

MATERIAL SAFETY DATA SHEET

MITON EPOXY RESIN

MSDS DATE: Dec. 5, 2011

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MITON XXX
SYNONYMS: Epoxy Hardener, Epoxy curing agent
PRODUCT CODES: 205,208,223,224,225,227,228,377,414,514,518,525

MANUFACTURER: INFRATECH POLYMERS INC.
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CHEMICAL NAME: ANCAMINE MCA
CHEMICAL FAMILY:
SHIPPING NAME: Amines, Liquid, Corrosive, N.O.S. (3-Aminomethyl - 3,5,5-trimethylcyclohexyl-a mine) Class Description:
Class 8.0 corrosive Material: PKG GR III UN 2735

PRODUCT USE: Epoxy curing agent
PREPARED BY: Infratech Polymers Inc.

SECTION 1 NOTES: This MSDS covers multiple blend types of epoxy curing agents. Individual composition of the hazardous components of the formulation will vary between types.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Component	% by Weight	CAS Number	OSHA PEL – TWA (mg/m ³)	ACGIH TLV – TWA (mg/m ³)	LD ₅₀ (rat, oral)	LC ₅₀
Benzyl alcohol	>35%	100-51-6				
IPD Reaction Products with Phenol	<35%	25265-17-2				
Isophorone diamine (IPD)	<35%	2855-13-2				
Phenol	<10%	108-95-2	19	19		

SECTION 2 NOTES:

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful if swallowed.
Toxic by inhalation.
Components of the product may affect the nervous system.
Severe respiratory irritant
Severe skin irritant.
Severe eye irritant.
May cause sensitization by skin contact.

ROUTES OF ENTRY: Inhalation, Skin, Ingestion

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SECTION 3: HAZARDS IDENTIFICATION CONTINUED**POTENTIAL HEALTH EFFECTS**

- EYES:** Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. Exposed individuals may see rings around bright lights. This effect is temporary and has no known residual effect. Product vapour can cause glaucopsia (corneal edema) when absorbed into the tissue of the eye from the atmosphere. Severe eye irritation.
- SKIN:** If absorbed through the skin may cause central nervous system effects. such as headache, nausea, dizziness, confusion, breathing difficulties.
- INGESTION:** Harmful if swallowed. May cause central nervous system effects, such as headache, nausea, vomiting, abdominal pain, dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure.
- INHILATION:** Toxic by inhalation. Harmful if inhaled and may cause delayed lung injury. May cause central nervous system effects, such as headache. nausea. dizziness, confusion, breathing difficulties. Severe cases of overexposure can result in respiratory failure. May cause nose, throat, and lung irritation. Inhalation of vapours and/or aerosols in high concentration may cause irritation of respiratory system.

ACUTE HEALTH HAZARDS: Harmful is swalled. Corrosive to eyes, respiratory system, and skin. Severe eye irritation. Severe respiratory tract irritation. Severe skin irritation. Target organs are eye, skin, liver / hepatic system, kidney, spleen, pancreas, respiratory system. Acute: Produced vapours in low concentration can cause lacrimation, conj and corneal edema when absorbed into tissue of eye. EFT is transient and has no known residual effects. Burns of the eye may cause blindness. Contact with undiluted product with eyes and skin quickly causes severe irritation, pain, and may cause burns, necrosis and effects of overexposure.

CHRONIC HEALTH HAZARDS: This product curtains no rated carcinogens according to IARC, ACGIH, NTP, and/or OSHA in concentrations of C.1 percent or greater. Prolonged contact may result in chemical burns and permanent damage. Repeated or prolonged contact causes sensitization, asthma and eczemas, chronic respiratory disease (bronchitis emphysema), eye disease, kidney disorders, liver disorders, skin disorders and allergies.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Preexisting skin conditions of the lungs and skin may become sensitive and irritated.

