

MATERIAL SAFETY DATA SHEET

Prepared by: Technical Barrier Systems

Revision Date: January 7, 2011

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). Where a proprietary ingredient is shown, the identity may be made available as provided in this standard.

All components of this product are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

1. PRODUCT NAME: DUALOX RESIN

Chemical Family: Epoxy resin and diluents.

2. HAZARDOUS INGREDIENTS:	CASNO	TLV	EXPOSURE LIMITS*		
			STEL	PEL	CONTENT
Epoxy Resin	25068-38-6	None	None	None	20-30%
Benzyl Alcohol	100-51-6	None	None	None	< 5%

*) Refer to Section 7 for available LD/LC(50) Health Hazard Data.

3. PHYSICAL DATA:

Boiling Point (°C):	> 100	Water/Oil Distribution	
Percent Volatile:	Nil	Coefficient:	N/Av
Freezing Point (°C)	N/Av	Solubility in Water:	None
Vapor Pressure mmHg @20(°C):	N/Av	Gravity:	1.3
Vapor Density:	> Air	pH:	N/Av
Odor Threshold:	N/Av	Evaporation Rate:	N/Av
VOC	Zero		
Appearance:	Amber Liquid	Odor:	Mild
N/Av = Not Available	N/Av = Not Available	ca. = Approximate	

4. FIRE AND EXPLOSION HAZARD DATA: HMIS Hazard Rating No. 0 (Minimal)

Flash Point: 249°C (480°F) Method: Pensky Martin C.C.

Auto-Ignition Temp.: Not Available

Limited of Flammability: LEL: Not Available UEL: Not Available

Extinguishing Media: Carbon dioxide, foam, dry chemical & water fog.

Special Fire & Unusual Hazards: At higher temperature vapors can cause pressure build up in sealed containers. Use water to cool containers exposed to fire. Self-contained respirator equipment and full protective clothing required when smoke or fumes are generated. Electrical grounding is not recommended.

DUALOX RESIN

8. FIRST AID:

Inhalation: Remove victim from exposure. If difficulty with breathing, administer oxygen. If breathing has stopped administer artificial respiration, preferably mouth-to-mouth. Seek medical attention.

Eyes: Flush eyes with water, lifting upper and lower lids occasionally for 15 minutes. Seek medical attention.

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. If irritation persists seek medical attention. Wash clothing before reuse.

Ingestion: Do NOT give liquid if victim is unconscious or very drowsy, otherwise, give no more than two glasses of water or milk and induce vomiting by 2 tablespoons Syrup of Ipecac or by touching finger to back of victim's throat. Keep victim's head below hips while vomiting. Seek medical attention.

9. SPECIAL PROTECTION INFORMATION:

Ventilation: Ventilation is recommended. Air movement must be designed to insure turnover at all locations in work area to avoid build up of heavy vapors.

Personal Protection Equipment: NOT wear contact lenses when working with this material. Use chemical goggles/safety glasses with side shields and Rubber/Latex gloves. Selection of specific items such as boots and apron will depend on operation. Wear respirator protection whenever airborne concentrations exceed TLV ceilings or TWA, use NIOSH/OSHA approved respirators equipped with an organic vapor cartridge for listed hazard.

Confined spaces, rooms, or tanks are areas where concern for TLV's is especially important. Reference OSHA Regulation CFR 29 1910.134 for recommended respiratory protection.

10. ADDITIONAL INFORMATION:

Average Shelf Life: Refer to Product Data Sheet.

Special Instructions: Store in cool, dry place.

DUALOX RESIN

11. REGULATORY INFORMATION:

Title III Section 302: No reportable materials.

Title III Section 311/312: Health hazard: Immediate
Physical hazard: None

Title III Section 313: No reportable materials.

State: California No reportable materials.

WHMIS Classification: Class D, Div 2, Sub B

Canadian Domestic Substance List: All chemicals are listed.

12. TRANSPORTATION

National Motor Freight Classification (NMFC): 46030 Sub: - Class: 55

Description: RESIN COMPOUNDS

Emergency Response Guide Page No.: NOT APPLICABLE

DOT Reportable Quantity: NOT APPLICABLE

DOT

Shipping Name: NOT REGULATED - USE NMFC DESCRIPTION
UNNO: N/AP Class: N/AP Package Group: N/AP
Contains: N/AP
Label: NONE Sub-Label: NONE

INTERNATIONAL

Shipping Name: NOT REGULATED - USE NMFC DESCRIPTION
UNNO: N/AP TDGDC: N/AP Package Group: N/AP
Contains: N/AP
Label: NONE Sub-Label: NONE

Marine Pollutant: NL

(NL = Not Listed; P = Moderate; PP = Severe; ND = Not Determined)

The information herein is given in good faith. No warranty, expressed or implied, is given regarding the accuracy of these data or the results obtained from the use thereof. Consult Technical Barrier Systems Inc. for further information.

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Revision Date: January 7, 2011

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All components of this product are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

1. PRODUCT NAME: DUALOX HARDENER

Chemical Family: Polyamide/amine mixture.

2. HAZARDOUS INGREDIENTS:	CASNO	EXPOSURE LIMITS*			CONTENT
		TLV	STEL	PEL	
Polyamide Resin	68410-23-1	None	None	None	20-30%
Triethylenetetramine (TETA)	112-24-3	None	None	None	< 5%
Benzyl Alcohol	100-51-6	None	None	None	< 5%
N-Dimethylaminoethanol (DMAE)	108-01-0		5ppm	25ppm	5ppm < 5%

*Refer to Section 7 for available LD/LC(50) Health Hazard Data.

