Material Safety Data Sheet

TC-1600 PART A

Date of Preparation: 08/19/2003 Revision: 08/19/2003

Section 1 - Chemical Product and Company Identification

Product Name: TC-1600 PART A
Product Class: Epoxy Resin
Chemical Type: Bisphenol A Diglycidyl ether resin
Manufacturer: BJB Enterprises, Inc., 14791 Franklin Avenue, Tustin, CA 92780, Phone (714) 734-8450, Fax (714) 734-8929, (M-Th: 8-4:30, F: 7:30-4), Emergency Phone: Chemtrec (800) 424-9300 or (703) 527-3887

Section 2 - Composition / Information on Ingredients

Ingredient Name	CASRN
1. Bisphenol A Diglycidyl ether epoxy resin	25068-38-6
2. n-Butyl Glycidyl ether	2426-08-6

Trace Impurities: N/A

	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
Ingredient	**TWA**	**STEL**	**TWA**	**STEL**	**TWA**	**STEL**	**IDLH**
#1	NE	NE	NE	NE	NE	NE	NE
#2	NE	NE	25 ppm	NE	NE	NE	NE

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Appearance: Viscous amber liquid; Odor: Nearly odorless; Avoid skin contact. Avoid breathing vapors. May cause eye and skin irritation. Harmful if inhaled. Use in well-ventilated areas. Burning material will generate trace amounts of toxic fumes/gases.

HMIS
H 2
F 2
R 0
PPE†
†Sec. 8

Potential Health Effects

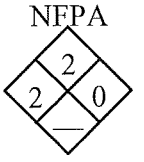
Primary Entry Routes: Eye and skin contact; inhalation of vapors, accidental ingestion.
Inhalation/Ingestion: Not likely. May cause shortness of breath, irritation to sinuses. Possible allergic response/May cause gastric irritation.
Eye: May cause mild irritation.
Skin: May cause moderate irritation and possible allergic sensitivity with repeated contact.
Medical Conditions Aggravated by Long-Term Exposure: Prior sensitization to epoxide containing products.

Section 4 - First Aid Measures

Inhalation: Not likely. Remove to fresh air environment.
Ingestion: If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. Never give anything by mouth to an unconscious person.
Eye Contact: Flush eyes with clean, lukewarm water for 15 minutes. Obtain medical attention if irritation develops.
Skin Contact: Remove contaminated clothing and wash affected areas well with soap and water. Launder contaminated clothing before use.
Note to Physicians: Treat any ill effects symptomatically.

Section 5 - Fire-Fighting Measures

Flash Point/Method: 173°F (78°C) TCC
Extinguishing Media: Carbon dioxide, dry chemical, foam or water spray.
Unusual Fire or Explosion Hazards: Decomposition and combustion products may be hazardous.
Fire-Fighting Instructions: Cool fire exposed containers with water spray. Remove containers from 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.



Section 6 - Accidental Release Measures

Spill /Leak Procedures: Provide adequate ventilation and wear personal protective equipment. Evacuate personnel as a precaution. Prevent product spill from entering sewers, streams or drinking water supplies. Collect liquid or soak up with inert filler or an absorbent, such as dry earth, sand or oil absorbent (sweeping) compound. Collect material into suitable containers for disposal. Wash area with dilute ammonia solution.

Containment: For large spills, dike ahead of liquid spill for later neutralization, absorption, clean up and disposal.

Section 7 - Handling and Storage

Handling Precautions: Avoid contact with eyes, skin and clothing. Avoid breathing vapor over open container.

Storage Requirements: Store in a cool, dry place away from excessive heat in original or similar waterproof containers. Avoid unnecessary contact. Protect from freezing. Containers should be tightly sealed to prevent contamination with foreign materials.

Shelf life: 12 months from date of shipment under manufacturers recommended storage conditions.

Section 8 - Exposure Controls / Personal Protection

Eye Protection Requirements: Safety goggles or glasses are recommended. Plastic face shield should be worn for complete face protection.

Skin Protection Requirements: Impermeable gloves should be worn. Employees should wash their hands and face before eating, drinking or using tobacco products.

Ventilation/Respiratory Requirements: Exhaust ventilation recommended. An organic vapor cartridge or fresh air supplied respirator (NIOSH certified) 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).

Additional Protective Measures: Safety showers and eye wash stations should be easily accessible to the work area. Training is important. Follow all label precautions.

