Section 1 - CHEMICALS AND COMPANY IDENTIFICATION

Chemical Identifier: EHPE 3150
Product Code: ODP-OH-EHPE3150-01
Reference Number: yuuki294-10
Company Name: DAICEL CORPORATION
Address: 2-18-1, Konan, Minato-ku, Tokyo 108-8230, Japan
Company Contact: Organic Chemical Products Company
Phone Number: +81-3-6711-8211
Fax Number: +81-3-6711-8218
Emergency Phone: Organic Chemical Products Company
Number: +81-3-6711-8211
Recommended Use: General industrial
Use ID: EHPE3150_E10

Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Physicochemical Hazards: Pyrophoric solids Out of category
Health Hazards: Acute toxicity – oral Out of category
Skin corrosion/irritation Out of category
Sensitization – skin Out of category
Specific target organ toxicity (repeated exposure) Out of category
Other hazards than mentioned above are Not applicable or No data available.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Distinction of Substance or Mixture

<table>
<thead>
<tr>
<th>Chemical Name or Generic Name</th>
<th>Concentration or Its Ranges</th>
<th>Formula</th>
<th>CASS RN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly[(2-oxiranyl)-1,2-cyclohexanediol] 2-ethyl-2-(hydroxymethyl)-1,3-propanediol ether</td>
<td>≥99%</td>
<td>C126H194O33</td>
<td>244772-00-7</td>
</tr>
</tbody>
</table>

Impurities and/or Stabilizing Additives which Contribute to the Classification

No information available

Section 4 - FIRST AID MEASURES

Inhalation

Remove person to fresh air and keep comfortable for breathing. Immediately call a doctor. IF exposed or concerned: Get medical advice and attention.

Skin Contact

Take off or dispose of all polluted clothes.
Eye Contact
Rinse skin with water or shower.
Immediately call a doctor.
Get medical advice and attention.

Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do.
Continue rinsing.
Immediately call a doctor.
Get medical advice and attention.

Ingestion
Rinse mouth. Do NOT induce vomiting.
Immediately call a doctor.
Get medical advice and attention.

Section 5 – FIRE FIGHTING MEASURES

Extinguishing Media
Small fires: Dry chemical, dry sand, alcohol-resistant foam.
Large fire: Dry chemicals, alcohol-resistance foam extinguishing agents and water sprinkling.

Unsuitable Extinguishing Media
Straight streams.

Specific Hazards
Fire may produce irritating, corrosive and/or toxic gases.
Contaminated fire fighting water or dilution water are corrosive and/or toxic and may cause damage to a person concerned with fire extinguishing. Some of these materials may burn, but none ignite readily.

Specific Fire Fighting
Use extinguishing agent suitable for type of surrounding fire.
Move containers from fire area if you can do it without risk.

Protection of Fire Fighter
In fire fighting, wear respiratory protection and chemical protective clothing.

Section 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions.
Protective Equipment and Emergency Procedures
Keep unauthorized personnel away.
Wear appropriate personal protective equipment (Refer to “Section 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION”) and avoid inhalation or contact with eyes and skin.
Isolate the site as a leak area by providing a zone that has an appropriate width to all directions.
Do not touch or walk through spilled material.

Environmental Precautions
Pay attention not to cause the influence on the environment by discharging into rivers.

Methods and Equipment for Containment and Cleaning up
Stop leak if you can do it without risk.
Small dry spills; with clean shovel place material into clean, dry container and cover loosely, move containers from spill area.
Collect the leakage by scraping up and put it into an empty container that can be closed tightly. Dispose of it later.

Prevention Measures for Secondary Accidents
Removes all ignition sources promptly. (Prohibition of smoking, sparks, and flames in the surrounding area).
Isolate flammables (such as wood, paper, and oil) from the leakage.
Section 7 – HANDLING AND STORAGE

Handling Technical Measures
Provide ventilation system and use necessary personal protective equipment as described in “Section 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION”.

Precautions for Safe Handling
Prevent handling of incompatible substances or mixtures.

Specific Hygiene Measures
Wash hands thoroughly after handling.

Storage Precautionary Statements
Prevents handling of incompatible substances or mixtures.
Throughout storage, refer to “Section 10 – STABILITY AND REACTIVITY”.

Material Used in Packaging/Containers
Material Used in Packaging/Containers

Section 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

<table>
<thead>
<tr>
<th>Compound</th>
<th>Exposure Limits (ACGIH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly[(2-oxiranyl)-1,2-cyclohexanediol] 2-ethyl-2-(hydroxymethyl)-1,3-propanediol ether</td>
<td>Not established</td>
</tr>
</tbody>
</table>
Engineering Controls

Workplace storing or handling this product should be equipped with eye washing station and safety shower.
Use process enclosures, local exhaust ventilation, or other engineering controls.
Install ventilation system to keep exposure to airborne contaminants below the exposure limit if vapor, fume, mist generates in the process handling at elevated temperature.
Take precautionary measures against static discharge.

