Section 1 - Chemical Product and Company Identification

MSDS Name: Glycerol
Catalog Numbers: 15892-0000, 15892-0010, 15892-0025, 15892-0250, 18469-0000, 18469-5000, 32725-0000, 32725-5000, 33203-0000, 33203-0010, 33203-0025, 33203-1000, 41098-0000, 41098-5000
Synonyms: Glycerine

Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaalaaan 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>
</tr>
</thead>
<tbody>
<tr>
<td>56-81-5</td>
<td>Glycerol</td>
<td>&gt;99%</td>
<td>200-289-5</td>
</tr>
</tbody>
</table>

Hazard Symbols: None listed
Risk Phrases: None listed

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Not available

Potential Health Effects
Eye: May cause mild eye irritation.
Skin: May cause mild skin irritation. Low hazard for usual industrial handling.
Ingestion: May cause irritation of the digestive tract. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause headache. Expected to be a low ingestion hazard.
Inhalation: May cause respiratory tract irritation. Low hazard for usual industrial handling.
Chronic: May cause kidney injury.

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.
Skin: 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: Get medical aid. Wash mouth out with water.

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

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

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

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. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 56-81-5:
United Kingdom, WEL - TWA: 10 mg/m3 TWA (mist) United Kingdom, WEL - STEL: 30 mg/m3 STEL (mist)
United States OSHA: 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Belgium - TWA: 10 mg/m3 VLE (mist)
France - VME: 10 mg/m3 VME
Malaysia: 10 mg/m3 TWA (mist)
Netherlands: 10 mg/m3 MAC (mist)
Spain: 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: Viscous liquid
Color: clear, colorless
Odor: odorless
pH: 5 (100 g/l aq.sol.)
Vapor Pressure: 0.003mbar @50 deg C
Viscosity: 1069 mPa s @20 deg C
Boiling Point: 290 deg C @760mmHg (554.00°F)
Freezing/Melting Point: 18 deg C (64.40°F)
Autoignition Temperature: 400 deg C (752.00 deg F)
Flash Point: 160 deg C (320.00 deg F)
Explosion Limits: Lower: 0.9 Vol %
Explosion Limits: Upper: Not available

Decomposition Temperature:
Solubility in water: >500 g/l (20°C)
Specific Gravity/Density: 1.261
Molecular Formula: C3H8O3
Molecular Weight: 92.09

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid: Incompatible materials, exposure to moist air or water, temperatures above 140°C.

Incompatibilities with Other Materials
- Strong oxidizing agents, lead oxide, nitric acid, sulfuric acid, hydrogen peroxide, potassium permanganate, calcium hypochlorite, perchloric acid.

Hazardous Decomposition Products
- Carbon monoxide, carbon dioxide.

Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 56-81-5: MA8050000
LD50/LC50:
- **CAS# 56-81-5**: Draize test, rabbit, eye: 126 mg Mild;
  - Draize test, rabbit, eye: 500 mg/24H Mild;
  - Draize test, rabbit, skin: 500 mg/24H Mild;
  - Inhalation, rat: LC50 = >570 mg/m3/1H;
  - Oral, mouse: LD50 = 4090 mg/kg;
  - Oral, rabbit: LD50 = 27 gm/kg;
  - Oral, rat: LD50 = 12600 mg/kg;
  - Skin, rabbit: LD50 = >10 gm/kg; .
- Other:

Carcinogenicity: Glycerol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Daphnia: Daphnia: EC50: >10000 mg/l; 24h; .
  - Fish: Leuciscus idus: LC50: > 10000 mg/l; 24h; .
Other: Do not empty into drains. Readily biodegradable.
Log POW: -2.66 (calc.)

Section 13 - Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations.

**Section 14 - Transport Information**

<table>
<thead>
<tr>
<th>IATA</th>
<th>IMO</th>
<th>RID/ADR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not regulated as a hazardous material</td>
<td>Not regulated as a hazardous material</td>
<td>Not regulated as a hazardous material</td>
</tr>
</tbody>
</table>

**Section 15 - Regulatory Information**

**European/International Regulations**

- European Labeling in Accordance with EC Directives
  - Hazard Symbols: Not available
  - Risk Phrases:
  - Safety Phrases:
    - S 24/25 Avoid contact with skin and eyes.
- WGK (Water Danger/Protection)
  - CAS# 56-81-5: 0
- Canada
  - CAS# 56-81-5 is listed on Canada's DSL List

**US Federal**

- TSCA
  - CAS# 56-81-5 is listed on the TSCA Inventory.

**Section 16 - Other Information**

- **MSDS Creation Date:** 7/16/1996
- **Revision #1 Date:** 8/08/2005
- **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.