CARCINOGENICITY:

NTP: NO, IARC: NO, OSHA: NO

SECTION 3 NOTES:**SECTION 4: FIRST AID MEASURES**

- EYES:** Flush immediately with water for 15 minutes. Consult a physician if irritation occurs.
- SKIN:** Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay, Take off contaminated clothing and ewes immediately. NOTE TOPHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation.
- INGESTION:** Never give anything by mouth to an unconscious person If a person vomits when lying on his back, place him in the recovery position. Prevent aspiration of vomit. Turn victim's head to the side.
- INHALATION:** If breathing has stopped or is laboured, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

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SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: NA
(% BY VOLUME) LOWER: NA

FLASH POINT:

>110°C / 230°F

METHOD USED:

TCC

AUTOIGNITION TEMPERATURE:

NA

NFPA HAZARD CLASSIFICATION

HEALTH: NA

FLAMMABILITY: NA

REACTIVITY: NA

OTHER:

HMIS HAZARD CLASSIFICATION

HEALTH: 3

FLAMMABILITY: 1

PHYSICAL HAZARD: 0

PROTECTION: J

EXTINGUISHING MEDIA:

Alcohol-resistant foam. Carbon dioxide (CO₂) Dry chemical, Dry sand. Limestone powder.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

HAZARDOUS DECOMPOSITION PRODUCTS:

May generate ammonia gas. May generate toxic nitrogen oxide gasses. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from fire fighting to enter drains or watercourses. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces obnoxious and toxic fumes.

SECTION 5 NOTES:

Treat as a Class B. Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self-contained breathing apparatus for fire fighting if necessary. Do not allow run-off from fire fighting to enter drains or watercourses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES:

Contain spill from exposure to water and soil. Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas. Construct a dike to prevent spreading. Approach suspected leak areas with caution. Place in appropriate chemical waste container.

SECTION 6 NOTES:

Dispose material according to governing regulations. Do not dispose of in sanitary sewers. Open enclosed spaces to outside atmosphere. Evacuate area and do not approach spilled product without proper PPE. If possible, stop flow of product.

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SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Handle product with care. Keep containers upright at all times and contain product in suitable solvent and heat resistant containers. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid breathing vapors and/or aerosols. Avoid contact with eyes. Use only in well-ventilated areas. Use personal protective equipment. When using, do not eat, drink or smoke.

OTHER PRECAUTIONS: Avoid contact with skin.

SECTION 7 NOTES: Do not store in reactive metal containers.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide readily accessible eye wash stations and safety showers. Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

VENTILATION :

RESPIRATORY PROTECTION: Wear appropriate respirator when ventilation is inadequate.

EYE PROTECTION: Chemical resistant goggles must be worn.

SKIN PROTECTION: Long sleeve shirts and trousers without cuffs.

OTHER PROTECTIVE EQUIPMENT: Neoprene gloves.
PVC disposable gloves.
Butyl-rubber gloves.
Nitrile rubber gloves.
Impervious gloves.
The breakthrough time of the selected glove(s) must be greater than the intended use period.

WORK HYGIENIC PRACTICES: Discard contaminated leather articles. Provide readily accessible eye wash stations and safety showers. Wash at the end of each workshift and before eating, smoking or using the toilet.

SECTION 8 NOTES:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Slight amber colour liquid

ODOR: Irritating

PHYSICAL STATE: Low viscosity liquid.

pH AS SUPPLIED: Alkaline
pH (Other): NA

BOILING POINT: 204°C / 399°F

SG: 1.02

FLASHPOINT: 110°C

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES CONTINUED

SPECIFIC GRAVITY: 0.95 – 1.3

EVAPORATION RATE: NA

SOLUBILITY IN WATER: <0.1 g/l

PERCENT SOLIDS BY WEIGHT: 100

VOC's: 0 g / l

SECTION 9 NOTES:

SECTION 10: STABILITY AND REACTIVITY

STABLE

UNSTABLE

STABILITY: X

CONDITIONS TO AVOID (STABILITY):

Avoid excessive heating. Can react vigorously with strong oxidizing agents, strong mineral acid, and strong mineral and organic bases. Avoid contact with water or liquids. Do not allow molten product to contact water or other liquids, This can cause violent eruptions, splatter heated material, or ignite flammable material. Reaction with some curing agents may produce considerable heat and possible violent decomposition.

INCOMPATIBILITY (MATERIAL TO AVOID):

Sodium hypochlorite.
Organic acids (i.e. acetic acid, citric acid etc.).
Mineral acids.
Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.
Reactive metals (e.g. sodium, calcium, zinc etc.).
Materials reactive with hydroxyl compounds.
Oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:

Nitric acid.
Ammonia.
Nitrogen oxides (NOx).
Nitrogen oxide can react with water vapors to form corrosive nitric acid.
Carbon monoxide.
Carbon dioxide (CO2).
Aldehydes.
Flammable hydrocarbon fragments (e.g., acetylene).

HAZARDOUS POLYMERIZATION:

Will not occur.

