

SAFETY DATA SHEET



Date Prepared : 03/19/2014
 SDS No : TC-1600 PART B
 Date Revised : 05/18/2017
 Revision No : 1

TC-1600 PART B

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: TC-1600 PART B
GENERAL USE: Epoxy curing agent

MANUFACTURER

BJB Enterprises, Inc.
 14791 Franklin Avenue
 Tustin, CA 92780
Emergency Phone: (714) 734-8450

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (USA & Canada): (800) 424-9300
 or (703) 527-3887 CCN# 2820

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Health:

Acute Toxicity (Oral), Category 4
 Acute Toxicity (Dermal), Category 3
 Acute Toxicity (Inhalation), Category 3
 Skin Corrosion, Category 1
 Serious Eye Damage, Category 1
 Respiratory Sensitization, Category 1
 Skin Sensitization, Category 1
 Reproductive Toxicity, Category 2
 Target Organ Toxicity (Repeated exposure), Category 2

Environmental:

Chronic Hazards to the Aquatic Environment, Category 2

GHS LABEL



Skull and
crossbones



Corrosion



Health hazard



Environment

SIGNAL WORD: DANGER

HAZARD STATEMENTS

H302: Harmful if swallowed.
 H311: Toxic in contact with skin.
 H331: Toxic if inhaled.
 H314: Causes severe skin burns and eye damage.
 H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H317: May cause an allergic skin reaction.
 H361: Suspected of damaging fertility or the unborn child.
 H373: May cause damage to organs through prolonged or repeated exposure.
 H411: Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

TC-1600 PART B**Prevention:**

- P201: Obtain special instructions before use.
 P202: Do not handle until all safety precautions have been read and understood.
 P260: Do not breathe dust/fume/gas/mist/vapours/spray.
 P271: Use only outdoors or in a well-ventilated area.
 P284: In case of inadequate ventilation wear respiratory protection.
 P264: Wash thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P272: Contaminated work clothing should not be allowed out of the workplace.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.
 P273: Avoid release to the environment.

Response:

- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P363: Wash contaminated clothing before reuse.
 P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P310: Immediately call a POISON CENTER/doctor/physician.
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 P391: Collect spillage.

Storage:

- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
 P405: Store locked up.

Disposal:

- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Cyclohexanamine, 4,4'-methylenebis[2-methyl-	30 - 60	6864-37-5
Tetraethylenepentamine	10 - 30	112-57-2
Methylenebis(cyclohexanamine, 4,4'-	7 - 13	1761-71-3
2-Ethyl-4-methylimidazole	5 - 10	931-36-2
Diethylenetriamine (DETA)	3 - 7	111-40-0
4,4'-Isopropylidenediphenol	1 - 5	80-05-7
1h-imidazole, 5-methyl-	0.1 - 1	822-36-6

4. FIRST AID MEASURES

- EYES:** Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get immediate medical attention.
- SKIN:** Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention immediately. Wash clothing before reuse.
- INGESTION:** If swallowed, call a physician immediately. DO NOT induce vomiting. Provided the patient is conscious, wash out mouth with water. Never give anything by mouth to an unconscious person.
- INHALATION:** Remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get immediate medical attention.
- NOTES TO PHYSICIAN:** Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

TC-1600 PART B**5. FIRE FIGHTING MEASURES**

GENERAL HAZARD: May generate ammonia gas. May generate nitrogen oxide gases. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning of material produces obnoxious and toxic fumes.

EXTINGUISHING MEDIA: Water spray, carbon dioxide, dry chemical, or alcohol-resistant foam.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, nitrogen oxides, nitric acid, ammonia, aldehydes, nitrosamine, and chlorine.

FIRE FIGHTING PROCEDURES: Cool fire exposed containers with water spray. Remove containers from the fire area if possible. Do not release runoff from fire control methods to sewers or waterways.

FIRE FIGHTING EQUIPMENT: Firefighters should wear positive pressure self-contained breathing apparatus (SCBA) and consider use of unmanned hose holders or monitor nozzles for fighting large fires.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Evacuate the area. Clean-up should only be performed by trained personnel. People dealing with a major spill should wear full protective clothing including appropriate respiratory protection. Prevent product spill from entering sewers or waterways. Neutralize small spills with a decontaminant.

LARGE SPILL: Contain and absorb large spills onto an inert, non-flammable adsorbent carrier (such as earth or sand). Shovel into open-top drums or plastic bags for further decontamination, if necessary. Wash the spill area clean with a liquid decontaminant. Remove and properly dispose of residues. Notify applicable government authorities if release is reportable. (See CERCLA in Section 15).

ENVIRONMENTAL PRECAUTIONS

WATER SPILL: Do not discharge into drains or rivers.

GENERAL PROCEDURES: Refer to section 8 of SDS for personal protection details.

RELEASE NOTES: Composition and extent of any spill should be evaluated against local regulations and reported to the proper agencies, if necessary.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Avoid breathing vapor over open containers. Avoid open container exposure to damp air. Avoid breathing aerosols, mists, and vapors.

