SAFETY DATA SHEET

FOR INDUSTRIAL USE ONLY

EPIKURE™ Curing Agent 3282

Section 1. Product and company identification

GHS product identifier	:	EPIKURE™ Curing Agent 3282
MSDS Number	:	K814L
Product type	:	Curing Agent
Manufacturer/Supplier/Importer	:	Westlake Epoxy Inc. 12650 DIRECTORS DR STE 100 Stafford, Texas 77477 USA
Contact person	:	epoxyservice@westlake.com
Telephone	:	For additional health and safety or regulatory information, call 1 380 251 9900
Emergency telephone number	:	For Emergency Medical Assistance Call Health & Safety Information Services 1-866-303-6949 For Emergency Transportation Information CHEMTREC US Domestic (800) 262-8200 CANUTEC CA Domestic (613) 996-6666

Section 2. Hazards identification

Classification of the substance or mixture	:	SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE [nervous system] - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE Respiratory tract irritation - Category 3

GHS label elements

Hazard pictograms :

Signal word	:	Danger
Hazard statements	:	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H317 May cause an allergic skin reaction. H351 Suspected of causing cancer. H361 Suspected of damaging fertility or the unborn child.

H371 May cause damage to organs. (nervous system)
H335 May cause respiratory irritation.

Precautionary statements

General : Not applicable.

Prevention : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, protective clothing and eye or face protection.
Use only outdoors or in a well-ventilated area.
Do not breathe vapor.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.

Response : IF exposed or concerned:
Call a POISON CENTER or doctor.
IF INHALED:
Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF SWALLOWED:
Immediately call a POISON CENTER or doctor.
Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair):
Take off immediately all contaminated clothing. Rinse skin with water.
Immediately call a POISON CENTER or doctor.
Wash contaminated clothing before reuse.
IF ON SKIN:
Wash with plenty of water.
If skin irritation or rash occurs:
Get medical advice or attention.
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.

Storage : Store locked up.
Store in a well-ventilated place. Keep container tightly closed.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Polyethylenepolyamine Epoxy Adduct (Proprietary)		* *
4,4'-Isopropylidenediphenol		80-05-7

Diethylenetriamine		111-40-0
Oxirane, 2-(butoxymethyl)-		2426-08-6

** The specific chemical identity/proportion of this component is considered trade secret information in accordance with 29 CFR 1910.1200.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under

medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first aid personnel : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO2, alcohol-resistant foam or water spray (fog).

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with

		water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	:	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13 of SDS). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 of SDS for emergency contact information and section 13 of SDS for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see section 8 of SDS). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits

Polyethylenepolyamine Epoxy Adduct (Proprietary)	None.
4,4'-Isopropylidenediphenol	None.
Diethylenetriamine	**NIOSH REL (1994-06-01)** **TWA** 4 mg/m3 1 ppm Notes: Absorbed through skin **ACGIH TLV (1994-09-01)** **TWA** 4.2 mg/m3 1 ppm Notes: Absorbed through skin **OSHA PEL 1989 (1989-03-01)** **TWA** 4 mg/m3 1 ppm
Oxirane, 2-(butoxymethyl)-	**OSHA PEL (1993-06-30)** **TWA** 270 mg/m3 50 ppm **NIOSH REL (1994-06-01)** **CEIL** 30 mg/m3 5.6 ppm **ACGIH TLV (2005-01-01)** **TWA** 3 ppm Notes: Absorbed through skin Skin sensitizer **OSHA PEL 1989 (1989-03-01)** **TWA** 135 mg/m3 25 ppm

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a

higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	:	Viscous liquid.
Color	:	Reddish-brown
Odor	:	amine.
Odor threshold	:	Not available
pH	:	Not available
Melting point/ Freezing point	:	Not available
Boiling point	:	207 °C (405 °F)
Flash point	:	Pensky-Martens Closed Cup: 105 °C (221 °F) (ASTM D 93)
Burning time	:	Not available
Burning rate	:	Not available
Evaporation rate	:	Not available
Flammability (solid, gas)	:	Not available
Lower and upper explosive (flammable) limits	:	**Lower:** 1.4 %(V) **Upper:** Not available
Vapor pressure	:	Less than 13.33 Pa @ 20 °C (68 °F)
Vapor density	:	Not available

Relative density	:	Not available
Density	:	1,090 kg/m3
Solubility	:	Not available
Solubility in water	:	Partial
Partition coefficient: n-octanol/water	:	Not available Not applicable.
Auto-ignition temperature	:	Not available
Decomposition temperature	:	Not available
SADT	:	Not available
Viscosity	:	**Dynamic:** 60 - 150 Pa·s @ 25 °C (77 °F) **Kinematic:** Not available

Other information

No additional information.