Section 9 - Physical and Chemical Properties

Physical State: Viscous liquid
Appearance and Odor: Amber/Nearly odorless
Vapor Pressure: Not Determined
Specific Gravity (H_2O=1): 1.15
pH: N/A

Water Solubility: Insoluble
Boiling Point: Not determined
% Volatile: Negligible
V.O.C. (ref EPA meth 24): None

Section 10 - Stability and Reactivity

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Hazardous Polymerization: Will not occur.

Chemical Incompatibilities/Conditions to Avoid: Strong oxidizing agents, acids, amines and excessive heat.

Hazardous Decomposition: May be hazardous.

Section 11- Toxicological Information

No Toxicological Information Available

Section 12 - Ecological Information

No Ecological Information Available

Section 13 - Disposal Considerations

Waste Disposal Method: Incinerate or landfill burial unless prohibited. Dispose of in compliance with federal, state or local environmental control regulations. Not a hazardous waste under RCRA (40CFR261).

Section 14 - Transport Information

DOT	IATA/ICAO	IMO/IMDG
Not regulated	Not regulated	Not regulated

Section 15 - Regulatory Information

U.S. Federal Regulations:
OSHA:
This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard.

SARA TITLE III:
Sections 311/312 Hazard Classification:
None

Section 313: This product contains the following substances subject to the reporting requirements of EPCRA, Section 313 and 40 CFR Part 372:
None

TSCA: This product or its components are listed in or exempt from the TSCA inventory requirements.
This product contains the following substances subject to export notification under Section 12 (b) of TSCA:
None

Section 16 - Other Information

Reason for Issue: Revised to ANSI format
Prepared By: S.F. Marks
Approval Date: 08/19/2003
Supersedes Date: 09/26/1995

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of BJB Enterprises, Inc. The data on this sheet relates only to the specific material designated herein. BJB Enterprises, Inc. assumes no legal responsibility for use or reliance upon these data.

Material Safety Data Sheet

TC-1600 PART B

Date of Preparation: 08/19/2003 Revision: 08/19/2003

Section 1 - Chemical Product and Company Identification

Product Name: TC-1600 PART B
Product Class: Epoxy hardener
Chemical Type: Aliphatic, cycloaliphatic amine mixture
Manufacturer: BJB Enterprises, Inc., 14791 Franklin Avenue, Tustin, CA 92780, Phone (714) 734-8450, Fax (714) 734-8929, (M-Th: 8-4:30, F: 7:30-4), Emergency Phone: Chemtrec (800) 424-9300 or (703) 527-3887

Section 2 - Composition / Information on Ingredients

Ingredient Name	CASRN	% wt
1. Tetraethylenepentamine (TEPA)	112-57-2	<50
2. Diethylenetriamine (DETA)	111-40-0	<10

Trace Impurities: N/A

	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
Ingredient	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
#1	NE	NE	NE	NE	NE	NE	NE
#2	1.000 ppm	NE	1.000 ppm	NE	NE	NE	NE

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Appearance: Liquid; Odor: Ammoniacal; Avoid skin contact. Avoid breathing vapors. May cause eye and skin irritation. Harmful if inhaled. Use in well-ventilated areas. Decomposition and combustion products are toxic.

HMIS	
H	3
F	1
R	0
PPE†	

†Sec. 8

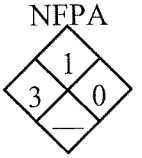
Potential Health Effects

Primary Entry Routes: Eye and skin contact; inhalation of vapors, accidental ingestion.
Inhalation/Ingestion: Excessive vapors caused by heat or spray mist can cause respiratory problems.
Eye: May cause irritation or possible burns.
Skin: May cause irritation and possible allergic sensitivity with repeated contact.
Medical Conditions Aggravated by Long-Term Exposure: Acute asthma or prior sensitization to amine fumes.

Section 4 - First Aid Measures

Inhalation: Not likely. Remove to fresh air environment.
Ingestion: If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. Never give anything by mouth to an unconscious person.
Eye Contact: Flush eyes with clean, lukewarm water for 15 minutes. Obtain medical attention if irritation develops.
Skin Contact: Remove contaminated clothing and wash affected areas well with soap and water. Launder contaminated clothing before use.
Note to Physicians: Treat any ill effects symptomatically.

