

1. Identification

Product identifier	LIQUID CERAMIC EPOXY ARO PART B
Other means of identification	None.
Recommended use	Not available.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	RR&C
Address	P.O. Box 67000 Detroit, MI 48267-2791
Hours of Operation	8:00 a.m. - 5:00 p.m.
Telephone Number	1-216-515-7712
CHEMTREC	1-800-424-9300

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Reproductive toxicity	Category 2
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements



Signal word Danger

Hazard statement Causes severe skin burns and eye damage. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child.

Precautionary statement

Prevention In case of inadequate ventilation wear respiratory protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated work clothing must not be allowed out of the workplace.

Response If skin irritation or rash occurs: Get medical advice/attention. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. 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/doctor. Specific treatment see Section 4 of this SDS. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Storage Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
FATTY ACIDS, TALL-OIL, REACTION PRODUCTS WITH TETRAETHYLENEPENTAMINE		68953-36-6	15 - 25
1,3-BENZENEDIMETHANAMINE		1477-55-0	5 - 15
4-NONYLPHENOL, BRANCHED		84852-15-3	1 - 10
TETRAETHYLENEPENTAMINE		112-57-2	0 - 5
ETHYLENEDIAMINE		107-15-3	< 1
Other components below reportable levels			59.84

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Continue to rinse for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Rinse mouth. Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.
Most important symptoms/effects, acute and delayed	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing.
Indication of immediate medical attention and special treatment needed	Treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch or walk through spilled material. For personal protection, see section 8 of the SDS.
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Methods and materials for containment and cleaning up

This product is miscible in water. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

Environmental precautions

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use personal protective equipment as required. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
ETHYLENEDIAMINE (CAS 107-15-3)	PEL	25 mg/m3
		10 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0)	Ceiling	0.018 ppm
ETHYLENEDIAMINE (CAS 107-15-3)	TWA	10 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0)	Ceiling	0.1 mg/m3
ETHYLENEDIAMINE (CAS 107-15-3)	TWA	25 mg/m3
		10 ppm

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
TETRAETHYLENEPENTAMINE (CAS 112-57-2)	TWA	5 mg/m3	Aerosol.
		1 ppm	Aerosol.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - California OELs: Skin designation

1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0) Can be absorbed through the skin.

US - Tennessee OELs: Skin designation

1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0)	Danger of cutaneous absorption
ETHYLENEDIAMINE (CAS 107-15-3)	Danger of cutaneous absorption

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

1,3-BENZENEDIMETHANAMINE (CAS 1477-55-0)	Can be absorbed through the skin.
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US WEEL Guides: Skin designation

TETRAETHYLENEPENTAMINE (CAS 112-57-2)	Can be absorbed through the skin.
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Appropriate engineering controls	Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.
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Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses; chemical goggles (if splashing is possible).
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Skin protection

Hand protection	Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.
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Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
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Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
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Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
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General hygiene considerations	Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.
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9. Physical and chemical properties

Appearance	Liquid.
Physical state	Liquid.
Form	Liquid.
Color	Golden to Light Amber
Odor	Ammoniacal. Amine-like.
Odor threshold	Not available.
pH	Alkaline
Melting point/freezing point	4.64 °F (-15.2 °C) estimated
Initial boiling point and boiling range	212 °F (100 °C) estimated
Flash point	> 199.4 °F (> 93.0 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	3 % estimated
Explosive limit - upper (%)	10 % estimated
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Partial
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	644 °F (340 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	8.14 lb/gal estimated

Specific gravity 0.975 estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Alkaline metals.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact	Causes severe skin burns and eye damage. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Difficulty in breathing.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
4-NONYLPHENOL, BRANCHED (CAS 84852-15-3)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	2140 mg/kg
Oral		
LD50	Rat	1600 mg/kg
ETHYLENEDIAMINE (CAS 107-15-3)		
<u>Acute</u>		
Oral		
LD50	Rat	500 mg/kg
TETRAETHYLENEPENTAMINE (CAS 112-57-2)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	0.66 g/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause allergic skin disorders in sensitive individuals.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

**Specific target organ toxicity
- single exposure** Not classified.

**Specific target organ toxicity
- repeated exposure** Not available.

Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicity The product contains a substance which is toxic to aquatic organisms.

Product		Species	Test Results
LIQUID CERAMIC EPOXY ARO PART B			
Aquatic			
Crustacea	EC50	Daphnia	2.414, 48 hours
Fish	LC50	Fish	7.8418, 96 hours
<i>Acute</i>			
Crustacea	EC50	Daphnia	2.6503, 48 hours estimated
Fish	LC50	Fish	1.176, 96 hours estimated
Components			
Species			
Test Results			
4-NONYLPHENOL, BRANCHED (CAS 84852-15-3)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Clam (Mulinia lateralis)	0.0379, 48 hours
Fish	LC50	Winter flounder (Pleuronectes americanus)	0.017, 96 hours
ETHYLENEDIAMINE (CAS 107-15-3)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Fathead minnow (Pimephales promelas)	>= 98.6 - <= 131.6 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

4-NONYLPHENOL, BRANCHED	5.71
ETHYLENEDIAMINE	-2.04
TETRAETHYLENEPENTAMINE	1.503

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of this material and its container to hazardous or special waste collection point. Do not discharge into drains, water courses or onto the ground.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D002: Waste Corrosive material [pH <=2 or >=12.5, or corrosive to steel]
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

15. Regulatory information

US federal regulations All components are on the U.S. EPA TSCA Inventory List.

Toxic Substances Control Act (TSCA) One or more components of the mixture are not on the TSCA 8(b) inventory or are designated "inactive".

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

4-NONYLPHENOL, BRANCHED (CAS 84852-15-3) 1.0 % One-Time Export Notification only.

TSCA Chemical Action Plans, Chemicals of Concern

4-NONYLPHENOL, BRANCHED (CAS 84852-15-3) Nonylphenol (NP) and Nonylphenol Ethoxylates (NPEs) Action Plan

CERCLA Hazardous Substance List (40 CFR 302.4)

ETHYLENEDIAMINE (CAS 107-15-3) Listed.

SARA 304 Emergency release notification

1,2-Ethanediamine (CAS 107-15-3) 5000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
ETHYLENEDIAMINE	107-15-3	5000	10000		

SARA 311/312 Hazardous chemical

Classified hazard categories Yes
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Reproductive toxicity

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
4-NONYLPHENOL, BRANCHED	84852-15-3	1 - 10

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

ETHYLENEDIAMINE (CAS 107-15-3)

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

ETHYLENEDIAMINE (CAS 107-15-3)

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-01-2017

Revision date 06-02-2023

Version # 16

NFPA ratings
Health: 2
Flammability: 1
Instability: 0

Disclaimer
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.

Revision information
Product and Company Identification: Synonyms
Hazard(s) identification: Disposal
Hazard(s) identification: GHS Signal Words
Exposure controls/personal protection: Appropriate engineering controls
Ecological Information: Ecotoxicity
GHS: Classification