

CAPA® 6100, 6106S, 6109S, 6250, 6400, 6406, 6430, 6500, 6500C, 6501, 6501S, 6502S, 6503, 6505, 6506, 6506S, 6800, and 6806

Material Safety Data Sheet

Chemical: CAPA® Polycaprolactones

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: CAPA 6500-0307
Effective Date: 21 March 2007
Issued by: Perstorp Polyols, Inc.
600 Matzinger Road
Toledo, Ohio 43612
(419) 729-5448

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

1. Company and Product Identification

- 1.1 Product Name:** CAPA® 6100, 6106S, 6109S, 6250, 6400 (fka 640), 6406 (fka 646), 6430, 6500 (fka 650), 6500C (fka 651), 6501, 6501S, 6502S, 6503, 6505 (fka 655), 6506 (fka 656), 6506S, 6800 (fka 680), and 6806 (fka 686).
- Chemical Name:** 2-Oxepanone, homopolymer
- Synonyms:** epsilon-Caprolactone polyester with 1,4-butanediol
epsilon-Caprolactone polymer with 1,4-butanediol
- Chemical Formula:** (C₆H₁₀O₂)_x
- Molecular Weight:** CAPA® 6100, 6106S, 6109S: 10000
CAPA® 6250: 25000
CAPA® 6400 (640), 6406 (646): 37000
CAPA® 6500 (650), 6500C (651), 6501, 6501S, 6502S, 6503, 6505 (655), 6506 (656), 6506S: 50000
CAPA® 6800 (680), 6806 (686): 80000
CAPA® 6430: 43000
- CAS Number:** 24980-41-4
- EINECS Number:** Not Applicable.
- 1.2 Recommended Uses:** Used in hot melt adhesives, polymer processing aids, dispersion medium, and orthopedic applications.
- 1.3 Supplier:** Perstorp Polyols, Inc.
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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

INGREDIENTS	FORMULA	WT. PERCENT	CAS #
2-Oxepanone homopolymer	(C ₆ H ₁₀ O ₂) _x	> 99	24980-41-4

3. Hazards Identification

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

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

3.2 Potential Effects of exposure:

Inhalation: Dust particles may require cleaning of nasal passages.

Eyes: Mechanical irritation from particulates generated by product.

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: No specific treatment is necessary.

4.1 Inhalation:

- Clear nasal passages of dust and particulates.
- 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. Get medical attention if symptoms develop.
- Molten polymer can burn skin.

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

4.2 Medical Treatment/Notes to Physician: None.

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5. Fire-Fighting Measures

5.1 Flash point:

- CAPA® 6100, 6106S, 6109S, 6250, 6400 (640), 6406 (646), 6430, 6500 (650), 6500C (651), 6501, 6501S, 6502S, 65003 6505 (655), 6506 (656), 6506S: 527°F (275°C).
- CAPA® 6800 (680) and 6806 (686): No data.

5.2 Auto-ignition Temperature: No data.

5.3 Flammability Limits: Combustible.

5.4 Unusual Fire and Explosion Hazards: Dust explosion possible.

5.5 Common Extinguishing Methods:

- Powder.
- Foam, AFFF.
- CO₂.
- Water, water spray.

Inappropriate extinguishing means: No restriction.

5.6 Fire Fighting Procedures

Specific hazards: Formation of dangerous gas/vapors in case of decomposition (see Section 10). Possible buildup of electrical charges which could cause a fire by electrical discharge.

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 reentry.

6. Accidental Release Measures

6.1 Precautions:

- Observe the protective measures given in Section 8.
- Spilled material may cause slipping hazard.

6.2 Cleanup methods:

Solid:

- Collect the product with suitable means avoiding dust formation.
- Place material 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.

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Molten Solid:

- If possible dam large quantities of molten solid with sand or earth and allow to solidify.
- 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:

- Use electrically conductive materials for piping circuits and equipment.
- Avoid heating product above decomposition temperature (see Section 9).

7.2 Storage:

- Keep in the original packaging, closed.
- Store in dry area.
- Keep away from ignition and heat sources.

7.3 Specific Uses: See Section 1.2.

7.4 Other precautions:

- Use grounded equipment.
- No open flames or sparks. No smoking.
- Prevent electrostatic discharge.
- Avoid dust and formation of dust clouds.
- Warn personnel of the dangers of the product.
- Follow protective measures given in Section 9.

7.5 Packaging:

- Paper bags.
- Polypropylene sacks.

8. Exposure Controls/Personal Protection

This material does not have established exposure limits.

8.1 Exposure Limit Values

Authorized limit Values

PNOC (Particulates not otherwise classified)

OSHA PEL

15 mg/m³ - total dust
5 mg/m³ - resp. frac.

