr>
<th>CAS#:</th>
<th>507-20-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name:</td>
<td>2-Chloro-2-methylpropane</td>
</tr>
<tr>
<td>%:</td>
<td>99</td>
</tr>
<tr>
<td>EINECS#:</td>
<td>208-066-4</td>
</tr>
</tbody>
</table>

Hazard Symbols: F

Risk Phrases: 11

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Danger! The toxicological properties of this material have not been fully investigated. Flammable liquid and vapor. May cause eye, skin, and respiratory tract irritation. Target Organs: Respiratory system.

Potential Health Effects

Eye: May cause eye irritation.
Skin: May cause skin irritation. May be harmful if absorbed through the skin.
Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.
Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.
Chronic: Animal studies have reported the development of tumors.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.
Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: Do not induce vomiting. Get medical aid.

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.

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 may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Containers may explode in the heat of a fire. Flammable liquid and vapor.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Autoignition Temperature: 540 deg C (1,004.00 deg F)
Flash Point: -27 deg C (-16.60 deg F)
Explosion Limits: Lower: 1.8 vol %
Explosion Limits: Upper: 10.1 vol %
NFPA Rating: health: 1; 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. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. 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>2-Chloro-2-methylpropane</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td></td>
<td>opane</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: 2-Chloro-2-methylpropane: None listed

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

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: A respiratory protection program that meets OSHA’s 29 CFR 1910.134 and ANSI Z88.2 requirements or
Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: clear, colorless - APHA: 15 max
Odor: faint odor
pH: Not available
Vapor Pressure: 266 mbar @ 15 deg C
Vapor Density: 3.20 (Air=1)
Evaporation Rate: Not available
Viscosity: 0.51 mPa @ 20 deg C
Boiling Point: 51 - 52 deg C @ 760 mmHg
Freezing/Melting Point: -25 deg C (-13.00°F)
Decomposition Temperature: Not available
Solubility in water: Slightly soluble
Specific Gravity/Density: 0.850
Molecular Formula: C4H9Cl
Molecular Weight: 92.57

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Hydrogen chloride, carbon monoxide, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 507-20-0: TX5040000
LD50/LC50: RTECS: Not available.
Carcinogenicity: 2-Chloro-2-methylpropane - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Other: Do not empty into drains.

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

US DOT
Shipping Name: CHLOROBUTANES
Hazard Class: 3
UN Number: UN1127
Packing Group: II
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

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 16 Keep away from sources of ignition - No smoking.

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

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.

Section 16 - Other Information
MSDS Creation Date: 12/23/1997
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 merchantibility 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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REVIEWED

DATE: April 24, 2012

[Signature]