SDS Name: ERISYS* GE-13 Page 1 of 9



Safety Data Sheet – International (GHS)

Revision date 09/13/2012

SECTION 1 – Identification

Product identifiers:

Product trade name: ERISYS* GE-13

Company product number: GE13

Other means of identification: 2,3-Epoxypropyl phenyl ether

Recommended use of the chemical and restrictions on use:

Uses: Epoxy liquid
Restrictions on use: None identified

Details of the supplier:

Manufacturer/Supplier: CVC Thermoset Specialties

844 N. Lenola Road

Moorestown, New Jersey 08057

United States

Telephone: +001-856-533-3000 FAX: +001-856-533-3003

For further information about this

SDS:

Email: CTS.info@emeraldmaterials.com

Emergency telephone number: ChemTel (24 hours): USA: 1-800-255-3924; International: +001-813-248-0585. Alternate: Chemtrec (24 hours): USA: 1-800-424-9300; International: +001-703-527-3887.

SECTION 2 - Hazard(s) identification

Classification of the substance or mixture:

GHS product classification:

Acute toxicity, Inhalation - Category 4, H332.
Acute toxicity, Dermal - Category 5, H313.
Acute toxicity, Oral - Category 5, H303.
Skin irritation - Category 2, H315.
Skin sensitization - Category 1, H317.
Germ cell mutagenicity - Category 2, H341.
Carcinogenicity - Category 1B, H350.
Specific target organ toxicity. Single Exposure

Specific target organ toxicity, Single Exposure - Category 3, H335. Hazardous to the aquatic environment - Acute Category 3, H402. Hazardous to the aquatic environment - Chronic Category 3, H412.

Label elements:

GHS product labeling:

SDS Name: ERISYS* GE-13 Page 2 of 9

Hazard pictogram(s):





Signal word: Danger.

Hazard statements: H303 May be harmful if swallowed.

H313 May be harmful in contact with skin.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H335 May cause respiratory irritation. H341 Suspected of causing genetic defects.

H350 May cause cancer.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements: P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves.

P281 Use personal protective equipment as required.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position

comfortable for breathing.

P308+P313 IF exposed or concerned: Get medical advice/attention. P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P362 Take off contaminated clothing and wash before reuse.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local, regional and international

regulations.

Notes: No Additional Information

Classification and hazards statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Regulations in individual countries/regions may determine which classifications and hazard statements are applicable based on adopted hazard classes and categories. Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

Other hazards: No Additional Information

See Section 11 for toxicological information.

SECTION 3 - Composition / information on ingredients

Substance:

Chemical NameCAS-No.Weight %Phenyl glycidyl ether0000122-60-175-100

Notes: No Additional Information

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4 - First-aid measures

Description of first aid measures:

SDS Name: ERISYS* GE-13 Page 3 of 9

General: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye contact: Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. If eye irritation persists: Get medical advice/attention.

Skin contact: Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. Get medical attention immediately.

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

Protection of first aid responders: Wear proper personal protective clothing and equipment.

Most important symptoms and effects, acute and delayed: Burns, Dizziness, Drowsiness, Headache, Irritation, Nausea. Preexisting sensitization, skin and/or respiratory disorders or diseases may be aggravated. See section 11 for additional information.

Indication of immediate medical attention and special treatment needed, if necessary: Treat symptomatically.

SECTION 5 - Fire-fighting measures

Extinguishing media:

Suitable: Use water spray, ABC dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unsuitable: None known.

Special hazards arising from the chemical:

Unusual fire/explosion hazards: Product is not considered a fire hazard, but will burn if ignited. Closed container may rupture (due to build up in pressure) when exposed to extreme heat. May form explosive peroxides.

Hazardous combustion products: Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See section 10 Hazardous decomposition products for additional information.

Special protective equipment and precautions for fire-fighters: Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

SECTION 6 - Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn.

Environmental precautions: Do not flush product into public sewer, water systems or surface waters.

Methods and materials for containment and cleaning up: Contain by diking with sand, earth or other non-combustible material. Wear

SDS Name: ERISYS* GE-13 Page 4 of 9

proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse. Remove all ignition sources, as spilled material may polymerize. Remove leaking containers to a ventilated area.

