

SAFETY DATA SHEET Epoxy Ink Catalyst

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MSDS148 Revision 1
Revision Date 09/30/2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Epoxy Ink Catalyst
Additional Names None
Description Epoxy Ink Catalyst
Intended Use Manufacture of temperature-indicating products and temperature-sensitive decorative effects.

Company LCR Hallcrest
 1911 Pickwick Lane
 Glenview
 IL 60026 USA

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Email sales@hallcrest.com

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2. HAZARDS IDENTIFICATION.

GHS Classification

Skin Corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Skin sensitization	Category 1 - (H317)
Aspiration toxicity	Category 1 - (H304)
Chronic aquatic toxicity	Category 3 - (H412)
Flammable liquids	Category 3 - (H226)

GHS Label Elements Pictograms



Signal Word Danger

Hazard Statements	H304 - May be fatal if swallowed and enters airways H315 - Causes skin irritation H317 - May cause an allergic skin reaction H318 - Causes serious eye damage H412 - Harmful to aquatic life with long lasting effects H226 - Flammable liquid and vapor
Precautionary Statement	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P280 - Wear eye protection/ face protection P331 - Do NOT induce vomiting P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking P273 - Avoid release to the environment P280 - Wear protective gloves/protective clothing/eye protection/face protection.

3. COMPOSITION / INFORMATION ON INGREDIENTS.			
Hazardous ingredients	Classification	Conc.	CAS
Triethylene tetramine	Acute toxicity, Dermal (Category 3), H311 Skin corrosion (Category 1B), H314 Serious eye damage (Category 1), H318 Skin sensitisation (Category 1), H317 Acute aquatic toxicity (Category 3), H402 Chronic aquatic toxicity (Category 3), H412	1 - 5	112-24-3
Methyltrimethoxysilane	Flammable Liquids (Category 2)H225, Skin Sensitisation (Sub-cateogry 1B), H317	1 - 5	1185-55-3
Aminoethylaminopropyltrimethoxysilane	Flammable liquids (Category 4), H227 Skin irritation (Category 2), H315 Serious eye damage (Category 1), H318 Skin sensitisation (Category 1), H317	1 - 5	1760-24-3
Naphthalene (constituent)	Flammable solids (Category 1), H228 Acute toxicity, Oral (Category 4), H302 Carcinogenicity (Category 2), H351 Acute aquatic toxicity (Category 1), H400 Chronic aquatic toxicity (Category 1), H410	1 - 5	91-20-3
1,2,4-Trimethylbenzene (constituent)	Flammable solids (Category 1), H228 Acute toxicity, Oral (Category 4), H302 Carcinogenicity (Category 2), H351 Acute aquatic toxicity (Category 1), H400 Chronic aquatic toxicity (Category 1), H410	< 0.5	95-63-6

4. FIRST AID MEASURES

Description of first aid measures

General Advice

Show this safety data sheet to the doctor in attendance.

Eye Contact

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation develops and persists.

Skin Contact

Wash off immediately with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation (redness, rash, blistering) develops, get medical attention.

Inhalation

Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.

Ingestion

DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Most important symptoms and effect, both acute or delayed.

None. Under normal use conditions

Indication of any immediate medical attention and special treatment needed.

Notes to Physician – Treat Symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing Media

Foam. Carbon dioxide (CO2). Dry chemical. Water spray. 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

Thermal decomposition can lead to release of irritating gases and vapors. May emit toxic fumes under fire conditions.

Special protective actions for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers / tanks with water spray. Sealed containers may rupture when heated.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, protective equipment and emergency procedures Remove all sources of ignition. Ventilate the area. Avoid contact with eyes, skin and clothing. Avoid breathing dust or vapor. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental Precautions Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean non-sparking tools to collect absorbed material.

7. HANDLING AND STORAGE

Individual protection measures Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Ensure adequate ventilation.

Conditions for safe storage, including incompatibilities: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep container closed when not in use. Keep out of the reach of children.

Clean Up: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Use clean non-sparking tools to collect absorbed material.