Section 10. Stability and reactivity

Reactivity	:	Stable under normal conditions.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Strong oxidizer, Keep away from heat, sparks, flame and other ignition sources. Exposure to water vapour.
Incompatible materials	:	strong acids, strong oxidizing agents,
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-Isopropylidenediphenol				
	LD50 Oral	Rat - female	4,100 mg/kg	-
	LD50 Oral	Rat - Male	5,200 mg/kg	-
Remarks - Inhalation:	No applicable toxicity data.			
	LD50 Dermal	Rabbit	3,000 mg/kg	-
Diethylenetriamine				
	LD50 Oral	Rat	1,080 mg/kg	-

Remarks - Inhalation:	No applicable toxicity data.			
	LD50 Dermal	Rabbit	1,090 mg/kg	-
Oxirane, 2-(butoxymethyl)-				
	LD50 Oral	Rat	1,660 mg/kg	-
	LD50 Oral	Rat	1,660 mg/kg	-
	LC50 Inhalation	Rat		8 h
Remarks - Inhalation:	Eye - Lacrimation Gastrointestinal - Changes in structure or function of salivary glands Lung, Thorax, or Respiration - Dyspnea			
Remarks - Inhalation:	No applicable toxicity data.			
	LD50 Dermal	Rat	> 2,150 mg/kg	-
	LD50 Dermal	Rat	> 2,150 mg/kg	-

Conclusion/Summary **:** Not available

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4,4'-Isopropylidenediphenol	Skin - Erythema/Eschar Acute Dermal Irritation/Corrosion	Rabbit	0	4 hrs	1 - 72 hrs
	Skin - Edema Acute Dermal Irritation/Corrosion	Rabbit	0	4 hrs	1 - 72 hrs
	Eyes - Cornea opacity Acute Eye Irritation/Corrosion	Rabbit	1		-
	Eyes - Iris lesion Acute Eye Irritation/Corrosion	Rabbit	1		-
	Eyes - Redness of the conjunctivae Acute Eye Irritation/Corrosion	Rabbit	1		-
	Eyes - Edema of the conjunctivae Acute Eye Irritation/Corrosion	Rabbit	1 - 2		-

Diethylenetriamine	Skin - Moderate irritant	Rabbit			-
Oxirane, 2-(butoxymethyl)-	Eyes - Severe irritant	Rabbit		24 hrs	-
	Skin - Mild irritant	Rabbit		72 hrs	-
	Skin - Moderate irritant	Rabbit		24 hrs	-
	Eyes - Mild irritant	Rabbit			-

Conclusion/Summary

Skin : Not available

Eyes : Not available

Respiratory : Not available

Sensitization

Conclusion/Summary

Skin : Not available

Respiratory : Not available

Mutagenicity

Product/ingredient name	Test	Experiment	Result
4,4'-Isopropylidenediphenol	-	; Mammalian-Animal	Negative
Remarks:	Does not induce evidence of gene mutation or chromosome damage in rodents. Bisphenol A is capable of producing DNA adduct spots in rat liver following oral administration and 32p post-labeling. The significance of these DNA adduct spots is unknown.		

Conclusion/Summary : Not available

Carcinogenicity

Conclusion/Summary : Not available

Reproductive toxicity

Conclusion/Summary : See below for potential chronic health effects

Teratogenicity

Conclusion/Summary : Not available

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Phenol, 4,4'-(1-methylethylidene)bis-	Category 3	-	Respiratory tract irritation
1,2-Ethanediamine, N1-(2-	Category 2	-	nervous system

aminoethyl)-			
	Category 3	-	Respiratory tract irritation
Oxirane, 2-(butoxymethyl)-	Category 2	-	eyes
	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Oxirane, 2-(butoxymethyl)-	Category 1	-	respiratory tract, skin
	Category 2	-	blood system, central nervous system (CNS)

Aspiration hazard

Not available

Information on likely routes of exposure : Not available

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause damage to organs following a single exposure if inhaled. May cause respiratory irritation.