SECTION 7 - Handling and storage

Precautions for safe handling: As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Do not get in eyes, on skin or clothing. Do not breathe dust, vapor, aerosol, mist or gas. Do not ingest, taste, or swallow. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under wellventilated conditions. Wash contaminated clothing before reuse. Discard shoes contaminated with this product. Provide eyewash fountains and safety showers in the work area.

Conditions for safe storage, including any incompatibilities: Keep away from heat, sparks and open flames. Store cool and dry, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Empty container contains residual product which may exhibit hazards of product. Do not reuse empty container without commercial cleaning or reconditioning.

SECTION 8 - Exposure controls / personal protection

Control parameters:

Occupational exposure limits:

Chemical Name ACGIH - TWA -----ACGIH - STEL -Phenyl glycidyl ether N/E

0.10 ppm (sensitizer)

Chemical Name <u>Australia</u> New Zealand Phenyl glycidyl ether 1 ppm TWA (sensitizer) 1 ppm TWA (skin,

sensitizer)

Korea ISHA China GBZ 2.1-2007 **Chemical Name** Japan ISHL Japan JSOH Phenyl glycidyl ether Group 2B carcinogen 0.8 ppm TWA (skin)

Chemical Name <u>Indonesia</u> **Malaysia** Singapore PELs **Taiwan**

0.1 ppm NAB (skin) 1 ppm TWA, 2 ppm STEL Phenyl glycidyl ether 0.1 ppm TWA (skin) 0.1 ppm PEL

N/E=Not established (no exposure limits established for listed substances for listed country/region/organization).

Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS.

Individual protection measures, such as personal protective equipment (PPE):

Eye/face protection: Safety glasses or goggles required.

Skin and body protection: Wear chemical resistant (impervious) gloves. Wear chemical resistant protective clothing. Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

Respiratory protection: Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the applicable exposure limit(s) of any chemical substance listed in this SDS.

Further information: Eyewash fountains and safety showers are recommended in the work area.

SECTION 9 - Physical and chemical properties

SDS Name: ERISYS* GE-13 Page 5 of 9

Form Liquid Ha Not Available

Appearance Clear Relative density 1.11 Odour Phenolic **Partition coefficient** 1.61 (n-octanol/water)

Odour threshold Not Available %Volatile by weight Not Available VOC Solubility in water Not Available Slight

237 °F (114 °C) Setaflash (Closed Tester) **Evaporation rate** Not Available Flash point

0.01 mm Hg @ 25 °C **Boiling Point °C** 245 ℃ Vapour pressure Boiling Point °F 473 °F Vapour density 5.1 (Air=1)

Viscosity 4-7 cps @ 25 °C **Auto-ignition** Not Available

temperature

Flammability Melting point / Freezing 38 °F (3.5 °C) Not Applicable (liquid) point

(solid, gas)

Flammability or LFL/LEL Not Available Oxidising properties Not oxidizing explosive limits UFL/UEL Not Available

Not Available Decomposition temperature

Other information: Amounts specified are typical and do not represent a specification.

SECTION 10 - Stability and reactivity

Reactivity: Exothermic reactions including polymerization may occur in contact with amines, strong acids, strong bases, strong oxidizing agents and excessive heat.

Chemical stability: This product is stable.

Possibility of hazardous reactions: Hazardous polymerization will not occur. This product will autopolymerize at very high temperatures.

Conditions to avoid: Excessive heat and ignition sources.

Incompatible materials: Avoid strong acids, bases, and oxidizing agents. Avoid contact with amines.

Hazardous decomposition products: Thermal decomposition may produce smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion.

Notes: No Additional Information

SECTION 11 - Toxicological information

Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

Information on likely routes of exposure:

General: Possible risk of irreversible effects. Overexposure may cause central nervous system depression. May cause chronic health effects involving respiratory system, kidney and liver based on animal data.

Eyes: Causes eye irritation.

Skin: May be harmful by skin absorption. May cause allergic skin reaction. Can cause moderate to severe skin irritation and

SDS Name: ERISYS* GE-13 Page 6 of 9

burns.

