

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1 Product identifier:** ECOTRION H1000
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Relevant identified uses: Polyurethane fiber, Cosmetic additive, Film, Elastomer
Uses advised against: Use for recommended use only
Reason why uses advised against: Not available
- 1.3 Details of the Supplier of the safety data sheet**
- Manufacturer/Supplier: SK Chemicals Co., Ltd
 - Street address/P.O. Box: 686 Sampyeong-dong
 - Country ID/Postcode/Place: Bundang-gu, Seongnam-si, Gyeonggi-do 463-400, Korea
 - Telephone number (if possible, indicate telefax): +82-2-2008-2313
 - E-mail address of competent person responsible for the SDS: Marketing young-bae.moon@sk.com
 - National contact: Korea, +82-2-2008-2313
- 1.4 Emergency telephone number**
Emergency telephone number: +82-2-2008-2313
Opening hours: Not available
Other comments(e.g. language(s) of the phone service): Not available

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture**
- 2.1.1 Classification according to Regulation (EC) No. 1272/2008 [CLP]**
Reproductive toxicity : Repr. 2
- 2.1.2 Additional information:** Not available
- 2.2 Label elements**
- Labelling according to Regulation (EC) No. 1272/2008 [CLP]**
- Hazard pictograms:**
- 
- Signal word:** Warning
- Hazard statements:**
H361 Suspected of damaging fertility or the unborn child
- Precautionary statements:**
- Precaution :**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- Treatment :**
P308+P313 IF exposed or concerned: Get medical advice/attention.
- Storage :**
P405 Store locked up.
- Disposal :**
P501 Dispose of contents/container to an approved waste disposal plant.
- Supplemental Hazard information (EU):** Not available
- 2.3 Other hazards:** Not available

SECTION 3: Composition/information on ingredients



3.1 Substances

CAS No.	EC No.	Index No.	REACH Registration No.	% [weight]	Name	Classification according to Regulation (EC) No 1272/2008 (CLP)
345260-48-2	Not available	Not available	Not available	≥ 99.8	Polytrimethylene ether glycol	Not classified

Monomer information :

CAS No.	EC No.	REACH Registration No.	% [weight]	Name	Classification according to Regulation (EC) No 1272/2008 (CLP)
504-63-2	207-997-3	01-2119489383-28-0000	100	1,3-propanediol	Not classified

SECTION 4: First aid measures**4.1 Description of first aid measures****4.1.1 General note:** Not available**4.1.2 Following inhalation:**

- Specific medical treatment is urgent.
- Move victim to fresh air.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.

4.1.3 Following skin contact:

- In case of contact with substance, immediately flush skin with running water for at least 20 minutes.
- Remove and isolate contaminated clothing and shoes.
- Wash contaminated clothing and shoes before reuse.
- Get immediate medical advice/attention.

4.1.4 Following eye contact:

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes.

4.1.5 Following ingestion:

- Do not let him/her eat anything, if unconscious.
- Get immediate medical advice/attention.

4.1.6 Self-protection of first aider: Not available**4.2 Most important symptoms and effects, both acute and delayed:** Not available**4.3 Indication of any immediate medical attention and special treatment needed:**

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media: CO₂, dry chemical, Alcohol-resistant foam, Water spray
- Unsuitable extinguishing media: High pressure water streams

5.2 Special hazards arising from the substance or mixture

- May be ignited by heat, sparks or flames.
- Containers may explode when heated.
- Some of these materials may burn, but none ignite readily.
- Fire may produce irritating and/or toxic gases.
- Inhalation of material may be harmful.

5.3 Advice for fire-fighters

- Dike fire-control water for later disposal; do not scatter the material.



- Move containers from fire area if you can do it without risk.
- Wear self-contained breathing apparatus and protective clothing.
- Fire involving Tanks; Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks; Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Fire involving Tanks; Always stay away from tanks engulfed in fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment:

- Use personal protective equipment as required

Emergency procedures:

- Eliminate all ignition sources.
- Stop leak if you can do it without risk.
- Please note that materials and conditions to avoid.
- Ventilate the area.
- Do not touch or walk through spilled material.
- Prevent dust cloud.