CONDITIONS TO AVOID (POLYMERIZATION): NA

SECTION 10 NOTES:

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Acute Health Hazard

Ingestion :	LD50 : 1,752 mg/kg Species : Rat.
Inhalation :	ISO TC58 (1 h) : 0 ppm Method : Estimated.
Skin:	LD50 : > 2,000 mg/kg Species : Rabbit. Method : Estimated.
Eye irritation/corrosion :	Severe eye irritation.
Acute dermal irritation/corrosion	Severe skin irritation. Corrosive to the skin of a rabbit.
Sensitization :	Did not cause sensitization on laboratory animals.

Chronic Health Hazard

Rats exposed orally to 800 mg/kg benzyl alcohol for thirteen weeks exhibited CNS depression and histopathological changes in the brain, thymus and skeletal muscles. The No Observed Adverse Effect Level (NOAEL) was 400mg/kg. No evidence of carcinogenicity was seen in a two-year study with rats and mice. Adsorption of phenolic solutions through the skin may be very rapid and can cause death. Lesser exposures can cause damage to the kidneys, liver, pancreas and spleen, and edema of the lungs. Chronic exposures can cause death from liver and kidney damage.

SECTION 11 NOTES:

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:

Ecotoxicity effects

Aquatic toxicity	No data is available on the product itself.	
Toxicity to fish - Components		
Benzyl alcohol	LC50 (96 h) : 10 mg/l	Species : Bluegill sunfish (<i>Lepomis macrochirus</i>).
Benzyl alcohol	LC50 (96 h) : 460 mg/l	Species : Fathead minnow (<i>Pimephales promelas</i>).
Toxicity to daphnia - Components		
Phenol	EC50 (48 h) : 4.2 mg/l	Species : Daphnia
Phenol	EC50 (48 h) : 5.55 mg/l	Species : Daphnia
Phenol	EC50 (48 h) : 6.6 mg/l	Species : Daphnia
Toxicity to algae - Components		
Benzyl alcohol	LC50 (72 h) : 700 mg/l	Species : Algae.
Toxicity to other organisms :	No data available.	
Persistence and degradability		
Mobility :	No data available.	
Bioaccumulation :	No data is available on the product itself.	
Bioaccumulation - Components		
Benzyl alcohol	Low bioaccumulation potential.	
Phenol	Low bioaccumulation potential.	

SECTION 12 NOTES:

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SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of waste according to local governing authorities of the region.

RCRA HAZARD CLASS:

SECTION 13 NOTES:

SECTION 14: TRANSPORT INFORMATION

TRANSPORTATION

CONTAINER FORM - CFR

PROPER SHIPPING NAME: Amines, liquid, corrosive, n.o.s. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine)
HAZARD CLASS: 8
ID NUMBER: UN2735
PACKING GROUP: III

WATER TRANSPORTATION - IMDG

PROPER SHIPPING NAME: Amines, liquid, corrosive, n.o.s. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine)
HAZARD CLASS: 8
ID NUMBER: UN2735
PACKING GROUP: III

AIR TRANSPORTATION - IATA

PROPER SHIPPING NAME: Amines, liquid, corrosive, n.o.s. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine)
HAZARD CLASS: 8
ID NUMBER: UN2735
PACKING GROUP: III

CALIFORNIA TRANSPORTATION - CTC

PROPER SHIPPING NAME: Amines, liquid, corrosive, n.o.s. (3-Aminomethyl-3,5,5-trimethylcyclohexylamine)
HAZARD CLASS: 8
ID NUMBER: UN2735
PACKING GROUP: III

SECTION 14 NOTES: This product is not regulated.

SECTION 15: REGULATORY INFORMATION

Country	Regulatory List	Notification
USA	TWA	Included on inventory
EU	EINECS	Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no begs-polymer.
Canada	DSL	Included or inventory.
Australia	AICS	included on Inventory.
Japan	ENCS	Included an Inventory.
South Korea	ECL	Not on Inventory.
China	SEPA	included on Inventory.
Philippines	PICCS	Included on inventory.
EPA SARA Title III Section 313 (4C CFR 372) Component(s) above "de minimum" level:		Phenol
U.S. California Safe Drinking Water & Toxic Enforcement Act (Proposition 85)		This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.
WHMIS Hazard Classification;		Toxic material causing other toxic effects, corrosive material

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

PREPARATION INFORMATION: Prepared by Randy Blystone December 6, 2011

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