Skin contact : Causes severe burns. May cause an allergic skin reaction.

Ingestion : May cause damage to organs following a single exposure if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Short term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Long term exposure

Potential immediate effects : Not available
Potential delayed effects : Not available

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-Isopropylidenediphenol	- -	-		-
Remarks:	Bisphenol A (BPA) has been extensively tested in a wide variety of toxicological and biological tests, and has undergone many reviews internationally by a variety of governmental agencies. Many of these studies have focused on reproductive, developmental and endocrine endpoints. However, the human data is limited and insufficient to evaluate reproductive toxicity. While some studies show, or claim to show, target organ toxicity, fertility, or reproductive effects in humans; these studies lack internal and external validity as a result of flawed study design, multiple sources of bias, and lack of control for confounding factors. Numerous animal studies have been conducted and report a range of potential reproductive effects from BPA exposure. Although some studies report reproductive effects, many of these studies suffer from design flaws and reported observations have not been confirmed in larger, more robust studies. Comprehensive reviews of the scientific literature on BPA have focused on several well designed animal studies as a robust foundation for assessing BPA reproductive toxicity (e.g., NTP 1985; Ema et al. 2001; Tyl et al. 2002a, 2002b; Tyl et al. 2008; Delclos et al. 2014). In these studies, BPA was administered to rats and/or mice by the oral route of exposure including doses that far exceed those potentially experienced by humans, including workers. In these studies, either no reproductive toxicity was reported, or treatment-related reproductive effects were reported only at doses where maternal toxicity was observed. Maternal toxicity was manifest as liver toxicity, kidney toxicity, and overall depressions in body weight or body weight gains. The presence of these clear toxic effects was consistent with the role of stress and general systemic toxicity in the development of the reproductive effects at these high doses of BPA. The authors of these studies all concluded that systemic toxicity played a role in the observation of the reproductive effects. By letter dated April 6, 2015, the U.S. Food and Drug Administration (“FDA”) of the U.S. Department of Health & Human Services reported that FDA’s National Center of Toxicological Research (“NCTR”) “recently completed a large scale rodent toxicity study designed to characterize potential effects of BPA in a wide range of endpoints, including reproductive toxicity…. The results from the large extent of reproductive, sperm and hormone parameters evaluated in the NCTR study do not support BPA as a reproductive toxicant.” Based on the total weight of evidence of the experimental animal data, including the lack of robust epidemiological data for reproductive effects, well-established pharmacokinetic data and the results of FDA’s recent large scale toxicity study and using expert judgment, there is insufficient scientific support to associate reproductive toxicity with BPA exposure in the absence of systemic toxicity. Because experimental animal studies have indicated potential for reproductive effects in association with maternal toxicity at high doses, BPA has been classified			

	as a Category 2 suspected human reproductive toxicant as required by OSHA.

Conclusion/Summary : Not available

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral	Dermal	Inhalation (gases)	Inhalation (vapors)	Inhalation (dusts and mists)
EPIKURE™ Curing Agent 3282	4341.6 mg/kg	4237.1 mg/kg	N/A	N/A	N/A
Phenol, 4,4'-(1-methylethylidene)bis-	4100 mg/kg	3000 mg/kg	N/A	N/A	N/A
1,2-Ethanediamine, N1-(2-aminoethyl)-	1080 mg/kg	1054 mg/kg	N/A	N/A	0.05 mg/l
Oxirane, 2-(butoxymethyl)-	1660 mg/kg	2500 mg/kg	N/A	11 mg/l	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
bisphenol A			
	Acute LC50 4.6 mg/l Fresh water	Fish - Fathead minnow	96 h
	Acute NOEC 0.016 mg/l Fresh water Chronic ecotoxicity	Fish - Fathead minnow	444 d
	Acute LC50 2.7 mg/l Fresh water	Aquatic invertebrates. Water flea	48 h
	Acute EC50 2.73 mg/l Fresh water	Aquatic plants - Microalgae	96 h
	Acute NOEC 320 mg/l Fresh water	Micro-organism - Pseudomonas putida	-
	Chronic No observable effect concentration 0.016 mg/l Fresh water	Fish - Fathead minnow	444 d
	Chronic NOEC 1.8 mg/l Fresh water	Aquatic invertebrates. Water flea	-
2,2'-iminodiethylamine			
Remarks - Acute - Fish:	No applicable toxicity data.		
	Acute LC50 16 mg/l	Aquatic invertebrates. Daphnia	48 h
	Acute LC50 53,500 µg/l Fresh water	Aquatic invertebrates.	48 h