Inhalation: Harmful by inhalation. Irritating to respiratory system.

Ingestion: Ingestion may cause irritation.

Acute toxicity information: Harmful if inhaled - Category 4. May be harmful in contact with skin - Category 5. May be harmful if swallowed - Category 5.

Chemical Name	LC50 Inhalation	Species	LD50 Oral	<u>Species</u>	LD50 Skin	<u>Species</u>
Phenyl glycidyl ether	>100 ppm (4 hours, no deaths)	Mouse	3850 mg/kg	Rat/ adult	1500 uL/kg	Rabbit/ adult
Chemical Name	LC50 Inhalation	<u>Species</u>	LD50 Oral	<u>Species</u>	LD50 Skin	<u>Species</u>
Phenyl glycidyl ether	>100 ppm (8 hours, no deaths)	Rat/ adult	N/E		2160 mg/kg	Rat/ adult

Corrosion/Irritation/Sensitization information:

Skin corrosion/irritation: Causes skin irritation - Category 2.

Serious eye damage/irritation: Not classified (based on available data, the classification criteria are not met).

Respiratory or skin sensitization: Skin sensitization - Category 1.

Chemical Name	Eye Irritation	Species/Dose	Skin Irritation	Species/Dose	Skin Sensitization	Species/Dose
Phenyl glycidyl ether	Moderate irritant	Rabbit/ adult	Moderate-severe irritant	Rabbit/ adult	Sensitizer	Guinea Pig/ adult

Carcinogenicity/Mutagenicity/Reproductive toxicity information:

Carcinogenicity: May cause cancer - Category 1B. PHENYL GLYCIDYL ETHER: In a 2 year study in rats by inhalation, nasal tumors were observed. IARC has classified phenyl glycidyl ether as possibly carcinogenic to humans (2B) based on animal testing.

Germ cell mutagenicity: Suspected of causing genetic defects - Category 2. PHENYL GLYCIDYL ETHER: Mutagenicity was positive in several genotoxicity assays.

Reproductive toxicity: Not classified. PHENYL GLYCIDYL ETHER: In repeated dose animal studies by inhalation, effects observed on male fertilitity index. NOAEC (No-Observed-Adverse-Effect-Concentration), inhalation, rat: 11 ppm (highest dose).

Specific target organ toxicity (STOT):

STOT-single exposure: May cause respiratory irritation - Category 3.

STOT-repeated exposure: Not classified. PHENYL GLYCIDYL ETHER: Repeated dose toxicity study, inhalation: NOAEC (No-Observed-Adverse-Effect-Concentration), inhalation, rat: >11.8 ppm (local effects). In animals, effects have been reported on the following organs: kidney, liver, lungs (pulmonary edema), and hematopoietic system.

Aspiration hazard: Not classified.

Other toxicity information:

No additional information available.

SECTION 12 - Ecological information

SDS Name: ERISYS* GE-13 Page 7 of 9

Ecotoxicity: No ecological testing has been conducted on this product.

Chemical Name Fish 96 hour LC50 Species Fish 96 hour LC50 Species Fish Chronic **Species** NOEC

Phenyl glycidyl ether 43 mg/L Carassius auratus

(Goldfish)

Chemical Name Invertebrates 48 Species Invertebrates 24 Species Invertebrates Species hour EC50 hour EC50 **Chronic NOEC**

Phenyl glycidyl ether

Chemical Name Algal 96 hour Species Algal 72 hour Species **Algal Chronic** Species EC50 **EC50** NOEC

Phenyl glycidyl ether

Persistence and degradability:

Chemical Name **Biodegradation** Phenyl glycidyl ether Not readily biodegradable

Bioaccumulative potential:

Chemical Name **Bioconcentration Factor (BCF)** Log Kow

Phenyl glycidyl ether

Mobility in soil:

Chemical Name Mobility in soil (Koc/Kow)

Phenyl glycidyl ether

Other adverse effects: No Additional Information

SECTION 13 - Disposal considerations

Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate.

See Section 8 for recommendations on the use of personal protective equipment.

