CAPA® 3031, 3041, 3050, 3091 and 3201
Material Safety Data Sheet

Chemical: 2-Oxepanone, polymer

NFPA: H=0  F=1  I=0  S=None
HMIS: H=0  F=1  R=0  PPE= Supplied by user; dependent on conditions

MSDS Number: CAPA3031-0605
Effective Date: 01 June 2005
Issued by: Solvay Chemicals, Inc. Regulatory Affairs Department

Not valid three years after effective date or after issuance of superseding MSDS, whichever is earlier. French or Spanish translations of this MSDS may be available. Check www.solvaychemicals.us or call Solvay Chemicals, Inc. to verify the latest version or translation availability.

Material Safety Data Sheets contain country specific regulatory information. Therefore the MSDS’s provided are for use only by customers of Solvay Fluorides, LLC in North America. If you are located in a country other than Canada, Mexico or the United States, please contact the Solvay Group company in your country for MSDS information applicable to your location.

1. Company and Product Identification

1.1 Product Name: CAPA® 3031 (fka 301), 3041 (fka 303), 3050 (fka 305), 3091 (fka 310) and 3201 (fka 320)
Chemical Name: 2-Oxepanone, polymer with 2-ethyl-2-(hydroxymethyl)-1, 3-propanediol
Synonyms: epsilon-Caprolactone polymer with trimethylolpropane
Chemical Formula: \((C_6H_{14}O_3 \cdot C_6H_{10}O_2)_x\)
Molecular Weight:
- CAPA® 3031 (fka): 300
- CAPA® 3041 (fka 303): 425
- CAPA® 3050 (fka 305): 540
- CAPA® 3091 (fka 310): 900
- CAPA® 3201 (fka 320): 2000
CAS Number: 37625-56-2
EINECS Number: Not applicable

1.2 Recommended Uses: Used in surface coatings; as a chain extender in polyurethane elastomers; in rigid polyurethane castings; and as a dispersion medium

1.3 Supplier:
Solvay Chemicals, Inc.
PO BOX 27328 Houston, TX 77227-7328
3333 Richmond Ave. Houston, Texas 77098

1.4 Emergency Telephone Numbers
Emergencies (USA): 1-800-424-9300 (CHEMTREC®)
Transportation Emergencies (INTERNATIONAL/MARITIME): 1-703-527-3887 (CHEMTREC®)
Transportation Emergencies (CANADA): 1-613-996-6666 (CANUTEC)
Transportation Emergencies (MEXICO-SETIQ): 01-800-00-214-00 (MEX. REPUBLIC)
525-559-1588 (Mexico City and Metro Area)
2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>FORMULA</th>
<th>WT. PERCENT</th>
<th>CAS #</th>
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<tr>
<td>2-Oxepanone, polymer with (C₆H₁₄O₃ • C₆H₁₀O₂)ₓ</td>
<td>&gt; 99</td>
<td></td>
<td>37625-56-2</td>
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<td>2-ethyl-2-(hydroxymethyl)-1,3-propanediol</td>
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</table>

3. Hazards Identification

Emergency Overview: Under normal use conditions, this material is considered to present minimal human health and environment hazards.

3.1 Route of Entry: Inhalation: Yes  Skin: Yes  Ingestion: Yes

3.2 Potential Effects of exposure:

- **Inhalation:** Minimal hazard expected in normal industrial use.
- **Eyes:** Decomposition gases may be irritating to the eyes.
- **Skin contact:** Decomposition gases may be irritating to the skin.
- **Ingestion:** Minimal hazard expected in normal industrial use.

Carcinogenicity: See section 11.3

4. First-Aid Measures

General Recommendations: In all cases, if symptoms develop, consult a physician

4.1 Inhalation:
- No specific treatment is necessary.
- If exposed to excessive levels of decomposition products, remove to fresh air and get medical attention if cough or other symptoms develop.

- **Eyes:**
  - Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.
  - Get medical attention if symptoms develop.

- **Skin:**
  - Remove contaminated clothing.
  - Wash skin with soap and water.

- **Ingestion:** If subject is completely conscious, rinse mouth and administer fresh water.

