



MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BUEHLER EPOTHIN HARDENER

IDENTIFICATION NUMBER: 20-8142-016, 20-8142-064, 20-8142-032

PRODUCT USE/CLASS: Epoxy hardener

SUPPLIER:

BUEHLER, a division of Illinois Tool Works Inc.

41 WAUKEGAN ROAD

LAKE BLUFF, IL 60044

EMERGENCY: 800-424-9300

INFORMATION: 847-295-6500

PREPARER: Technical Department, 847-295-6500

PREPARE DATE: 10/18/2011, 18 October 2011

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT%
01	Polyoxyalkylamine blend	NONE - MIX	30.0-60.0
02	Nonyl phenol	25154-52-3	5.0-10.0
03	Benzene-1,3-dimethaneamine	1477-55-0	10.0-30.0
04	Substituted phenol	TRADE SECRET	10.0-30.0
05	Triethylenetetramine	112-24-3	1.0-5.0
06	Trimethylhexanediamine	3236-53-1	10.0-30.0

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL – CEILING	COMPANY TLV-TWA	SKIN
N.E	N.E	N.E	N.E	N.E	N.E	NO
02	N.E	N.E	N.E	N.E	N.E	NO
03	N.E	0.1 mg/m ³	N.E	N.E	0.1mg/m ³ (C)	NO
04	N.E	N.E	N.E	N.E	N.E	NO
05	N.E	N.E	N.E	N.E	N.E	NO
06	N.E	N.E	N.E	N.E	N.E	NO

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful if swallowed or absorbed through skin. Causes eye burns. Causes skin burns. Vapors irritating to eyes and respiratory tract. May cause allergic skin reaction. Harmful to aquatic organisms.

ACUTE EFFECTS – EYE CONTACT: CORROSIVE to the eyes and may cause severe damage including blindness.

ACUTE EFFECTS - SKIN CONTACT: May be absorbed through the skin in harmful amounts. Strong skin sensitizer. CORROSIVE. Contact may cause chemical burns and blistering.

ACUTE EFFECTS – INHALATION: Harmful if inhaled. Liquid aspirated into lungs may cause serious injury or death. Vapors and/or aerosols formed at elevated temperatures can be irritating. Prolonged or very high overexposure may cause burns to the mucous membranes with severe pneumonitis.

ACUTE EFFECTS - INGESTION: Can burn mouth, throat and stomach, with nausea, severe pain, and vomiting. Slightly toxic.

CHRONIC OVEREXPOSURE EFFECTS: *Triethylenetetramine (TETA) caused embryofetal toxicity and fetal malformations when fed to pregnant rats. Similar effects were not seen in studies in which this material was applied to the skin of rabbits, a more relevant route of industrial exposure. These effects are believed to be secondary to copper deficiency, resulting from the chelating activity of the amine. *Preexisting pulmonary and dermatological disorders may be aggravated by exposure to hazardous components. *Pregnant rats fed high doses of material during pregnancy showed evidence of fetal injury.

OTHER INFORMATION: No information.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT, SKIN ABSORPTION, INHALATION, EYE CONTACT

SECTION 4 – FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

SKIN CONTACT: Immediately flush skin with plenty of water. Remove clothing. Get medical attention immediately.

Wash clothing separately before reuse.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

INGESTION: If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN: Treat symptomatically. If swallowed, gastric lavage is indicated.

SECTION 5 – FIRE FIGHTING MEASURES

FLASH POINT: 230 F (PENSKEY-MARTENS C.C.)

LOWER EXPLOSIVE LIMIT: N.A.

UPPER EXPLOSIVE LIMIT: N.A.

AUTOIGNITION TEMPERATURE: No data

EXTINGUISHING MEDIA: FOAM, CO₂, DRY CHEMICAL, WATER FOG, ALCOHOL FOAM

UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may rupture or explode (due to pressure build-up) when exposed to extreme heat. Irritating and/or toxic gases or fumes may be generated by thermal decomposition or combustion.

SPECIAL FIREFIGHTING PROCEDURES: Use NIOSH-approved self-contained breathing apparatus and full protective clothing. Use water to cool exposed containers. Water stream directed into fire may cause frothing with subsequent spread of flame.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Reclaim clean material. Wear appropriate protective equipment during cleanup. Absorb with inert material, such as clay. Sweep or shovel into loosely-covered waste container and remove to appropriate waste area. Dispose of in accordance with federal, state, and local regulations. Harmful to aquatic organisms. Prevent entry into drains and/or waterways.

SECTION 7 – HANDLING AND STORAGE

HANDLING: Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Avoid breathing dust, vapor, mist or gas. Avoid contact with skin and eyes. **FOR INDUSTRIAL USE ONLY.** Empty containers may retain product residue and can be dangerous. Observe all labeled precautions even after container is emptied.

STORAGE: Keep container closed when not in use.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust as needed to control vapor or dust levels to below lowest component TLV.

RESPIRATORY PROTECTION: None normally required under general ventilation. If TLV/PEL is exceeded, if use is performed in a poorly-ventilated space, or if inhalation effects occur, use NIOSH-approved vapor cartridge respirator in accordance with applicable health and safety regulations and manufacturer's recommendations.