		Daphnia	
	Acute EC50 1,164 mg/l	Aquatic plants - Green algae	72 h
	Acute EC50 345,600 µg/l Fresh water	Aquatic plants - Algae	96 h
Remarks - Chronic - Fish:	No applicable toxicity data.		
Remarks - Chronic - Aquatic invertebrates.:	No applicable toxicity data.		
butyl glycidyl ether			
Remarks - Acute - Fish:	No applicable toxicity data.		
	Acute EC50 3.9 mg/l Fresh water	Aquatic invertebrates. Water flea	48 h
Remarks - Acute - Aquatic invertebrates.:	No applicable toxicity data.		
Remarks - Acute - Aquatic plants:	No applicable toxicity data.		
Remarks - Chronic - Fish:	No applicable toxicity data.		
Remarks - Chronic - Aquatic invertebrates.:	No applicable toxicity data.		

Conclusion/Summary : Not available

Persistence/degradability

Conclusion/Summary : Not available

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
bisphenol A	3.4	73	low
2,2'-iminodiethylamine	-5.58	0.65 2.80 - 6.30	low
butyl glycidyl ether	0.63	-	low

Mobility in soil

Soil/Water partition coefficient : Not available
Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains

and sewers.

Section 14. Transport information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

International transport regulations

Regulatory information	UN/NA number	Proper shipping name	Classes/*PG	Reportable Quantity (RQ)
CFR	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Diethylenetriamine)	Class 8 II	
IMO/IMDG	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Diethylenetriamine)	Class 8 II	
IATA (Cargo)	2735	POLYAMINES, LIQUID, CORROSIVE, N.O.S. (Diethylenetriamine)	Class 8 II	

*PG : Packing group

Environmentally hazardous and/or Marine Pollutant : Yes.

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

United States

U.S. Federal regulations :

TSCA 12(b) - Chemical export notification: None required.
TSCA 5α2 - Final significant new use rules: Not listed
TSCA 5α2 - Proposed significant new use rules: Not listed
TSCA 5(e) - Substances consent order: Not listed
SARA 311/312 Classification - SKIN CORROSION, Category 1B
SARA 311/312 Classification - SERIOUS EYE DAMAGE, Category 1
SARA 311/312 Classification - SKIN SENSITIZATION, Category 1
SARA 311/312 Classification - CARCINOGENICITY, Category 2
SARA 311/312 Classification - TOXIC TO REPRODUCTION, Category 2
SARA 311/312 Classification - SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE, nervous system, Category 2
SARA 311/312 Classification - SPECIFIC TARGET ORGAN TOXICITY

- SINGLE EXPOSURE, Respiratory tract irritation, Category 3
SARA 311/312 Classification - Not applicable

SARA 313

Form R - Reporting requirements

Product name	CAS number
Phenol, 4,4'-(1-methylethylidene)bis-	80-05-7

Supplier notification

Product name	CAS number
Phenol, 4,4'-(1-methylethylidene)bis-	80-05-7

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65:

WARNING: This product may contain one or more chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

United States inventory (TSCA 8b) : All components are active or exempted.

International regulations

International lists :
Australia inventory (AICS). All components are listed or exempted.
Canada. DSL - Domestic Substances List, part of CEPA (Canadian Environmental Protection Act) All components are listed or exempted.
Japan inventory (CSCL) All components are listed or exempted.
China. IECSC - Inventory of Existing Chemical Substances in China All components are listed or exempted.
Korea inventory (KECI) All components are listed or exempted.
New Zealand Inventory (NZIoC) All components are listed or exempted.
Philippines. PICCS - Philippines Inventory of Chemicals and Chemical Substances Not determined.
US. Toxic Substances Control Act as amended 15 U.S.C. 2606 Sec. 8 (b) All components are active or exempted.
Taiwan Chemical Substances Inventory (TCSI) All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System III (U.S.A.) :

Health	*	3
Flammability		1
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.
The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Full text of abbreviated H statements : Not applicable.

History

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Key to abbreviations :
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
UN = United Nations
References : Not available

Notice to reader

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