Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name: 2-Methyl-2,4-pentanediol
Product Code: MX1280
Manufacturer: EMD Chemicals Inc.
P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.

Effective Date: 3/3/2003
Print Date: 5/13/2004

For More Information Call
856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call
800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym: HEXYLENE GLYCOL

Material Uses: Analytical reagent.

Chemical Family: Glycol.

Section 2. Composition and Information on Ingredients

Component | CAS # | % by Weight
--- | --- | ---
2-Methyl-2,4-pentanediol | 107-41-5 | 100

Section 3. Hazards Identification

Physical State and Appearance: Liquid.

Emergency Overview: CAUTION! CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: MUCOUS MEMBRANES, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA. MAY BE HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects:

- **Eyes**: Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.
- **Skin**: Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. May be hazardous in case of skin contact (permeator). Exposure can cause nausea, headache and vomiting.
- **Inhalation**: Hazardous in case of inhalation (lung irritant). May be hazardous in case of inhalation.
- **Ingestion**: May be hazardous in case of ingestion. Exposure can cause nausea, headache and vomiting.

**Continued on Next Page**
Section 4. First Aid Measures

Eye Contact
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 5. Fire Fighting Measures

Flammability of the Product
May be combustible at high temperature.

Auto-ignition Temperature
269.9°C (517.8°F)

Flash Points
Open cup: 100.9°C (213.6°F).

Flammable Limits
LOWER: 1.3% UPPER: 7.4%

Products of Combustion
These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances
Flammable in presence of open flames, sparks and static discharge, of heat, of oxidizing materials.

Explosion Hazards in Presence of Various Substances
Risks of explosion of the product in presence of static discharge:
Flammable in presence of open flames, sparks and static discharge.
Risks of explosion of the product in presence of mechanical impact: No.

Fire Fighting Media and Instructions
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Protective Clothing (Fire)
Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards
Not available.

Special Remarks on Explosion Hazards
Not available.
### Section 6. Accidental Release Measures

**Small Spill and Leak**
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

**Large Spill and Leak**
Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

**Spill Kit Information**
No specific spill kit required for this product.

### Section 7. Handling and Storage

**Handling**
Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing vapors or spray mists. Keep container closed.

**Storage**
Keep container in a cool, well-ventilated area.

### Section 8. Exposure Controls/Personal Protection

**Engineering Controls**
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection**

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Splash goggles.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Lab coat.</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.</td>
</tr>
<tr>
<td>Hands</td>
<td>Gloves.</td>
</tr>
<tr>
<td>Feet</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

**Protective Clothing (Pictograms)**

**Personal Protection in Case of a Large Spill**
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methyl-2,4-pentanediol</td>
<td><strong>Belgium Minister of Labour (Belgium, 1998).</strong></td>
</tr>
<tr>
<td></td>
<td>CEIL: 123 mg/m³</td>
</tr>
<tr>
<td></td>
<td>CEIL: 25 ppm</td>
</tr>
<tr>
<td></td>
<td>VL: 123 mg/m³</td>
</tr>
<tr>
<td></td>
<td>VL: 25 ppm</td>
</tr>
<tr>
<td></td>
<td><strong>BAUA (Germany, 1997).</strong></td>
</tr>
<tr>
<td></td>
<td>MAK: 125 mg/m³</td>
</tr>
<tr>
<td></td>
<td><strong>DK-Arbejdstyelsinets (Denmark, 1996).</strong></td>
</tr>
<tr>
<td></td>
<td>Loftvaerdil: 125 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Loftvaerdil: 25 ppm</td>
</tr>
<tr>
<td></td>
<td>GV: 125 mg/m³</td>
</tr>
<tr>
<td></td>
<td>GV: 25 ppm</td>
</tr>
<tr>
<td></td>
<td><strong>Tyterveyslaitos (Finland, 1998).</strong></td>
</tr>
<tr>
<td></td>
<td>STEL: 200 mg/m³</td>
</tr>
</tbody>
</table>

*Continued on Next Page*
2-Methyl-2,4-pentanediol

STEL: 40 ppm
TWA: 120 mg/m³
TWA: 25 ppm

INRS (France, 1996).
VLE: 125 mg/m³
VLE: 25 ppm

National Authority for Occupational Safety/Health (Ireland, 1999).
STEL: 125 mg/m³
STEL: 25 ppm
OEL: 125 mg/m³
OEL: 25 ppm

Arbeidsinspectie (Netherlands, 1999).
MAC-C: 125 mg/m³
MAC-C: 25 ppm
TGG 8 uur: 125 mg/m³
TGG 8 uur: 25 ppm

N-Arbeidstydslinjen (Norway, 1996).
AN: 100 mg/m³
AN: 20 ppm

AFS (Sweden, 1996).
KTV: 120 mg/m³
KTV: 25 ppm

EH40-OES (United Kingdom (UK), 1997).
STEL: 123 mg/m³
STEL: 25 ppm
TWA: 123 mg/m³
TWA: 25 ppm