HANDLING: Use appropriate personal protective equipment as specified in Section 8. Handle in a well-ventilated area. Handle and use in a manner consistent with good industrial/manufacturing techniques and practices.

STORAGE: Store in a dry and well-ventilated place, away from excessive heat, in original or similar container. Avoid unnecessary contact. Protect from freezing. Containers should be tightly sealed to prevent contamination with foreign materials.

STORAGE TEMPERATURE: 65-80°F (18-27°C)

SHELF LIFE: 12 months from date of shipment under manufacturers recommended storage conditions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**EXPOSURE GUIDELINES**

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)			
Chemical Name	EXPOSURE LIMITS		
	Type	ppm	mg/m ³
Cyclohexanamine, 4,4'-methylenebis[2-methyl-	OSHA PEL	TWA	-
		STEL	-
	ACGIH TLV	TWA	-
		STEL	-
	NIOSH REL	TWA	-

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Tetraethylenepentamine	OSHA PEL	TWA	-	-
		STEL	-	-
	ACGIH TLV	TWA	-	-
		STEL	-	-
	NIOSH REL	TWA	-	-
	Methylenebis(cyclohexanamine, 4,4'-	OSHA PEL	TWA	-
STEL			-	-
ACGIH TLV		TWA	-	-
		STEL	-	-
NIOSH REL		TWA	-	-
2-Ethyl-4-methylimidazole		OSHA PEL	TWA	-
	STEL		-	-
	ACGIH TLV	TWA	-	-
		STEL	-	-
	NIOSH REL	TWA	-	-
	Diethylenetriamine (DETA)	OSHA PEL	TWA	1
STEL			-	-
ACGIH TLV		TWA	1	-
		STEL	-	-
NIOSH REL		TWA	1 ^[1]	4 ^[1]
4,4'-Isopropylidenediphenol		OSHA PEL	TWA	-
	STEL		-	-
	ACGIH TLV	TWA	-	-
		STEL	-	-
	NIOSH REL	TWA	-	-
	1h-imidazole, 5-methyl-	OSHA PEL	TWA	-
STEL			-	-
ACGIH TLV		TWA	-	-
		STEL	-	-
NIOSH REL		TWA	-	-
Footnotes:				
1. Skin				

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Safety goggles or glasses are recommended. Plastic face shields should be used for complete face protection to protect against possible splashing or spraying of material. ANSI Z87.1 or approved equivalent.

SKIN: Chemical-resistant gloves and chemical goggles, face-shield, and synthetic apron or coveralls should be used to prevent contact with eyes, skin, or clothing. Wear nitrile or neoprene gloves. Chemical resistant gloves lined with polyethylene offer maximum protection.

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RESPIRATORY: Exhaust ventilation recommended. An organic vapor cartridge or fresh air supplied respirator (NIOSH approved) may be necessary for certain applications. Consider the type of application, environmental concentrations, and other materials being used concurrently when determining respirator use and selection. Observe OSHA regulations for respirator use (29 CFR 1910.134).

PROTECTIVE CLOTHING: Protective clothing should be selected and used in accordance with 'Guidelines for the Selection of Chemical Protective Clothing' published by ACGIH.

WORK HYGIENIC PRACTICES: Contaminated clothing should be changed and washed before reuse. Eating, drinking and smoking in immediate work area should be prohibited. Wash hands before eating.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Training is important. Follow all label precautions.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Ammoniacal

COLOR: Amber

pH: Alkaline

PERCENT VOLATILE: Nil

FLASH POINT AND METHOD: 101.7°C (215°F) Pensky-Martens CC

VAPOR PRESSURE: No data available

VAPOR DENSITY: No data available

BOILING POINT: No data available

SOLUBILITY IN WATER: Partially soluble.

SPECIFIC GRAVITY: 0.98 (water=1) at 25°C (77°F)

VISCOSITY #1: 185 Centipoise at 25°C (77°F)

(VOC): Nil

10. STABILITY AND REACTIVITY

REACTIVITY: Hazardous reactions will not occur under normal transport or storage conditions.

STABILITY: This product is stable under normal ambient conditions of temperature and pressure.

CONDITIONS TO AVOID: No data available

POSSIBILITY OF HAZARDOUS REACTIONS: Reaction with peroxide may resulting violent decomposition of peroxide possibly creating an explosion. CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, nitrogen oxides, nitric acid, ammonia, aldehydes, nitrosamine, and chlorine.

INCOMPATIBLE MATERIALS: Sodium hypochlorite, organic acids, mineral acids, oxidizing agents, and nitrous acid.