SECTION 14 - Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

UN number: UN1760

UN proper shipping name:

Corrosive liquid N.O.S. (phenyl glycidyl ether)

Transport hazard class(es):

U.S. DOT hazard class: 8 Canada TDG hazard class: 8 Europe ADR/RID hazard class: 8 8 IMDG Code (ocean) hazard class: ICAO/IATA (air) hazard class: 8

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

SDS Name: ERISYS* GE-13 Page 8 of 9

Packing group: III

Environmental hazards:

Marine pollutant: Not Applicable

Hazardous substance (USA): Not Applicable

Special precautions for user: Not Applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not Applicable

Notes: No Additional Information

SECTION 15 - Regulatory information

Safety, health and environment regulations/legislation specific for the product:

Japan regulations:

Japan Industrial Safety and Health Law: Phenyl glycidyl ether.

Japan Fire Service law: Phenyl glycidyl ether - Group 4.

Japan Poisonous and Deleterious Substances: No subject chemicals.

Japan Prevention of Marine Pollution and Disaster: No subject chemicals.

Japan Chemical Substances Control Law: Phenyl glycidyl ether - Type 2 (designated).

Korean regulations:

Korea Industrial Safety and Health Act: Phenyl glycidyl ether.

Korea Toxic Chemicals Classification Act: No subject chemicals.

Korea Safety Control of Dangerous Substances Act: No subject chemicals.

Korea Waste Management Act: Waste disposal methods must comply with local and national laws.

Other regulations: No Additional Information

Chemical inventories:

Regulation	Status
Australian Inventory of Chemical Substances (AICS):	Υ
Canadian Domestic Substances List (DSL):	Υ
Canadian Non-Domestic Substances List (NDSL):	N
China Inventory of Existing Chemical Substances (IECSC):	Υ
European Inventory of Existing Chemical Substances (EINECS):	Υ
European List of Notified Chemical Substances (ELINCS):	N
Europe REACH (EC) 1907/2006:	N
Japan Existing and New Chemical Substances (ENCS):	Υ
Korean Existing and Evaluated Chemical Substances (KECL):	Υ
New Zealand Inventory of Chemicals (NZIoC):	Υ
Phillipines Inventory of Chemicals and Chemical Substances (PICCS):	Υ
Taiwan Inventory of Existing Chemicals:	Υ
U.S. Toxic Substances Control Act (TSCA):	Υ

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory; 2) no information is available; or 3) the component has not been reviewed. A "N" for New Zealand may mean that a qualified group standard may exist for the components in this product.

Chemical inventory notes: No Additional Information

Notes: No Additional Information

SECTION 16 - Other Information

SDS Name: ERISYS* GE-13 Page 9 of 9

Notes: No Additional Information

Legend:

*: Trademark owned by Emerald Performance Materials, LLC.
ACGIH: American Conference of Governmental Industrial Hygienists
ADR/RID: European dangerous goods transport road and rail regulations

ATE: Acute Toxicity Estimate

bw: body weight

CAS No: Chemical Abstract Service Registry Number

DOT: Department of Transportation (U.S.)

GHS: Globally Harmonized System for the classification and labeling of chemical (United Nations)

IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG code: International Maritime Dangerous Goods code
ISHA: Korean Industrial Safety and Health Act
ISHL: Japan Industrial Safety and Health Law
JSOH: Japanese Society for Occupational Health
LFL/LEL: Lower Flammable Limit/Lower Explosive Limit

N/A: Not Applicable N/E: None Established

OEL: Occupational Exposure Limits

PRTR: Japanese Poisonous and Deleterious Substances

S or skin: Can be absorbed through the skin

SDS: Safety Data Sheet

STEL: Short Term Exposure Limit

TCCA: Korean Toxic Chemicals Control Act

TDG: Canadian Transportation of Dangerous Goods Act and Regulations

TWA: Time Weighted Average (exposure for 8-hour workday)

UFL/UEL: Upper Flammable Limit/Upper Explosive Limit

UN: United Nations U.S.: United States

Users Responsibility/Disclaimer of Liability

The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.

Safety Data Sheet Preparer: Product Compliance Department Emerald Performance Materials, LLC 2020 Front Street, Suite 100 Cuyahoga Falls, Ohio 44221 United States