Incompatible Products: Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

Component	ACGIH TLV
Naphthalene (constituent) 91-20-3	TWA: 10 ppm STEL: 15 ppm Skin
Component	OSHA PEL
Naphthalene (constituent) 91-20-3	TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 mg/m ³
Component	Ontario TWAEV
Triethylene tetramine 112-24-3	TWA: 0.5 ppm TWA: 3 mg/m ³ Skin
Naphthalene (constituent) 91-20-3	TWA: 10 ppm STEL: 15 ppm Skin
Component	Mexico OEL (TWA)
Naphthalene (constituent) 91-20-3	TWA/LMPE-PPT: 10 ppm TWA/LMPE-PPT: 50 mg/m ³ STEL/LMPE-CT: 15 ppm STEL/LMPE-CT: 75 mg/m ³

Control Parameters

Appropriate Engineering Controls Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Users are advised to consider national Occupational Exposure Limits or other equivalent values. In case of insufficient ventilation, wear suitable respiratory equipment.

Individual Protection Measures

Individual protection measures Wear chemical protective clothing.

Eye/face protection Wear safety glasses with side shields (or goggles). If splashes are likely to occur. Wear suitable face shield. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin protection – Hand protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking or smoking. Wash contaminated clothing before reuse. Avoid contact with eyes, skin and clothing. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Water
Colors	white liquid
Odor	Characteristic
Odor threshold	No testing available.
pH	No testing available
Melting Point/Freezing Point	No testing available
Initial Boiling Point and Boiling Range	>149°C
Flash Point	41°C
Evaporation rate	No testing available.
Flammability	No testing available.
Upper/Lower Flammability or Explosive Limits	No testing available.
Vapor Density	0.95
Vapor Pressure	No testing available.
Solubility	Immiscible
% Volatiles (by volume)	37.88
Specific Gravity	No testing available
Viscosity	No testing available

10. STABILITY AND REACTIVITY

Reactivity	No data available
Chemical Stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing
Conditions to avoid	Keep away from open flames, hot surfaces and sources of ignition.
Incompatible materials	Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.
Hazardous Decomposition Products	Thermal decomposition can lead to release of irritating gases and vapors. Carbon dioxide (CO ₂). Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Toxicological Information

Inhalation: There is no data for this product.
Eye Contact: There is no data for this product.
Skin Contact: There is no data for this product.
Ingestion: There is no data for this product.

Component	Oral LD50
Naphtha (petroleum), heavy aromatic 64742-94-5	>5000 mg/kg (Rat)

Triethylene tetramine 112-24-3	2500 mg/kg (Rat)
Methyltrimethoxysilane 1185-55-3	12300 µL/kg (Rat)
Aminoethylaminopropyltrimethoxysilane 1760-24-3	7460 µL/kg (Rat)
Naphthalene (constituent) 91-20-3	490 mg/kg (Rat)
1,2,4-Trimethylbenzene (constituent) 95-63-6	3400 mg/kg (Rat)
Component	LD50 Dermal
Naphtha (petroleum), heavy aromatic 64742-94-5	>2000 mg/kg (Rabbit)
Triethylene tetramine 112-24-3	550 mg/kg (Rabbit)
Naphthalene (constituent) 91-20-3	>2500 mg/kg (Rat) >20 g/kg (Rabbit)
Naphtha (petroleum), heavy aromatic 64742-94-5	>590 mg/m ³ (Rat) 4 h
Naphthalene (constituent) 91-20-3	>340 mg/m ³ (Rat) 1 h
1,2,4-Trimethylbenzene (constituent) 95-63-6	g/m ³ (Rat) 4 h
1,2,4-Trimethylbenzene (constituent) 95-63-6	>3160 mg/kg (Rabbit)

Skin corrosion/irritation No test data available

Serious eye damage/irritation No test data available

Respiratory or skin sensitization No test data available

Germ cell mutagenicity No test data available

Carcinogenicity No test data available

Reproductive toxicity No test data available

STOT-single exposure No test data available

STOT-repeat exposure No test data available

Aspiration hazard No test data available

Acute Toxicity No test data available

Likely routes to exposure Skin

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	IARC
Naphthalene (constituent) 91-20-3	Group 2B

Component	NTP
Naphthalene (constituent) 91-20-3	Reasonably Anticipated

Component	OSHA
Naphthalene (constituent) 91-20-3	X

Numerical measures of toxicity - Product Information

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

ATEmix (oral) - 13,638.00 mg/kg
ATEmix (dermal) - 5,588.00 mg/kg mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity: None known. 0% of the mixture consists of components of unknown hazards to the aquatic environment