6.1.2 For emergency responders: Not available

6.2 Environmental precautions:

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

6.3.1 For containment:

- Small Spill; Flush area with flooding quantities of water.
- Large Spill; Dike far ahead of liquid spill for later disposal.
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

6.3.2 For cleaning up:

- Small Spill; Flush area with flooding quantities of water. And take up with sand or other non-combustible absorbent material and place into containers for later disposal.
- Large Spill; Dike far ahead of liquid spill for later disposal.
- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

6.3.3 Other information: Not available

6.4 Reference to other sections

- See also sections 8 and 13 of the Safety Data Sheet.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Protective measures:

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Please note that materials and conditions to avoid.
- Wash the handling area thoroughly after handling.
- Please work with reference to engineering controls and personal protective equipment.
- Be careful to high temperature.

Measures to prevent fire: Not available

Measures to prevent aerosol and dust generation: Not available

Measures to protect the environment: Not available

Advice on general occupational hygiene:

- Wash thoroughly after handling.
- Please work with reference to engineering controls and personal protective equipment.



7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

- Store in a closed container.
- Store in cool and dry place.

Packaging materials: Not available

Requirements for storage rooms and vessels:

- Store in a closed container.
- Store in cool and dry place.

Storage class: Not available

Further information on storage conditions: Not available

7.3 Specific end use(s)

Recommendations: Not available

Industrial sector specific solutions: Not available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limits

Name	ACGIH regulation	Biological exposure index	OSHA regulation	NIOSH regulation	EU regulation
Polytrimethylene ether glycol	Not applicable	Not available	Not applicable	Not applicable	Not applicable

Occupational exposure controls:

DNELs								
Route of exposure	Workers				Consumers			
	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effects local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	-	-	-	-	-	-	-	-
Inhalation	-	-	-	-	-	-	-	-
Dermal	-	-	-	-	-	-	-	-
PNECs								
Environmental protection target					-			
Fresh water					-			
Freshwater sediments					-			
Marine water					-			
Marine sediments					-			
Food chain					-			
Microorganisms in sewage treatment					-			
Soil (agricultural)					-			
Air					-			

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Substance/mixture related measures to prevent exposure during identified uses: Not available

Structural measures to prevent exposure: Not available

Organisational measures to prevent exposure: Not available

Technical measures to prevent exposure:

- Provide local exhaust ventilation system or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

8.2.2 personal protection equipment

8.2.2.1 Eye and face protection:



- Wear facepiece with goggles to protect.
- An eye wash unit and safety shower station should be available nearby work place.
- Wear breathable safety goggles to protect from particulate material causing eye irritation or other disorder.

8.2.2.2 Skin protection

Hand protection:

- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.

Other skin protection:

- Wear appropriate protective clothing by considering physical and chemical properties of chemicals.

8.2.2.3 Respiratory protection:

- Wear NIOSH or European Standard EN 149 approved full or half face piece (with goggles) respiratory protective equipment when necessary.
- In case exposed to particulate material, the respiratory protective equipments as follow are recommended. ;facepiece filtering respirator or air-purifying respirator, high-efficiency particulate air(HEPA) filter media or respirator equipped with powered fan, filter media of use(dust, mist, fume)
- In lack of oxygen(< 19.5%), wear the supplied-air respirator or self-contained breathing apparatus. oxygen

8.2.2.4 Thermal hazards: Not available

8.2.3 Environmental exposure controls:

Substance/mixture related measures to prevent exposure: Not available

Instruction measures to prevent exposure: Not available

Organisational measures to prevent exposure: Not available

Technical measures to prevent exposure: Not available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance:** : Liquid or waxy solid, Colorless
- Odour:** None
- Odour threshold:** Not available
- pH:** 7.0 ~ 7.5
- melting point / freezing point:** 8.0 °C at 101.3 kPa (OECD TG 102)
- Initial boiling point and boiling range:** Not available
- Flash point:** 243°C (Cleveland Open Cup)
- Evaporation rate:** Not available
- Flammability (solid, gas):** Not available
- Upper / lower flammability or explosive limits:** Not available
- Vapour pressure:** Not available
- Vapour density:** Not available
- Relative density:** 1.03
- Solubility(ies):**
 - **Water:** 802 mg/L at 20 °C (OECD TG 105, Flask method)
 - **Other solvent:** Not available
- Partition coefficient(n-octanol/water):** Not available
- Auto-ignition temperature:** Not available
- Decomposition temperature:** Not available
- Viscosity:** 400~600 cps
- Explosive properties:** Not available
- Oxidising properties:** Not available
- Molecular weight:** 900 ~ 1100 g/mol

9.2 Other information:

9.2.1 Information with regard to physical hazard classes: Not available

9.2.2 Other safety characteristics: Not available



SECTION 10: Stability and reactivity

10.1 Reactivity:

- Combustible agents

10.2 Chemical stability:

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions:

- No hazardous reactions under ordinary conditions of use and storage
- Containers may explode when heated.
- Fire may produce irritating and/or toxic gases.
- Some liquids produce vapors that may cause dizziness or suffocation.
- Inhalation of material may be harmful.

