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Japan / English

1. PRODUCT AND COMPANY IDENTIFICATION**Product identifier**

Product Name EpoxiCure 2 Hardener
Product Code(s) 20-3432-016, 20-3432-032
(M)SDS Number 1350313_J

Other means of identification

Synonyms No information available
Registration Number(s) No information available

Recommended use of the chemical and restrictions on use

Recommended Use Laboratory Use Only
Uses advised against No information available

Details of the supplier of the safety data sheet

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Global Access Code: 334545
Asia Pacific: +1 760 476 3960 Americas: +1 760 476 3962
Middle East/Africa: +1 760 476 3959 Europe: +1 760 476 3961
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2. HAZARDS IDENTIFICATION**GHS Classification**

Acute toxicity - Dermal	Category 3
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1

Specific target organ toxicity (single exposure)	Category 3
Category 3 Respiratory irritation.	
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

Label elements**Signal word****Danger****Hazard statements**

H312 - Harmful in contact with skin
 H314 - Causes severe skin burns and eye damage
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
 H317 - May cause an allergic skin reaction
 H335 - May cause respiratory irritation
 H411 - Toxic to aquatic life with long lasting effects
 H335 - May cause respiratory irritation

Precautionary Statements - Prevention

Do not handle until all safety precautions have been read and understood
 Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 In case of inadequate ventilation wear respiratory protection
 Contaminated work clothing should not be allowed out of the workplace
 Do not eat, drink or smoke when using this product
 Avoid release to the environment
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Specific treatment (see supplemental first aid instructions on this label)
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
 Call a POISON CENTER or doctor if you feel unwell
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Immediately call a POISON CENTER or doctor
 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up
 Store in corrosion resistant container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical name	Weight-%	ENCS - Japan Existing and New Chemical Substances	ISHL No.	CAS No
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-hydro-.omega.-(2-aminomethylethoxy)-, ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1)	30 - 50%	No information available	No information available	39423-51-3
Triethylene tetramine	10 - 30%	(2)-163	No information available	112-24-3
Diethylene triamine	10 - 30%	(2)-159	No information available	111-40-0

Pollutant Release and Transfer Registry (PRTR)

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed.

Chemical name	Weight-%	Class	Cabinet order number	Relevant substance, conversion factor
Triethylene tetramine 112-24-3	10 - 30%	Class I designated chemical substance		

Industrial Safety and Health Law

ISHL Notifiable Substances - information (safety data sheet) to be supplied; Industrial Safety and Health Law enforcement order Table 9 (related to Industrial Safety and Health Law article 57-2 and ISHL Ordinance Article 34-2-4)

Chemical name	ISHL Notifiable Substances	Threshold Values (%)
Diethylene triamine 111-40-0	ISHL Notifiable Substances	0.1

Poisonous and Deleterious Substances Control Law Not applicable

4. FIRST AID MEASURES

First aid measures**General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Inhalation

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention. May cause allergic respiratory reaction. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.

Skin contact

Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction.

Ingestion

Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention. May produce an allergic reaction.

Symptoms	Burning sensation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. Itching. Rashes. Hives.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. See section 8 for more information.
Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Combustible material: may burn but does not ignite readily. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated.
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No information available.
Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact. May cause sensitization by skin contact.
Special Extinguishing Media	Cool drums with water spray.
Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Attention! Corrosive material. Keep people away from and upwind of spill/leak.
Other Information	Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
Reference to other sections	See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Provide extract ventilation to points where emissions occur. Remove contaminated clothing and shoes. Avoid breathing vapors or mists.

Storage

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible materials Oxidizing agent. Acids. Bases.

General hygiene considerations Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure guidelines

Chemical name	Japan	ISHL Working Environmental Evaluation Standards - Administrative Control Levels	ACGIH TLV
Diethylene triamine 111-40-0	-	-	TWA: 1 ppm S*

Biological occupational exposure limits Not applicable

Engineering controls Showers
Eyewash stations
Ventilation systems.

Personal protective equipment

Eye/face protection Face protection shield.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

Hand protection Wear suitable gloves. Impervious gloves.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state Liquid
Appearance Colorless to yellow
Odor Characteristic
Color No information available

Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
pH	No data available	
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	100°C	
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	1.03	
Water Solubility	Soluble in water	
Solubility(ies)	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening Point	No information available
Molecular Weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk Density	No information available
Particle Size	No information available
Particle Size Distribution	No information available

10. STABILITY AND REACTIVITY

Reactivity No information available.

Stability Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact None

Sensitivity to Static Discharge None

Possibility of hazardous reactions None under normal processing.

Conditions to avoid Exposure to air or moisture over prolonged periods.

Incompatible materials Oxidizing agent. Acids. Bases.

Hazardous Decomposition Products None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

Inhalation Specific test data for the substance or mixture is not available. Corrosive by inhalation.

(based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. May cause sensitization in susceptible persons.

Eye contact Specific test data for the substance or mixture is not available. Causes burns. (based on components). Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause sensitization by skin contact. Toxic in contact with skin.

Ingestion Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways. May cause additional affects as listed under "Inhalation".