4.2 Medical Treatment/Notes to Physician: No special precautions
5. Fire-Fighting Measures

5.1 Flash point:
• CAPA® 3031: Not determined
• CAPA® 3041: 320°F (160°C)
• CAPA® 3050, 3091, 3201: 464°F (240°C)

5.2 Auto-ignition Temperature: No data

5.3 Flammability Limits: No data

5.4 Unusual Fire and Explosion Hazards: Non-explosive

5.5 Extinguishing Methods
Common:
• Powder
• Foam, AFFF (alcohol resistant)
• CO₂
• Water, water spray

Inappropriate extinguishing means: No restriction.

5.6 Fire Fighting Procedures
Specific hazards: None

Protective measures in case of intervention:
• Evacuate all non-essential personnel.
• Intervention only by capable personnel who are trained and aware of the hazards of the product.
• Wear self-contained breathing apparatus when in close proximity or in confined spaces.

Other precautions:
• If safe to do so, remove exposed containers, or cool with large quantities of water.
• As with any fire, clean and ventilate room before re-entry.

6. Accidental Release Measures

6.1 Precautions:
• Observe the protective measures given in Section 8.
• If safe to do so without exposing personnel, try to stop the spillage

6.2 Cleanup methods:
• If possible dam large quantities of liquid with sand or earth.
• Remove the product with an inert absorbent such as sand or vermiculite and place into a closed, labeled container compatible with the product.
• Place the container in a safe and isolated place.
• For disposal methods, refer to Section 13.
• Clean the spill area with large quantities of water.

6.3 Precautions for protection of the environment:
• Avoid discharges into the environment (sewers, rivers, soils, etc.) and take any measure required by applicable federal, state and local laws.
• Immediately notify the appropriate authorities in case of significant discharge or if required by applicable federal, state or local laws.
7. Handling and Storage

7.1 Handling: Keep away from heat sources.

7.2 Storage:
- Keep in the original packaging, closed.
- Store in dry area.
- Keep away from heat sources.

7.3 Specific Uses: See Section 1.2.

7.4 Other precautions:
- Warn personnel of the dangers of the product.
- Follow protective measure given in Section 9.

7.5 Packaging: Lacquered steel drums

8. Exposure Controls/Personal Protection

8.1 Exposure Limit Values: This material does not have established exposure limits.

8.2 Exposure Controls:

8.2.1 Occupational Exposure Controls:

8.2.1.1 Ventilation: Provide local ventilation suitable for the emission risk. (see Section 9)

8.2.1.2 Respiratory protection: Use appropriate respiratory protection in case of dusts or dust formation.

8.2.1.3 Hand protection: Where contact is likely, wear chemical resistant gloves (PVC).

8.2.1.4 Eye protection:
- Wear safety glasses with side shields.
- Wear chemical splash goggles and face shield, if risk of splashing.

8.2.1.5 Skin protection: Where contact is likely, wear a chemical suit and boots (PVC, neoprene or rubber).

8.3 Other precautions:
- Shower and eye wash station.
- Consult your industrial hygienist or safety manager for the selection of personal protective equipment suitable for the working conditions.
9. Physical and Chemical Properties

9.1 Appearance:
- CAPA® 3031, 3041 and 3050 - Slightly viscous liquid of low volatility
- CAPA® 3091 - Viscous liquid/paste of low volatility
- CAPA® 3201 - Wax

Color:
- CAPA® 3031, 3041 and 3050 - Colorless
- CAPA® 3091 and 3201 - White

Odor: Odorless

9.2 Important Health, Safety and Environmental information:

pH: Neutral

Change of state:
Melting point: CAPA® 3031, 3050 and 3091: 32-50°F (0-10°C)
  CAPA® 3041: 32-44°F (0-6°C)
  CAPA® 3201: 95-104°F (35-40°C)
Boiling point: Not determined
Decomposition Temperature: 392°F (200°C)

Flash Point:
- CAPA® 3031: Not determined
- CAPA® 3041: 320°F (160°C)
- CAPA® 3050, 3091, 3201: 464°F (240°C)

Flammability (solid, gas): No data

Explosive Properties: Non-explosive

Oxidizing Properties: Non-oxidizer

Vapor Pressure: < 2 mmHg @ 68°F (20°C)

Relative Density:
Specific gravity (H₂O=1): 1.10 @ 68°F (20°C)

Solubility:
Water: Insoluble in water.
Fat: No data
Soluble in aromatic solvents and chlorinated hydrocarbons.