10.4 Conditions to avoid:

- Ignition sources (heat, sparks or flames)

10.5 Incompatible materials:

- Strong combustible substances

10.6 Hazardous decomposition products:

- Irritating and/or toxic gases

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

● Acute toxicity:

Oral : Not classified

- Rat, LD50 cut-off = 5,000 mg/kg b.w (GLP, OECD TG 423)

Dermal : Not classified

- Rat, LD50 > 2,000 mg/kg (GLP, OECD TG 402)

Inhalation : Not available

● Skin corrosion/irritation: Not classified

- Non-irritant with Rabbit (GLP, OECD TG 404)

● Serious eye damage/irritation: Not classified

- Non-irritant with Rabbit (GLP, OECD TG 405)

● Respiratory sensitization: Not available

● skin sensitization: Not classified

- Not skin sensitizer with mouse (GLP, OECD TG 442B)

● Germ cell mutagenicity: Not classified

- in vitro

Bacterial reverse mutation test: Negative (GLP, OECD TG 471)

Chromosome aberration test: Negative (GLP, OECD TG 473)

- in vivo

Mammalian Erythrocyte Micronucleus Test: Negative (GLP, OECD TG 474)

● Carcinogenicity: Not available

● Reproductive toxicity: Category 2

- In the reproductive toxicity and developmental toxicity test using rats, prolonged maternal gestation period, increased pre/postimplantation loss rate, and decreased survival rate after birth of second offspring were observed, NOAEL = 100 mg/kg/day (GLP, OECD TG 421)

● STOT-single exposure: Not classified

- In the acute oral and dermal toxicity test using rats, specific target organ toxicity was not observed. (GLP, OECD TG 423, 402)

● STOT-repeated exposure: Not classified

- In the oral 28-day repeated dose toxicity test using rats, specific target organ toxicity was not observed., NOAEL = 1,000 mg/kg/day (GLP, OECD TG 407)

● Aspiration hazard: Not available

11.2 Information on other hazards:



11.2.1 Endocrine disrupting properties: Not available

11.2.2 Other information: Not available

SECTION 12: Ecological information

12.1 Toxicity

Acute (short-term) toxicity: Not classified

Chronic (long-term) toxicity : Not classified

Fish:

- Danio rerio, LC50(96 hr) > 28.2 mg/L (GLP, OECD TG 203)

Crustacea:

- Daphnia magna, EC50(48h) > 36.8 mg/L (GLP, OECD TG 202)

Algae/aquatic plants:

- Pseudokirchneriella subcapitata, EC50(72h) > 39.1 mg/L, NOEC(72h) = 39.1 mg/L (GLP, OEGD TG 201)

Other organisms: Not available

12.2 Persistence and degradability

Abiotic Degradation: Not available

Physical- and photo-chemical elimination: Not available

Persistence: Not available

Biodegradation: Not available

12.3 Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow): Not available

Bioconcentration factor (BCF): Not available

12.4 Mobility in soil:

Not available

12.5 Results of PBT and vPvB assessment:

Not available

12.6 Endocrine disrupting properties:

Not available

12.7 Other adverse effects:

Not available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

13.1.1 Product / Packaging disposal:

- Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Waste codes / waste designations according to LoW: Not available

13.1.2 Waste treatment-relevant information:

- Dispose of contents/container in accordance with relevant regulation.

- Since emptied containers may retain product residue, follow label warnings even after container is emptied.

- Wear an appropriate Personal protection. (See Exposure Controls/Personal Protection section.)

