1. Identification

Product Name  epsilon-Caprolactone
Cat No. : A10299
CAS-No  502-44-3
Synonyms  6-Hexanolactone, 2-Oxepanone.
Recommended Use  Laboratory chemicals.
Uses advised against  Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Emergency Telephone Number
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660.
After normal business hours, call Carechem 24 at (866) 928-0789.

2. Hazard(s) Identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| Serious Eye Damage/Eye Irritation | Category 2 |

Label Elements

Signal Word
Warning

Hazard Statements
Causes serious eye irritation
Precautionary Statements

Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Hazards not otherwise classified (HNOC)
None identified

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprolactone</td>
<td>502-44-3</td>
<td>99</td>
</tr>
</tbody>
</table>

4. First-aid measures

General Advice
If symptoms persist, call a physician.

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation
Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion
Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects
None reasonably foreseeable.

Notes to Physician
Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media
No information available

Flash Point
109 °C / 228.2 °F

Method -
No information available

Autoignition Temperature
200 °C / 392 °F

Explosion Limits
Upper
No data available
Lower
No data available
Sensitivity to Mechanical Impact
No information available
Sensitivity to Static Discharge
No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
None known.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

6. Accidental release measures

Personal Precautions
Ensure adequate ventilation. Use personal protective equipment as required.

Environmental Precautions
Should not be released into the environment. See Section 12 for additional Ecological Information.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling
Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures
Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

- Eye/face Protection
  Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

- Skin and body protection
  Wear appropriate protective gloves and clothing to prevent skin exposure.

- Respiratory Protection
  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.

- Hygiene Measures
  Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

- Physical State: Liquid
- Appearance: Colorless
- Odor: sweet
- Odor Threshold: No information available
- pH: No information available
epsilon-Caprolactone

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Melting Point/Range  
-1 °C / 30.2 °F

Boiling Point/Range  
96.5 - 97.5 °C / 205.7 - 207.5 °F @ 15 mmHg

Flash Point  
109 °C / 228.2 °F

Evaporation Rate  
No information available

Flammability (solid,gas)  
Not applicable

Flammability or explosive limits  
Upper  
No data available

Lower  
No data available

Vapor Pressure  
0.01 mmHg @ 20 °C

Vapor Density  
3.9 (Air = 1.0)

Specific Gravity  
1.030

Solubility  
Soluble in water

Partition coefficient; n-octanol/water  
No data available

Autoignition Temperature  
200 °C / 392 °F

Decomposition Temperature  
No information available

Viscosity  
No information available

Molecular Formula  
C6H10O2

Molecular Weight  
114.14

10. Stability and reactivity

Reactive Hazard  
None known, based on information available

Stability  
Stable under normal conditions.

Conditions to Avoid  
Incompatible products.

Incompatible Materials  
Strong oxidizing agents

Hazardous Decomposition Products  
None under normal use conditions

Hazardous Polymerization  
Hazardous polymerization does not occur.

Hazardous Reactions  
None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information  
Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprolactone</td>
<td>LD50 = 4290 mg/kg ( Rat )</td>
<td>LD50 = 5990 µL/Kg ( Rabbit )</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products  
No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation  
No information available

Sensitization  
No information available

Carcinogenicity  
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
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</thead>
<tbody>
<tr>
<td>Caprolactone</td>
<td>502-44-3</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects  
No information available

Reproductive Effects  
No information available.

Developmental Effects  
No information available.
epsilon-Caprolactone

Teratogenicity
No information available.

STOT - single exposure
None known

STOT - repeated exposure
None known

Aspiration hazard
No information available

Symptoms / effects, both acute and delayed
No information available

Endocrine Disruptor Information
No information available

Other Adverse Effects
The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprolactone</td>
<td>Not listed</td>
<td>LC50 = 280 mg/L, 96h static (Poecilia reticulata)</td>
<td>EC50 = 1260 mg/L 16 h</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Persistence and Degradability
No information available

Bioaccumulation/Accumulation
No information available.

Mobility
No information available.

13. Disposal considerations

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
Not regulated

TDG
Not regulated

IATA
Not regulated

IMDG/IMO
Not regulated

15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active/Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caprolactone</td>
<td>502-44-3</td>
<td>X</td>
<td>ACTIVE</td>
<td>-</td>
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</tbody>
</table>

Legend:
TSCA - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export
Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).
epsilon-Caprolactone

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
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<td>207-938-1</td>
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<td>X</td>
<td>X</td>
<td>KE-27460</td>
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</table>

### U.S. Federal Regulations

**SARA 313**

Not applicable

**SARA 311/312 Hazard Categories**

See section 2 for more information

**CWA (Clean Water Act)**

Not applicable

**Clean Air Act**

Not applicable

**OSHA - Occupational Safety and Health Administration**

Not applicable

**CERCLA**

Not applicable

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Not applicable

**U.S. Department of Transportation**

Reportable Quantity (RQ): N

DOT Marine Pollutant: N

DOT Severe Marine Pollutant: N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

### Other International Regulations

**Mexico - Grade**

No information available

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### 16. Other information

**Prepared By**

Health, Safety and Environmental Department

Email: tech@alfa.com

www.alfa.com

**Revision Date**

14-Feb-2020

**Print Date**

14-Feb-2020

**Revision Summary**


**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of SDS