ACGIH (United States, 1994).
CEIL: 121 mg/m³
CEIL: 25 ppm

NIOSH REL (United States, 1994).
CEIL: 125 mg/m³
CEIL: 25 ppm

OSHA Final Rule (United States, 1989).
CEIL: 125 mg/m³
CEIL: 25 ppm

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### Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Not available.</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless.</td>
</tr>
<tr>
<td>Physical State and Appearance</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>118.2 g/mole</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C₆H₁₄O₂</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling/Condensation Point</td>
<td>196.9°C (386.4°F)</td>
</tr>
<tr>
<td>Melting/Freezing Point</td>
<td>-49.95°C (-57.9°F)</td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>379.9°C (715.8°F)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.92 (Water = 1)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

*Continued on Next Page*
2-Methyl-2,4-pentanediol  MX1280  Page: 5/7

Vapor Density  4.07 (Air = 1)

Odor Threshold  Not available.

Evaporation Rate  0.01 compared to (n-BUTYL ACETATE=1)

LogKow  Not available.

Solubility  Soluble in water.

**Section 10. Stability and Reactivity**

Stability and Reactivity  The product is stable.

Conditions of Instability  Not available.

Incompatibility with Various Substances  Reactive with oxidizing agents, acids.

Rem/Incompatibility  Not available.

Hazardous Decomposition Products  carbon oxides (CO, CO2)

Hazardous Polymerization  Will not occur.

**Section 11. Toxicological Information**

RTECS Number:  2-Methyl-2,4-pentanediol  SA0810000

Toxicity  Acute oral toxicity (LD₅₀): 2800 mg/kg [Guinea pig].

Chronic Effects on Humans  Not available.

Acute Effects on Humans  Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. May be hazardous in case of skin contact (permeator). Hazardous in case of inhalation (lung irritant). May be hazardous in case of inhalation. May be hazardous in case of ingestion.

Synergetic Products (Toxicologically)  Not available.

Irritancy  Draize Test (Rabbit): Skin: 500mg/24h. Reaction: Moderate.

Sensitization  Not available.

Carcinogenic Effects  This material is not known to cause cancer in animals or humans.

Toxicity to Reproductive System  Not available.

Teratogenic Effects  Not available.

Mutagenic Effects  Not available.

**Continued on Next Page**
**Section 12. Ecological Information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecotoxicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>BOD5 and COD</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Toxicity of the Products of Biodegradation

The products of degradation are less toxic than the product itself.

**Section 13. Disposal Considerations**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA Waste Number</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Treatment**

Material does not have an EPA Waste Number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

**Section 14. Transport Information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>Not available.</td>
</tr>
<tr>
<td>TDG Classification</td>
<td>Not available.</td>
</tr>
<tr>
<td>IMO/IMDG Classification</td>
<td>Not available.</td>
</tr>
<tr>
<td>ICAO/IATA Classification</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Section 15. Regulatory Information**

**U.S. Federal Regulations**

- TSCA 8(b) inventory: 2-Methyl-2,4-pentanediol
- SARA 302/304/311/312 extremely hazardous substances: No products were found.
- SARA 302/304 emergency planning and notification: No products were found.
- SARA 302/304/311/312 hazardous chemicals: 2-Methyl-2,4-pentanediol
- SARA 311/312 MSDS distribution - chemical inventory - hazard identification: 2-Methyl-2,4-pentanediol: Immediate (Acute) Health Hazard
- SARA 313 toxic chemical notification and release reporting: No products were found.
- Clean Water Act (CWA) 307: No products were found.
- Clean Water Act (CWA) 311: No products were found.
- Clean air act (CAA) 112 accidental release prevention: No products were found.
- Clean air act (CAA) 112 regulated flammable substances: No products were found.
- Clean air act (CAA) 112 regulated toxic substances: No products were found.

**WHMIS (Canada)**

- Class D-2B: Material causing other toxic effects (TOXIC).

**CEPA DSL**:

- 2-Methyl-2,4-pentanediol

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

**International Regulations**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS</td>
<td>2-Methyl-2,4-pentanediol 203-489-0</td>
</tr>
<tr>
<td>DSCL (EEC)</td>
<td>R36/38- Irritating to eyes and skin.</td>
</tr>
</tbody>
</table>

**Continued on Next Page**
International Lists
Australia (NICNAS): 2-Methyl-2,4-pentanediol
Japan (MITI): 2-Methyl-2,4-pentanediol
Korea (TCCL): 2-Methyl-2,4-pentanediol
Philippines (RA6969): 2-Methyl-2,4-pentanediol
China: No products were found.

State Regulations
Pennsylvania RTK: 2-Methyl-2,4-pentanediol; (generic environmental hazard)
Massachusetts RTK: 2-Methyl-2,4-pentanediol
New Jersey: 2-Methyl-2,4-pentanediol
California prop. 65: No products were found.

Section 16. Other Information

National Fire Protection Association (U.S.A.)

<table>
<thead>
<tr>
<th>Fire Hazard</th>
<th>Health</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Specific Hazard

Notice to Reader
The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.