Section 5 - Fire-Fighting Measures



Flash Point/Method: 225°F (107°C) Tag closed cup
Extinguishing Media: Carbon dioxide, dry chemical, foam or water spray.
Hazardous Classification: Class 8, PG III
Unusual Fire or Explosion Hazards: Decomposition and combustion products are toxic.
Fire-Fighting Instructions: Cool fire exposed containers with water spray. Remove containers from fire area if possible. Do not release runoff from fire control methods to sewers or waterways.
Fire-Fighting Equipment: Firefighters must wear positive pressure self-contained breathing apparatus (SCBA) for fighting large fires. Consider the use of unmanned hose holders or monitor nozzles when fighting large fires.

Section 6 - Accidental Release Measures

Spill /Leak Procedures: Provide adequate ventilation and wear personal protective equipment. Evacuate personnel as a precaution. Prevent product spill from entering sewers, streams, or drinking water supplies. Collect liquid or soak up with inert filler or an absorbent such as dry earth, sand or oil absorbent (sweeping) compound. Collect liquid into suitable containers for disposal. Wash area with dilute ammonia solution.

Containment: For large spills, dike ahead of liquid spill for later neutralization, absorption, clean up, and disposal.

Section 7 - Handling and Storage

Handling Precautions: Corrosive; causes eye and skin burns. Avoid contact with eyes, skin and clothing. Avoid breathing vapor directly over open container.

Storage Requirements: Store in a cool, dry place away from excessive heat in original or similar waterproof containers. Avoid unnecessary contact. Protect from freezing. Containers should be tightly sealed to prevent contamination with foreign materials.

Shelf life: 12 months from date of shipment under manufacturers recommended storage conditions.

Section 8 - Exposure Controls / Personal Protection

Eye Protection Requirements: Safety goggles or glasses are recommended. Plastic face shield should be worn for complete face protection.

Skin Protection Requirements: Impermeable gloves should be worn. Employees should wash their hands and face before eating, drinking, or using tobacco products.

Ventilation/Respiratory Requirements: Exhaust ventilation recommended. An organic vapor cartridge or fresh air supplied respirator 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).

Additional Protective Measures: Safety showers and eye wash stations should be easily accessible to the work area. Working training is important. Follow all label precautions.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Odor: Ammoniacal
Vapor Pressure: Nil at 1 ATM
Specific Gravity (H_2O=1): 0.98
pH: N/A

Water Solubility: Moderate
Boiling Point: >400°F (204°C)
% Volatile: <1
V.O.C. (ref EPA meth 24): <10 gm/liter

Section 10 - Stability and Reactivity

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities/Conditions to Avoid: Strong oxidizers and acids.

Hazardous Decomposition: Decomposition and combustion products are toxic.

Section 11- Toxicological Information

No Toxicological Information Available

Section 12 - Ecological Information

No Ecological Information Available

Section 13 - Disposal Considerations

Waste Disposal Method: Controlled incineration or landfill burial unless prohibited. Dispose of in compliance with federal, state, or local environmental control regulations.

Section 14 - Transport Information

DOT Shipping Name: Corrosive liquid, n.o.s.
Technical Name: (tetraethylenepentamine solution)
Hazard Class: Class 8
ID No.: UN 1760
Packing Group: III
Label: Corrosive

DOT (USA): Regulated
Class 8, PG III
IATA/ICAO: Regulated
Class 8, PG III
IMO/IMDG: Regulated
Class 8, PG III

Section 15 - Regulatory Information

U.S. Federal Regulations:
OSHA:
This document has been prepared in accordance with the MSDS requirements of the OSHA Hazard Communication Standard.

SARA TITLE III:
Sections 311/312 Hazard Classification:
None

Section 313: This product contains the following substances subject to the reporting requirements of EPCRA, Section 313 and 40 CFR Part 372:
None

TSCA: This product or its components are listed in or exempt from the TSCA inventory requirements.
This product contains the following substances subject to export notification under Section 12 (b) of TSCA:
None

Section 16 - Other Information

Reason for Issue: Revised Section 15
Prepared By: S.F. Marks
Approval Date: 08/19/2003
Supersedes Date: 04/09/1999

Disclaimer: This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of BJB Enterprises, Inc. The data on this sheet relates only to the specific material designated herein. BJB Enterprises, Inc. assumes no legal responsibility for use or reliance upon these data.