MATERIAL SAFETY DATA SHEET
Chloroform

Section 1 - Chemical Product and Company Identification

MSDS Name: Chloroform

Catalog Numbers: 16773-0000, 16773-0010, 16773-0025, 16773-5000, 26832-0000, 26832-0010, 26832-0025, 32667-0000, 32667-0010, 32667-0025, 32682-0000, 32682-0010, 32682-1000, 36432-0000, 36432-0010, 36432-1000, 38376-0000, 38376-0010, 38376-0025, 38376-0050, 38377-0000, 38377-0010, 38377-0025

Synonyms:

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticalaan 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

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name:</th>
<th>%</th>
<th>EINECS#</th>
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</thead>
<tbody>
<tr>
<td>67-66-3</td>
<td>Chloroform</td>
<td>&gt;99%</td>
<td>200-663-8</td>
</tr>
</tbody>
</table>

Hazard Symbols: XN

Risk Phrases: 22 38 40 48/20/22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Harmful if swallowed. Irritating to skin. Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Light sensitive.

Potential Health Effects

Eye: Vapors may cause eye irritation. Contact produces irritation, tearing, and burning pain. May cause conjunctivitis. Causes redness and pain.

Skin: Prolonged and/or repeated contact may cause irritation and/or dermatitis. May cause severe skin irritation with possible burns, especially if skin is wet or moist. Causes redness and pain.
**Ingestion:** Harmful if swallowed. May cause central nervous system depression, kidney damage, and liver damage. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause cardiac disturbances.

**Inhalation:** Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause liver and kidney damage. May cause cardiac sensitization and possible failure. May cause narcotic effects in high concentration.

**Chronic:** Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated exposure may cause adverse reproductive effects. May cause liver and kidney damage.

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### 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. Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed.

**Skin:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** Get medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Wash mouth out with water.

**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:**

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### Section 5 - Fire Fighting Measures

**General Information:** Substance is noncombustible.

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

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### 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.

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### Section 7 - Handling and Storage

**Handling:** Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood.

**Storage:** Store in a cool, dry place. Do not store in direct sunlight. Store in a tightly closed container.

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### Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Region</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
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<tbody>
<tr>
<td>United Kingdom</td>
<td>9.9</td>
<td>29.7</td>
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<tr>
<td>United States</td>
<td>240</td>
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</tr>
<tr>
<td>Belgium</td>
<td>20</td>
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</tr>
<tr>
<td>France</td>
<td>10</td>
<td>250</td>
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<tr>
<td>Germany</td>
<td>20</td>
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</tbody>
</table>

CAS# 67-66-3:

- United Kingdom, WEL - TWA: 2 ppm TWA; 9.9 mg/m³ TWA
- United Kingdom, WEL - STEL: 6 ppm STEL; 29.7 mg/m³ STEL
- United States OSHA: 50 ppm Ceiling; 240 mg/m³ Ceiling
- Belgium - TWA: 10 ppm VLE; 50 mg/m³ VLE
- France - VME: 2 ppm VME; 10 mg/m³ VME
- France - VLE: 50 ppm VLE; 250 mg/m³ VLE
- Germany: 4 ppm TWA (large technical manufacture and use); 20 mg/m³ TWA (large technical manufacture).
Japan: 10 ppm OEL; 49 mg/m³ OEL  
Malaysia: 10 ppm TWA; 49 mg/m³ TWA  
Netherlands: 5 ppm STEL; 25 mg/m³ STEL  
Russia: 5 mg/m³ TWA (vapour)  
Spain: 2 ppm VLA-ED; 10 mg/m³ VLA-ED

**Personal Protective Equipment**

**Eyes:** Wear chemical splash goggles.

**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:** Clear liquid

**Color:** APHA: 10 max

**Odor:** Sweetish odor

**pH:** Not available

**Vapor Pressure:** 213 mbar @ 20 deg C

**Viscosity:** 0.56 mPa s @ 20 deg C

**Boiling Point:** 61 deg C @ 760 mm Hg (141.80°F)

**Freezing/Melting Point:** -63 deg C (-81.40°F)

**Autoignition Temperature:** Not available

**Flash Point:** Not available

**Explosion Limits: Lower:** Not available

**Explosion Limits: Upper:** Not available

**Decomposition Temperature:** Not available

**Solubility in water:** 8 g/l (20°C)

**Specific Gravity/Density:** 1.480

**Molecular Formula:** CHCl₃

**Molecular Weight:** 119.38

### Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and handling conditions.

**Conditions to Avoid:** High temperatures, incompatible materials, light.

**Incompatibilities with Other Materials**

- Strong oxidizing agents, bases, aluminum, fluorine, magnesium, sodium hydroxide, potassium, lithium, methyl alcohol, sodium, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), acetone, dinitrogen tetraoxide, trisopropyl phosphine, potassium hydroxide, perchloric acid, potassium tert-butoxide, phosphorus pentoxide, sodium potassium alloys, calcium hydroxide.

**Hazardous Decomposition Products**

- Hydrogen chloride, carbon monoxide, carbon dioxide, chlorine, phosgene gas.

**Hazardous Polymerization**

- Will not occur.

### Section 11 - Toxicological Information
RTECS#: CAS# 67-66-3: FS9100000

LD50/LC50:
RTECS:

CAS# 67-66-3: Draize test, rabbit, eye: 148 mg;
Draize test, rabbit, eye: 20 mg/24H Moderate;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 17200 mg/m3/2H;
Inhalation, mouse: LC50 = 6000 mg/m3/6H;
Inhalation, rat: LC50 = 47702 mg/m3/4H;
Inhalation, rat: LC50 = 6000 mg/m3/6H;
Oral, mouse: LD50 = 36 mg/kg;
Oral, rat: LD50 = 695 mg/kg;
Oral, rat: LD50 = 1250 mg/kg;
Skin, rabbit: LD50 = >20 gm/kg;

Other: Skin, rabbit: 10 mg/24H open mild

Carcinogenicity: Chloroform - ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans California: carcinogen, initial date 10/1/87 NTP: Suspect carcinogen IARC: Group 2B carcinogen

Other: See actual entry in RTECS for complete information.

### Section 12 - Ecological Information

Ecotoxicity:
Fish: Rainbow trout: LC50: 2030 µg/l
Bacteria: Pseudomonas putida: EC0: 125 mg/l

### Section 13 - Disposal Considerations

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

### Section 14 - Transport Information

<table>
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<th>Shipping Name:</th>
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USA RQ: CAS# 67-66-3: 10 lb final RQ; 4.54 kg final RQ

### Section 15 - Regulatory Information

#### European/International Regulations

European Labeling in Accordance with EC Directives

- **Hazard Symbols:** XN
- **Risk Phrases:**
  - R 22 Harmful if swallowed.
  - R 38 Irritating to skin.
  - R 40 Limited evidence of a carcinogenic effect.
  - R 48/20/22 Harmful : danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
- **Safety Phrases:**
  - S 36/37 Wear suitable protective clothing and gloves.

WGK (Water Danger/Protection)
- CAS# 67-66-3: 3

Canada
- CAS# 67-66-3 is listed on Canada's DSL List

**US Federal**
- TSCA
CAS# 67-66-3 is listed on the TSCA Inventory.

Section 16 - Other Information

**MSDS Creation Date:** 7/16/1996

**Revision #2 Date** 11/09/2004

**Revisions were made in Sections:** General revision.

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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