Component	Fish
Triethylene tetramine	96h LC50 Pimephales promelas: 495 mg/L
112-24-3	96h LC50 Poecilia reticulata: 570 mg/L [[semi-static]
Naphthalene (constituent) 91-20-3	96h LC50 Oncorhynchus mykiss: 0.91 - 2.82 mg/L [static] 96h LC50 Pimephales promelas: 5.74 - 6.44 mg/L [flow-through] 96h LC50 Oncorhynchus mykiss: 1.6 mg/L [flow-through] 96h LC50 Pimephales promelas: 1.99 mg/L [static] 96h LC50 Lepomis macrochirus: 31.0265 mg/L [static]
1,2,4-Trimethylbenzene (constituent) 95-63-6	96h LC50 Pimephales promelas: 7.19 - 8.28 mg/L [flow-through]

Component	Algae/aquatic plants
Triethylene tetramine 112-24-3	72h EC50 Desmodesmus subspicatus: 2.5 mg/L 72h EC50 Pseudokirchneriella subcapitata: 20 mg/L 96h EC50 Pseudokirchneriella subcapitata: 3.7 mg/L
Naphthalene (constituent) 91-20-3	72h EC50 Skeletonema costatum: 0.4 mg/L

Component	Crustacea
Triethylene tetramine 112-24-3	48h EC50 Daphnia magna: 31.1 mg/L
Naphthalene (constituent) 91-20-3	48h EC50 Daphnia magna: 1.09 - 3.4 mg/L [static] 48h EC50 Daphnia magna: 1.96 mg/L [Flow through] 48h LC50 Daphnia magna: 2.16 mg/L
1,2,4-Trimethylbenzene (constituent) 95-63-6	48h EC50 Daphnia magna: 6.14 mg/L

Persistence and Degradability: No information available.

Bioaccumulation

Component	Partition coefficient
Naphtha (petroleum), heavy aromatic 64742-94-5	4.5
Triethylene tetramine 112-24-3	-1.4
Naphthalene (constituent) 91-20-3	3.3
1,2,4-Trimethylbenzene (constituent) 95-63-6	3.63

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Contain and dispose of waste according to local regulations.
Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT In the U.S. and Canada, this material may be reclassified as a combustible liquid and is not regulated, via surface transportation, in containers less than 119 gallons or 450 liters [per 49 CFR 173.150 (f)] [per Transportation of Dangerous Goods Regulations/Clear Language Part 1.33].

UN/ID no. UN1210
Proper Shipping Name Printing Ink Related Material
Hazard Class 3
Packing Group III

ICAO / IATA / IMDG / IMO

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Further information The product is not classified as dangerous for carriage.

15. REGULATORY INFORMATION

International Inventories

All components are listed on the TSCA Inventory. For further information, please contact: Supplier (manufacturer/importer/downstream user/distributor).

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Naphthalene (constituent)	91-20-3	1 - 5	0.1

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act.

Component	CAS-No	Weight %
Naphthalene (constituent)	91-20-3	1 - 5

U.S. State Regulations

Component	Massachusetts Right To Know
Triethylene tetramine 112-24-3	X
Naphthalene (constituent) 91-20-3	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X
Component	Minnesota Right To Know
Naphthalene (constituent) 91-20-3	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X
Component	New Jersey Right To Know
Triethylene tetramine 112-24-3	X
Naphthalene (constituent) 91-20-3	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X

Component	Pennsylvania Right To Know
Triethylene tetramine 112-24-3	X
Naphthalene (constituent) 91-20-3	X
1,2,4-Trimethylbenzene (constituent) 95-63-6	X

California Prop. 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm

Component	California Prop. 65
Naphthalene (constituent)	Carcinogen

Canada

Component	NPRI - National Pollutant Release Inventory
Naphtha (petroleum), heavy aromatic 64742-94-5	Part 5, Other Groups and Mixtures Part 4 Substance as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999
Naphthalene (constituent) 91-20-3	Part 1, Group A Substance Part 4 Substance as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999
1,2,4-Trimethylbenzene (constituent) 95-63-6	Part 1, Group A Substance Part 5, Individual Substances Part 4 Substance as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999

16. OTHER INFORMATION

Revision	Revision 1 9/30/2015: Initial revision to include the requirements of the HCS/HazCom 2012 Final Rule.
Further information	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.
HMIS LABELLING	HEALTH 2, FLAMMABILITY 2, REACTIVITY 0, PERSONAL PROTECTION X