11. TOXICOLOGICAL INFORMATION**ACUTE TOXICITY**

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Chemical Name	ORAL LD ₅₀	DERMAL LD ₅₀	INHALATION LC ₅₀
Cyclohexanamine, 4,4'-methylenebis[2-methyl-	320 to 460 mg/kg Rat	> 200 mg/kg Rabbit	0.42 mg/l Rat (4 h aerosol)
Tetraethylenepentamine	1716.2 mg/kg Rat	1260 mg/kg Rabbit	No data available
Methylenebiscyclohexanamine, 4,4'-	625 mg/kg Rat	2110 mg/kg Rabbit	No data available
2-Ethyl-4-methylimidazole	1000 mg/kg Rat	> 400 mg/kg Rabbit	No data available
Diethylenetriamine (DETA)	1080 mg/kg Rat	1090 mg/kg Rabbit	0.3 mg/l Rat (4 h)
4,4'-Isopropylidenediphenol	> 2000 mg/kg Rat	6400 mg/kg Rabbit	170 mg/m ³ Rat (6 h)
1h-imidazole, 5-methyl-	751 mg/kg Rat	No data available	No data available

SKIN CORROSION/IRRITATION: Causes severe skin burns.

SERIOUS EYE DAMAGE/IRRITATION: Causes serious eye damage.

RESPIRATORY OR SKIN SENSITISATION: May cause sensitization by inhalation and skin contact.

GERM CELL MUTAGENICITY: No data available

CARCINOGENICITY

Chemical Name	IARC Status
1h-imidazole, 5-methyl-	2B

REPRODUCTIVE TOXICITY: Suspected of damaging fertility or the unborn child.

STOT-SINGLE EXPOSURE: No data available

STOT-REPEATED EXPOSURE: Causes damage to organs through prolonged or repeated exposure.

ASPIRATION HAZARD: No data available

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: This product may cause risk of hazardous effects to the environment.

ECOTOXICOLOGICAL INFORMATION: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Avoid release to the environment.

BIOACCUMULATION/ACCUMULATION: No data available

DISTRIBUTION: No data available

CHEMICAL FATE INFORMATION: No data available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protections and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORT INFORMATION**DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME: Corrosive liquids, n.o.s.

TECHNICAL NAME: (tetraethylenepentamine, diethylenetriamine solution)

PRIMARY HAZARD CLASS/DIVISION: 8

UN/NA NUMBER: UN1760

PACKING GROUP: III

NAERG: 154

TC-1600 PART B**LABEL:** Corrosive**AIR (ICAO/IATA)****SHIPPING NAME:** Corrosive liquid, n.o.s.**TECHNICAL NAME:** (tetraethylenepentamine, diethylenetriamine solution)**UN/NA NUMBER:** UN1760**PRIMARY HAZARD CLASS/DIVISION:** 8**PACKING GROUP:** III**ERG:** 8L**LABEL:** Corrosive**VESSEL (IMO/IMDG)****SHIPPING NAME:** Corrosive liquid, n.o.s.**TECHNICAL NAME:** (tetraethylenepentamine, diethylenetriamine solution)**UN/NA NUMBER:** UN1760**PRIMARY HAZARD CLASS/DIVISION:** 8**PACKING GROUP:** III**EmS:** F-A, S-B**MARINE POLLUTANT #1:** Yes**LABEL:** Corrosive**15. REGULATORY INFORMATION****UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)****311/312 HAZARD CATEGORIES:** Acute Health Hazard, Chronic Health Hazard**313 REPORTABLE INGREDIENTS:** This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:**EPCRA SECTION 313 SUPPLIER NOTIFICATION**

Chemical Name	Wt.%	CAS
4,4'-Isopropylidenediphenol	1 - 5	80-05-7

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT)**CERCLA REGULATORY:** For this/these chemicals, release of more than the Reportable Quantity to the environment in a 24-hour period requires notification to the National Response Center (800-424-8802 or 202-426-2675):
None**TSCA (TOXIC SUBSTANCE CONTROL ACT)****TSCA REGULATORY:** This product does not contain any chemicals subject to TSCA Section 12(b) export notification.**TSCA STATUS:** This product or its components are listed in or exempt from the TSCA inventory requirements.**OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)****29 CFR1910.119--PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS:** None of the chemicals in this product are considered highly hazardous by OSHA.**CALIFORNIA PROPOSITION 65:** This product contains chemical(s) which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Chemical Name	Wt.%	Listed
4,4'-Isopropylidenediphenol	1 - 5	Female Reproductive
1h-imidazole, 5-methyl-	0.1 - 1	Cancer

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OSHA HAZARD COMM. RULE: The contents of the SDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM): This product has been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

DOMESTIC SUBSTANCE LIST (INVENTORY): All components in this product are listed in or exempted from the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL).

GENERAL COMMENTS: No data available

16. OTHER INFORMATION

REASON FOR ISSUE: Revision

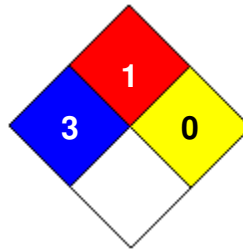
Date Revised: 05/18/2017

REVISION SUMMARY: This SDS replaces the 03/19/2014 SDS.

HMIS RATING

HEALTH	*	3
FLAMMABILITY		1
PHYSICAL HAZARD		0
PERSONAL PROTECTION	X	

NFPA CODES



HMIS RATINGS NOTES: Personal Protection: See Section 8

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