Personal Protective Equipment

Respiratory Protection
Wear respiratory protection.

Hand Protection
Wear protective gloves.

Eye Protection
Protection glasses (ordinary glasses, ordinary glasses with side shields, and goggles).

Skin and Body Protection
Wear protective clothing and face protection.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid (flake)</td>
</tr>
<tr>
<td>Form</td>
<td>Clear</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>70 – 90℃</td>
</tr>
<tr>
<td>Initial Boiling Point and Boiling Ranges</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>253℃ (Ceta Closed Cup)</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability or Explosive Limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower Limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper Limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>133Pa ≧ (25℃)</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity (Density)</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient : n-</td>
<td>No data available</td>
</tr>
<tr>
<td>Octanol/Water</td>
<td></td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>400℃</td>
</tr>
<tr>
<td>Decomposition</td>
<td>No data available</td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Section 10 – STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under ordinary conditions of use and storage.

Possibility of Hazardous Reaction
Contact with strong oxidizers, strong alkalis, or strong acids may cause fire and explosions.

Conditions to Avoid
Fire, heat, incompatibles.

Incompatible Substances or Mixtures
Strong oxidizers, strong alkalis, strong acid.
Hazardous Decomposition Products

Carbon dioxide and carbon monoxide may form when heated to decomposition.

**Section 11 – TOXICOLOGICAL INFORMATION**

<table>
<thead>
<tr>
<th>Category</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity Oral</td>
<td>Out of category; Rat, LD50 &gt;2000mg/kg</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Out of category; From the skin irritation test (4hr, 500mg, rabbit) results; mild. P.I.I=0.4</td>
</tr>
<tr>
<td>Respiratory or Skin Sensitization</td>
<td>Out of category (Skin sensitization); LLNA–DA method (TG442A simplified test method); negative</td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>Ames test; negative, chromosome aberration test; positive (D20; 0.0125mg/ml)</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Out of category; For doses up to 500mg/kg/day (4weeks maximum doses), evidence for significant toxicity had not provided.</td>
</tr>
</tbody>
</table>

**Section 12 – ECOLOGICAL INFORMATION**

<table>
<thead>
<tr>
<th>Category</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard to the aquatic environment (acute hazard)</td>
<td>No data available</td>
</tr>
<tr>
<td>Hazard to the aquatic environment (long-term hazard)</td>
<td>No data available</td>
</tr>
<tr>
<td>Persistence</td>
<td>(Degradability) Low biodegradable</td>
</tr>
<tr>
<td>Bioaccumulative Potential</td>
<td>Low bioaccumulation</td>
</tr>
<tr>
<td>Hazard to the ozone layer</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Section 13 – DISPOSAL CONSIDERATIONS**

<table>
<thead>
<tr>
<th>Category</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Waste</td>
<td>Commission a waste disposal company, or a local public body who are licensed by local or regional government, to dispose of the material. Disposal should be in accordance with applicable regulations and standards by the respective local governments. When commissioning the disposal to a disposal company, notify the danger and toxicity thoroughly to the company.</td>
</tr>
<tr>
<td>Contaminated Container and Packaging</td>
<td>In case of disposal of empty containers, remove the content thoroughly. Recycle containers after cleansing, or carry out the disposal under the related laws and regulations and the standards of the local governments.</td>
</tr>
</tbody>
</table>

**Section 14 – TRANSPORT INFORMATION**

<table>
<thead>
<tr>
<th>Category</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Regulations</td>
<td>Regulatory Information by Sea Transport in bulk according to MARPOL 73/78,Annex II and the IBC code Regulatory Information by Air</td>
</tr>
<tr>
<td>Emergency Response Guide Number</td>
<td></td>
</tr>
</tbody>
</table>
Section 15 – REGULATORY INFORMATION
Details of international registration status

ENCS(Japan); Listed
TSCA(USA); Listed
ECL(Korea); Listed
IECSC(China); Listed
ECN(Taiwan); Listed
PICCS(Philippines); Listed

Section 16 – OTHER INFORMATION
Information Contact
Other Property

See Sec.1 (Company identification)
Notice to Reader: To the best of our knowledge, however, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of information contained herein.
Final determination of suitability of any material is the sole responsibility of the information contained herein.
All materials may present unknown hazards and should be used with caution.
Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.