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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 dust 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 chemical-resistant gloves, a chemical suit and boots.
- Recommended materials are PVC, neoprene or rubber.
- Wear appropriate thermal protection when handling hot material.
- Wear chemical protective clothing in dusty areas.

8.3 Other precautions:

- Provide a shower and eyewash 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® 6100, 6400 (640), 6430, 6500 (650), 6500C (651), 6800 (680): pellets.
- CAPA® 6106S, 6109S, 6406 (646), 6501, 6501S, 6502S, 6503, 6505 (655), 6506 (656), 6506S, 6806 (686): powder.
- CAPA® 6100, 6250: solid.

Color: White.

Odor: Odorless.

9.2 Important Health, Safety and Environmental information:

pH: Not applicable.

Change of state:

Melting point: 136-140°F (58-60°C).

Boiling point: Not determined.

Decomposition Temperature: 392°F (200°C).

Flash Point:

- CAPA® 6100, 6106S, 6109S, 6250, 6400 (640), 6406 (646), 6430, 6500 (650), 6501, 6501S, 6502S, 6500C (651), 6505 (655), 6506 (656), 6506S: 527°F (275°C).
- CAPA® 6800 (680) and 6806 (686): No data.

Flammability: Non-flammable.

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Explosive Properties: Dust explosion possible.

Oxidizing Properties: Non-oxidizer.

Vapor Pressure: No data.

Relative Density:

Specific gravity (H₂O=1):

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- CAPA® 6800 (680), 6806 (686): No data.

Solubility:

Water: Insoluble in water.

Fat: Not Applicable.

Soluble in aromatic solvents and chlorinated hydrocarbons.

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

Viscosity:

- CAPA® 6100, 6106S, 6109S: 9300 mPa·s @ 212°F (100°C).
- CAPA® 6400 (640), 6406 (646): 315000 mPa·s @ 212°F (100°C).
- CAPA® 6250, 6500 (650), 6500C (651), 6501, 6501S, 6502S, 6505 (655), 6506 (656), 6506S: 1.5 million mPa·s @ 212°F (100°C).
- CAPA® 6800 (680), 6806 (686): 8 million mPa·s @ 212°F (100°C).
- CAPA® 6430: 1000 mPa·s @ 212°F (100°C).
- CAPA® 6501, 6503: 80 mPa·s @ 212°F (100°C).

Vapor Density (air=1): Not determined.

Evaporation Rate: Not Applicable.

9.3 **Other Information:** None.

10. Stability and Reactivity

Stability:

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

10.4 Hazardous Polymerization: Will not occur.

10.5 Other information: None.

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11. Toxicological Information

11.1 Acute toxicity:

Inhalation: No data.

Oral: No data.

Dermal: No data.

Irritation: No data.

Sensitization: No data.

Comments: None.

11.2 Chronic toxicity: No data.

11.3 Carcinogenic Designation: Not listed.

12. Ecological Information

12.1 Acute ecotoxicity: No data.

12.2 Chronic ecotoxicity: No data.

12.3 Mobility: No data.

12.4 Degradation: No data.

Abiotic: No data.

Biotic: No data.

12.5 Potential for bioaccumulation: No data.

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® 6100, 6106S, 6502S, 6109S, 6250, 6400 (640), 6406 (646), 6430, 6500 (650), 6500C (651), 6501, 6501S, 6502S, 6503, 6505 (655), 6506 (656), 6506S, 6800 (680), and 6806 (686) 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.

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14. Transport Information

Mode	DOT	IMDG	IATA
UN Number	Not a regulated hazardous material	Not a regulated hazardous material	Not a regulated hazardous material
Other	It is recommended that ERG Guide # 111 be used for all non-DOT-regulated material.		

15. Regulatory Information

National Regulations (US)

TSCA Inventory 8(b): Yes.

SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR 355): 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 (40 CFR Part 302)

Listed: No.

Unlisted Substance: No.

State Component Listing:

State Comment: None identified.

National Regulations (Canada)

Canadian DSL Registration: Yes # 11183.

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**.

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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Suitability of Caprolactone Resins in Medical Applications: Perstorp Polyols does not claim suitability of caprolactone products for any specific medical applications. Perstorp Polyols will not knowingly sell (unless so specified in a written contractual agreement) into medical applications involving long term contact with internal bodily fluids, cardiac prosthetic devices, critical components sustaining human life, or involving human reproduction and pregnancy. In addition, Perstorp reserves the right at any time in its sole discretion not to sell into other medical applications not listed above.

16.3 Reason for revision:

Supersedes edition:

MSDS# CAPA-6500-0805 dated 08/20/05

Purpose of revision: Add CAPA® 6502S.