- Do not allow spill material to enter sewers, storm water drains, soil, etc

13.1.3 Sewage disposal-relevant information:

Not available

13.1.4 Other disposal recommendations:

Not available

SECTION 14: Transport information

14.1 UN number or ID number: Not applicable

14.2 UN proper shipping name: Not applicable

14.3 Transport hazard class(es): Not applicable

14.4 Packing group: Not applicable

14.5 Environmental hazards: No

14.6 Special precautions for user:

in case of fire: Not applicable

in case of leakage: Not applicable

14.7 Maritime transport in bulk according to IMO instruments: Not available



This material is not classified as dangerous under IATA regulations

This material is not classified as dangerous under IMDG regulations

This material is not classified as dangerous under ADR regulations

SECTION 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Authorisations and/or restrictions on use

- **Authorisations:** Not regulated

- **Restrictions on use:** Not regulated

Other EU regulations:

- **SVHC list:** Not regulated

- **Harmonized classification – Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation):**

Not classified

Other regulations:

U.S.A management information (OSHA Regulation) : Not regulated

U.S.A management information (CERCLA Regulation) : Not regulated

U.S.A management information (EPCRA 302 Regulation) : Not regulated

U.S.A management information (EPCRA 304 Regulation) : Not regulated

U.S.A management information (EPCRA 313 Regulation) :Not regulated

Korea management information : Not regulated

Substance of Rotterdam Convention: Not regulated

Substance of Stockholm Convention: Not regulated

Substance of Montreal Protocol: Not regulated

15.2 Chemical Safety Assessment: In accordance with REACH Article 14, a Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

16.1 Indication of changes:

Date Updated: 17. Mar. 2023

Version: Rev.02

16.2 Abbreviations and acronyms:

ACGIH = American Conference of Government Industrial Hygienists

CLP = Classification Labelling Packaging Regulation ; Regulation (EC) No 1272/2008

CAS No. = Chemical Abstracts Service number

DMEL = Derived Minimal Effect Levels

DNEL = Derived No Effect Level

EC Number = EINECS and ELINCS Number (see also EINECS and ELINCS)

EU = European Union

IARC = International Agency for Research on Cancer

ISHL = Industrial Safety & Health Law

NIOSH = National Institute for Occupational Safety & Health

NTP = National Toxicology Program

OSHA = European Agency for Safety and Health at work

PBT = Persistent, Bioaccumulative and Toxic substance

PNEC(s) = Predicted No Effect Concentration(s)

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 453/2010

STP = Sewage Treatment Plant

SVHC = Substances of Very High Concern

vPvB = Very Persistent and Very Bioaccumulative

UN = United Nations

MARPOL = International Convention for the Prevention of Pollution from Ships (IMO)

IBC = Intermediate Bulk Container

CERCLA = Comprehensive Environmental Response, Compensation & Liability Act (US)



EPCRA = Emergency Planning and Community Right-to-Know Act (US)
EINECS = European Inventory of Existing Commercial chemical Substances
ELINCS = European List of Notified Chemical Substances

16.3 Key literature references and sources for data:

SK Chemical Data
EU CLP; <https://echa.europa.eu/information-on-chemicals/cl-inventory-database>
NIOSH Pocket Guide; <http://www.cdc.gov/niosh/npg/npgdcas.html>
National Toxicology Program; <http://ntp.niehs.nih.gov/results/dbsearch/>
American Conference of Governmental Industrial Hygienists TLVs and BEIs.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; <http://monographs.iarc.fr>
Korea Occupational Health & Safety Agency; <http://www.kosha.net>
National Chemicals Information System; <http://ncis.nier.go.kr/ncis/>
National Emergency Management Agency-Korea dangerous material inventory management system;
<http://www.nema.go.kr/hazmat/main/main.jsp>
Waste Control Act enforcement regulation attached [1]

16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Repr.2	On basis of test data

16.5 Relevant H-statements (number and full text):

H361 Suspected of damaging fertility or the unborn child

16.6 Training advice:

- Do not handle until all safety precautions have been read and understood.

16.7 Further information:

This safety data sheet (SDS) is based on the legal provisions of the REACH Regulation, as amended. Its contents are intended as a guide to the appropriate precautionary handling of the material. It is the responsibility of recipients of this SDS to ensure that the information contained therein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. Information and instructions provided in this SDS are based on the current state of scientific and technical knowledge at the date of issue indicated. It should not be construed as any guarantee of technical performance, suitability for particular applications, and does not establish a legally valid contractual relationship. This version of the SDS supersedes all previous versions.