Partition coefficient: P (n-octanol/water): Not determined

Viscosity:
- CAPA® 3031: 550 mPa-s @ 104°F (40°C)
- CAPA® 3041: 557 mPa-s @ 104°F (40°C)
- CAPA® 3050: 800 mPa-s @ 86°F (30°C)
- CAPA® 3091: 480 mPa-s @ 104°F (40°C)
- CAPA® 3201: 180 mPa-s @ 176°F (80°C)

Vapor Density (air=1): Not determined

Evaporation Rate: No data
10. Stability and Reactivity

Stability: Stable under normal conditions of use (see Section 7).

10.1 Conditions to avoid:
- Moisture
- Excessive temperatures

10.2 Materials and substances to avoid:
- Acids
- Alkalis

10.3 Hazardous decomposition products:
- Carbon monoxide and carbon dioxide when involved in a fire.
- Particulates of carbon.
- Caprolactone monomer (irritant).

10.4 Hazardous Polymerization: Will not occur.

11. Toxicological Information

11.1 Acute toxicity:
- Inhalation: No data
- Oral:
  - CAPA® 3031, 3041, 3091, and 3201: No data
  - CAPA® 3050: LD₅₀ in rats is > 2000 mg/kg
- Dermal: No data
- Irritation: No data
- Sensitization: No data

11.2 Chronic toxicity: No data

11.3 Carcinogenic Designation: None

12. Ecological Information

12.1 Acute ecotoxicity:
- CAPA® 3031, 3041, 3091, and 3201: No data
- CAPA® 3050: Fish, LC₅₀, 96 hours, 150 mg/L; Fish, LC₉₀, 96 hours, 80 mg/L

12.2 Chronic ecotoxicity: Not determined

12.3 Mobility: No data

12.4 Degradation
- Abiotic: Not determined
- Biotic:
  - CAPA® 3031, 3041, 3091, and 3201: No data
  - CAPA® 3050: Not inhibitory to activated sludge. The EC₅₀ is estimated to be greater than 560 mg/L based on respiratory inhibition tests.

12.5 Potential for bioaccumulation: Not determined

12.6 Other adverse effects /Comments: Ingestion of pellets by wildlife and fish may cause satiation (fullness) or bowel constriction. Consult the Society of the Plastics Industry’s Clean Sweep Program to assure minimal impact to the environment.
13. Disposal Considerations

13.1 Waste treatment: CAPA® 3031, 3041, 3050, 3091, and 3201 are not considered hazardous waste under Federal Hazardous Waste Regulations (40 CFR 261). Please be advised, however, that federal laws may change and that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult current federal, state and local regulations regarding the proper disposal of this material and its emptied containers.

13.2 Packaging treatment: Consult current federal, state and local regulations regarding the proper disposal of emptied containers.

13.3 RCRA Hazardous Waste: Not listed

14. Transport Information

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<thead>
<tr>
<th>Mode</th>
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<th>IATA</th>
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<td>Not a regulated hazardous material</td>
<td>Not a regulated hazardous material</td>
</tr>
<tr>
<td>Other</td>
<td>It is recommended that ERG Guide # 111 be used for all non DOT regulated material.</td>
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15. Regulatory Information

National Regulations (US)

TSCA Inventory 8(b): Yes

SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR355): No

SARA Title III Sec. 311/312 (40 CFR 370): No

SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372): No

CERCLA Hazardous Substance (40CFR Part 302)
  Listed: No
  Unlisted Substance: No

State Component Listing:
State Comment: None identified.

National Regulations (Canada)

Canadian DSL Registration: Yes, DSL Record No. 11400

WHMIS Classification: Not a controlled product.

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

Not classified according to Directive 1999/45/EC.
16. Other Information

16.1 Ratings:

**NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)**

Health = 0  Flammability = 1  Instability = 0  Special = None

**HMIS (HAZARDOUS MATERIAL INFORMATION SYSTEM)**

Health = 0  Fire = 1  Reactivity = 0  PPE = Supplied by User; dependent on local conditions

16.2 Other Information:

The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product).

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Prior to purchasing Solvay Chemicals caprolactone products for use in any of the above medical applications, customers will be required to sign appropriate documentation agreeing to accept full responsibility for, and indemnify Solvay Chemicals against, any and all liability associated with the use of such products in such medical applications.

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16.3 Reason for revision:


Purpose of revision: Add medical suitability information (16.2).