Symptoms Redness. Burning. May cause blindness. Coughing and/ or wheezing. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Itching. Rashes. Hives.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	3,600.00 mg/kg
ATEmix (dermal)	647.00 mg/kg
ATEmix (inhalation-dust/mist)	70.00 mg/L

Unknown acute toxicity

- 50 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
- 50 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
- 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
- 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
- 85 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Numerical measures of toxicity - Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Triethylene tetramine 112-24-3	= 2500 mg/kg (Rat)	= 550 mg/kg (Rabbit)	-
Diethylene triamine 111-40-0	= 1080 mg/kg (Rat)	= 672 mg/kg (Rabbit)	= 70 mg/L (Rat) 4 h

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

Skin corrosion/irritation Classification based on data available for ingredients. Causes burns.

Serious eye damage/eye irritation Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.

Respiratory or skin sensitization May cause sensitization by inhalation. May cause sensitization by skin contact.

Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	Classification based on data available for ingredients. Contains a known or suspected reproductive toxin.
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	No information available.
Target Organ Effects	Respiratory system. Eyes. Skin. Gastrointestinal tract (GI).
Aspiration hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Percentage for unknown hazards 50 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Ecotoxicity Toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Triethylene tetramine	72h EC50: = 2.5 mg/L (Desmodesmus subspicatus) 96h EC50: = 3.7 mg/L (Pseudokirchneriella subcapitata) 72h EC50: = 20 mg/L (Pseudokirchneriella subcapitata)	96h LC50: = 570 mg/L (Poecilia reticulata) 96h LC50: = 495 mg/L (Pimephales promelas)	-	48h EC50: = 31.1 mg/L
Diethylene triamine	72h EC50: = 1164 mg/L (Pseudokirchneriella subcapitata) 96h EC50: = 345.6 mg/L (Pseudokirchneriella subcapitata) 96h EC50: = 592 mg/L (Desmodesmus subspicatus)	96h LC50: = 430 mg/L (Leuciscus idus) 96h LC50: = 1014 mg/L (Poecilia reticulata) 96h LC50: = 248 mg/L (Poecilia reticulata)	EC50 = 2000 mg/L 1 h EC50 = 96 mg/L 17 h	24h EC50: = 37 mg/L 48h EC50: = 16 mg/L

Persistence and Degradability No information available.

Bioaccumulation

Component Information

Chemical name	Log Pow
Triethylene tetramine	-1.4
Diethylene triamine	-1.3

Mobility in soil No information available.

Mobility No information available.

Other adverse effects No information available.

Endocrine Disruptor Information

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Triethylene tetramine	Group III Chemical	-	-

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

14. TRANSPORT INFORMATION**IMDG/IMO**

UN-No. UN2735
Proper Shipping Name POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Hazard Class 8
Packing Group III
EmS-No. F-A, S-B
Description UN2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENE TETRAMINE, DIETHYLENE TRIAMINE), 8, III

ADR

UN-No. UN2735
Proper Shipping Name POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Description UN2735, POLYAMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENE TETRAMINE, DIETHYLENE TRIAMINE), 8, III
Hazard Class 8
Packing Group III
Special Provisions 274
Classification code C7
Tunnel restriction code (E)

IATA

UN-No. UN2735
Proper Shipping Name AMINES, LIQUID, CORROSIVE, N.O.S.
Hazard Class 8
Packing Group III
ERG Code 8L
Description UN2735, AMINES, LIQUID, CORROSIVE, N.O.S. (TRIETHYLENE TETRAMINE, DIETHYLENE TRIAMINE), 8, III

Japan

UN Number UN2735
Proper Shipping Name POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Hazard Class 8
Packing group III
Special Provisions 223, 274

15. REGULATORY INFORMATION

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

National Regulations**Japan****Pollutant Release and Transfer Registry (PRTR)**

See section 3 for more information

Industrial Safety and Health Law**Harmful Substances Whose Names Are to be Indicated on the Label**

Harmful Substances - names to be indicated on the label; Industrial Safety and Health Law enforcement order Table 9 (related to Industrial Safety and Health Law article 57 and ISHL Ordinance Article 33)

ISHL Notifiable Substances

ISHL Notifiable Substances - information (safety data sheet) to be supplied; Industrial Safety and Health Law enforcement order Table 9 (related to Industrial Safety and Health Law article 57-2 and ISHL Ordinance Article 34-2-4)

Fire Service Law:

Verify that requirements related to using, handling, and storing substances subject to prohibition, authorization or restriction are met

Chemical name	Fire service law group	Hazardous material	Hazard rank
Triethylene tetramine 112-24-3	4	Flammable liquids	III
Diethylene triamine 111-40-0	4	Flammable liquids	III

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (CSCL)

Not applicable

Waterworks (Water Supply) Act

Waterworks (Water Supply) Act - items that require further study

Air Pollution Control Law

Hazardous air pollutants (HAPs) per Air Pollution Control Law article 2, paragraph 1, item 3 and Enforcement Order article 1

International Regulations**Ozone-depleting substances (ODS)** Not applicable**Persistent Organic Pollutants** Not applicable**Export Notification requirements** Not applicable**International Inventories**

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	Contact supplier for inventory compliance status.

Legend**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

16. OTHER INFORMATION

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Revision Note No information available

Key or legend to abbreviations and acronyms used in the safety data sheet

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	-	Skin designation
C	Carcinogen		

Disclaimer

This SDS complies with the requirements of JIS Z 7250:2010 and JIS Z 7252:2009 (Japan). 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.



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End of Safety Data Sheet