SKIN PROTECTION: Clean clothing to cover skin. Butyl rubber gloves. Neoprene gloves. Nitrile gloves. Teflon gloves. Viton gloves. Supported PVA gloves. Synthetic apron.

EYE PROTECTION: Chemical splash goggles. Face shield.

OTHER PROTECTIVE EQUIPMENT: Accessible eye wash and safety shower.

HYGIENIC PRACTICES: Follow good general industrial safety practices during use.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE:	278 - 500 F	VAPOR DENSITY:	Is heavier than air
ODOR:	Ammonia-like	ODOR THRESHOLD:	No data
APPEARANCE:	Clear thin	EVAPORATION RATE:	Is slower than Butyl Acetate
SOLUBILITY IN H ₂ O:	Appreciable		
FREEZE POINT:	No data	SPECIFIC GRAVITY:	0.97
VAPOR PRESSURE:	No data	pH @ 0.0%:	N.A.
PHYSICAL STATE:	Liquid	VISCOSITY:	Low
COEFFICIENT OF WATER/OIL DISTRIBUTION:	No data		

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 10 – STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Prolonged exposure to heat. Exposure to moisture.

INCOMPATIBILITY: Strong Lewis or mineral acids. Strong bases or oxidants. Reaction with epoxy resins and isocyanates in large amounts or under uncontrolled conditions releases considerable heat and may release acrid fumes. Aldehydes, ketones, acrylates, and organic halides.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon. Oxides of nitrogen, ammonia. Various hydrocarbons. Irritating aldehydes and ketones.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 11 – TOXICOLOGICAL PROPERTIES

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
Trimethylhexanediamine.....	No information	No information
Polyoxyalkyleneamine	derm(rbt)>10 g/kg.....	No information
Nonyl phenol	derm(rbt) 2.14g/kg	No information
Benzene-1,3-dimethaneamine.....	Skn rbt 2000 mg/kg	Inh rat 700ppm/1H
Substituted phenol.....	Oral rat 2951mg/kg	No information
Triethylenetetramine.....	derm(rbt)805mg/kg	No information

SECTION 12 – ECOLOGICAL INFORMATION

ECOLOGICAL TEST DATA: No information.

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Review all current federal, state, and local regulations regarding health and disposal for appropriate disposal procedures. Product disposed of in "as sold" condition is not considered a hazardous waste under Federal RCRA regulations. FOR SMALL AMOUNTS: If resin and hardener are available, mix and cure in accordance with product directions. When cured, product is inert and non-hazardous, and may be placed in industrial or municipal landfill if local regulations permit. DO NOT landfill free liquid. Fuels blending or incineration of free liquid recommended if permitted.

SECTION 14 – TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Polyamines, Liquid, Corrosive, nos	
DOT TECHNICAL NAME: (Aliphatic amine blend)	
DOT HAZARD CLASS: 8	HAZARD SUBCLASS: N.A.
DOT UN/NA CLASS: UN2735	PACKAGING GROUP: II
	RESP. GUIDE PAGE: 153
INTERNATIONAL SHIPPING NAME: Polyamines, Liquid, Corrosive, nos (Aliphatic amine blend)	
INTERNATIONAL ID NUMBER: UN2735	
IMDG CLASS (1°, 2°): 8, none	IMDG PAGE NUMBER: II
IMDG EMS: 805	IATA CLASS (1°, 2°): 8, none

SECTION 15 – REGULATORY INFORMATION

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

CERCLA – SARA HAZARD CATEGORY: THIS PRODUCT HAS BEEN REVIEWED, AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES: IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD

SARA SECTION 313: THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 AND 40 CFR PART 372:

----- CHEMICAL NAME ----- CAS NUMBER WT/WT % IS LESS THAN

No SARA Section 313 components exist in this product.

TOXIC SUBSTANCE CONTROL ACT: THE CHEMICAL SUBSTANCES IN THIS PRODUCT ARE ON THE TSCA SECTION 8 INVENTORY. THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITED STATES:

----- CHEMICAL NAME ----- CAS NUMBER

Nonyl phenol 25154-52-3

Para-tert-butyl phenol 98-54-4

SECTION 15 – REGULATORY INFORMATION

CALIFORNIA PROPOSTION 65: No Proposition 65 chemicals known to exist in this product.

CANADIAN WHMIS: THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: D2A, E

COMPONENT RCRA CLASSIFICATIONS: Not regulated

COMPONENT RCRA CODES: No information.

CERCLA RQ VALUE (MINIMUM): None known

SECTION 16 – OTHER INFORMATION

HMIS RATINGS

HEALTH: 3

FLAMMABILITY: 1

REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 1/24/08; 24 Jan 08

REASON FOR REVISION: Administrative change for new format.

VOLATILE ORGANIC COMPOUNDS: 0 grams/ltr

LEGEND:

N.A. – NO INFORMATION

N.E. – NOT ESTABLISHED

N.D. – NOT DETERMINED

ABBREVIATIONS: ACGIH = AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS; OSHA = OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION; TLV-TWA = THRESHOLD LIMIT VALUE – TIME WEIGHTED AVERAGE (8 HOURS); STEL = SHORT-TERM EXPOSURE LIMIT (15 MINUTES); C = CEILING VALUE; PEL = PERMISSIBLE EXPOSURE LIMIT

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