



## MATERIAL SAFETY DATA SHEET

### SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BUEHLER EPOXICURE HARDENER  
 IDENTIFICATION NUMBER: 20-8132-008, 20-8132-032 (20-8133-001)  
 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: 03/23/09, 23 March 2009

### SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT%			
01	Alkyl ether amine	39423-51-3	10.0-30.0			
02	Diethylenetriamine	111-40-0	10.0-30.0			
03	Triethylenetetramine	112-24-3	10.0-30.0			
04	Polyethyleneamine epoxy adduct	unknown	30.0-60.0			
ITEM	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL – CEILING	COMPANY TLV-TWA	SKIN
01	N.E.	N.E.	N.E.	N.E.	N.E.	NO
02	1 ppm	N.E.	1 ppm	N.E.	1ppm NIOSH	YES
03	N.E.	N.E.	N.E.	N.E.	N.E.	NO
04	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 absorbed through skin. Harmful if inhaled or swallowed. Causes skin and eye burns. Vapors extremely irritating to eyes and respiratory tract. May cause allergic skin reaction. May cause allergic respiratory reaction.

**ACUTE EFFECTS – EYE CONTACT:** CORROSIVE to the eyes and may cause severe damage including blindness. Product vapor can cause lacrimation, conjunctivitis, and corneal edema when absorbed into the tissue of the eye. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. The effect is transient and has no known residual effect.

**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:** Liquid aspirated into lungs may cause serious injury or death. Potential respiratory sensitizer. Prolonged or very high overexposure may cause burns to the mucous membranes with severe pneumonitis.

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

**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. \*Prolonged or repeated overexposure may cause lung damage.

**OTHER INFORMATION:** No information.

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

### SECTION 4 – FIRST AID MEASURES

**EYE CONTACT:** Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes immediately examined and tested by medical personnel.

**SKIN CONTACT:** Immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. GET MEDICAL ATTENTION. Contaminated clothing and leather articles should be disposed of in a manner which limits further exposure.

**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: 215 F (PENSKY-MARTENS C.C.)

LOWER EXPLOSIVE LIMIT: N.A.

UPPER EXPLOSIVE LIMIT: N.A.

AUTOIGNITION TEMPERATURE: No data

EXTINGUISHING MEDIA: ALCOHOL FOAM, CO<sub>2</sub>, DRY CHEMICAL, FOAM, WATER FOG

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: 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. Decontaminate or dispose of contaminated clothing and articles. Wash spill area with soap and water.

## SECTION 7 – HANDLING AND STORAGE

HANDLING: Wash thoroughly after handling. Use with adequate ventilation. Do not get in eyes, on skin or clothing. DO NOT take internally. FOR INDUSTRIAL USE ONLY.

STORAGE: Keep container closed when not in use. KEEP OUT OF THE REACH OF CHILDREN.

## 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.

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. Do not smoke or eat during use. Wash after handling. DO NOT reuse empty containers. Follow all MSDS/label precautions even after container is emptied.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE:	278 - 404 F	VAPOR DENSITY:	Is heavier than air
ODOR:	Ammonia like	ODOR THRESHOLD:	No data
APPEARANCE:	Clear	EVAPORATION RATE:	Is slower than Butyl Acetate
SOLUBILITY IN H <sub>2</sub> O:	Appreciable		
FREEZE POINT:	No data	SPECIFIC GRAVITY:	1.0363
VAPOR PRESSURE:	No data	pH @ 0.0%:	ALK
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: No information.

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. Reaction with some nitrates or nitrites can cause the formation of cancer-causing nitrosoamines.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon. Oxides of nitrogen, ammonia. 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 -----
Alkyl ether amine	derm(rbt) 614mg/kg	No deaths satd air
Diethylenetriamine	skin(rbt)1090mg/kg	No information
Triethylenetetramine	derm(rbt)805mg/kg	No information
Polyethyleneamine epoxy adduct	No information	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. FOR SMALL AMOUNTS: If resin and hardener are available, mix and cure in accordance with product directions. When cured, product is non-hazardous, and may be placed in industrial or municipal landfill if local regulations permit. FOR LARGE AMOUNTS: Product disposed of "as sold" is not considered a hazardous waste under Federal RCRA regulations. Fuels blending recommended for free liquid if state and local regulations permit.

## SECTION 14 – TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Polyamines, Liquid, nos

DOT TECHNICAL NAME: (Diethylenetriamine, Triethylenetetramine)

DOT HAZARD CLASS: 8, CORROSIVE

HAZARD SUBCLASS: N.A.

DOT UN/NA CLASS: UN2735

PACKAGING GROUP: II

RESP. GUIDE PAGE: 153

INTERNATIONAL SHIPPING NAME: Polyamines, liquid, nos (Diethylenetriamine, Triethylenetetramine)

INTERNATIONAL ID NUMBER: UN2735

IMDG CLASS (1°, 2°): 8, none

IMDG PAGE NUMBER: II

IMDG EMS: 808

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: none

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

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

No components found.

NEW JERSEY RIGHT-TO-KNOW: THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP 5 COMPONENTS IN THIS PRODUCT: none

PENNSYLVANIA RIGHT-TO-KNOW: THE FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%: none

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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