3. PHYSICAL DATA:

Boiling Point (°C):	(TETA) 277	Water/Oil Distribution
Percent Volatile:	Nil	Coefficient: N/Av
Freezing Point (°C)	N/Av	Solubility in Water: None
Vapor Pressure mmHg @20(°C):	(TETA) .01	Gravity: 1.1
Vapor Density:	> Air	pH: Alkaline
Odor Threshold:	N/Av	Evaporation Rate: N/Av
Appearance:	Whitish Liquid	Odor: Ammonical
VOC	Zero	
N/Av = Not Available	N/Av = Not Available	ca. = Approximate

4. FIRE AND EXPLOSION HAZARD DATA: HMIS Hazard Rating No. 1 (Slight)

Flash Point: 118°C (245°F) Method: Tag C.C.

Auto-Ignition Temp.: Not Available

Limited of Flammability: LEL: Not Available UEL: Not Available

Extinguishing Media: Carbon dioxide, foam, dry chemical & water fog.

DUALOX HARDENER

Special Fire & Unusual Hazards: At higher temperature vapors can cause pressure build up in sealed containers. Use water to cool containers exposed to fire. Self-contained respirator equipment and full protective clothing required when smoke or fumes are generated. Electrical grounding is not recommended.

5. REACTIVITY DATA: HMIS Hazard Rating No. 0 (Minimal)

Stability: Stable. Not sensitive to mechanical impact. Excessive heat, fumes and smoke can occur if this product is not mixed and used according to directions.

Incompatibility: Strong oxidizing agents, acids, isocyanates, and organic peroxides may result in violent explosive reaction.

Hazardous Decomposition Products: Oxides of carbon and nitrogen; various unknown hydrocarbons from incomplete combustion.

Hazardous Polymerization: Will not occur when handled per instructions.

6. ENVIRONMENTAL AND DISPOSAL INFORMATION:

Action to Take For Spills/Leaks: Ventilate area, eliminate all sources of ignition. Wear appropriate protective gear, contain leak or spill, salvage, and clean up residue with absorbent material. Wash down area with water or diluted acetic acid.

Waster Disposal Method: Handle disposal of waste material in manner, which complies with local, state, province and federal regulation. Incineration at agency approved waste-disposal facilities.

7. HEALTH HAZARD DATA: HMIS Hazard Rating No. 2 (Moderate)

Primary Route Of Entry: Inhalation, Dermal, Eyes, and Ingestion

Effect of Overexposure:

Inhalation: Due to the low vapor pressure of this product fumes will be minimal below 95°F. At higher temperatures fumes will be irritating.

CL ^o (50) Inhal.	CASRN	100-51-6	2000 ppm/4Hrs. Rat.
		108-01-0	1370 mg/M3 Mouse.

Eyes: Contact can cause severe irritation, redness, tearing and blurred vision.

Skin Contact: Short single exposure may cause moderate irritation to mild burn. Prolonged or repeated exposure may cause severe burns and blisters. This material may result in an allergic type reaction or sensitization response in some individuals.

DUALOX HARDENER

Skin Absorption: May be absorbed through skin to slightly increase overall toxicity.

D(50) Dermal	CASRN	100-51-6	2000mg/kg Rabbit.
		108-01-0	1370mg/kg Rabbit.
		112-24-3	805 mg/kg Rabbit.

7. HEALTH HAZARD DATA

Ingestion: Intake can cause gastrointestinal irritation, nausea, vomiting, diarrhea, headache and drowsiness. Can result in burns of mouth, esophagus and stomach.

LD(50) Oral	CASRN	100-51-6	1230 mg/kg Rat.
		108-01-0	2000 mg/kg Rat.
		112-24-3	2500 mg/kg Rat.

Chronic: Product does contains less than 0.1 percent materials identified as a carcinogen by NTP, IARC, or OSHA. Triethylenetetramine: Laboratory test data reported showing mutation data; experimental teratogen.

8. FIRST AID:

Inhalation: Remove victim from exposure. If difficulty with breathing, administer oxygen. If breathing has stopped administer artificial respiration, preferably mouth-to-mouth. Seek medical attention.

Eyes: Flush eyes with water and or 1% boric acid, lifting upper and lower lids occasionally for 15 minutes. Seek medical attention.

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. If irritation persists seek medical attention. Wash clothing before reuse.

Ingestion: Do NOT induce vomiting; give large quantities of water; get immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquids into lungs. Do not give anything by mouth to an unconscious person.

9. SPECIAL PROTECTION INFORMATION:

Ventilation: Ventilation is recommended. Air movement must be designed to insure turnover at all locations in work area to avoid build up of heavy vapors.

Personal Protection Equipment: Do NOT wear contact lenses when working with this material. Use chemical goggles/safety glasses with side shields and Rubber/Latex gloves. Selection of specific items such as boots and apron will depend on operation. Wear respirator protection whenever airborne concentrations exceed TLV ceilings or TWA, use NIOSH/OSHA approved respirators equipped with an organic vapor cartridge for listed hazard.

Confined spaces, rooms, or tanks are areas where concern for TLV's is especially important. Reference OSHA Regulation CFR 29 1910.134 for recommended respiratory protection.

DUALOX HARDENER

10. ADDITIONAL INFORMATION:

Average Shelf Life: Refer to Product Data Sheet.

Special Instructions: Store in cool, dry place.

11. REGULATORY INFORMATION:

Title III Section 302: No reportable materials.

Title III Section 311/312: Health hazard: Immediate
Delayed
Physical hazard: None

Title III Section 313: No reportable materials.

State: California No reportable materials.

WHMIS Classification: Class D, Div 2, Sub B

12. TRANSPORTATION

National Motor Freight Classification (NMFC): 46030 Sub: - Class: 55

Description: RESIN COMPOUNDS

Emergency Response Guide Page No.: NOT APPLICABLE

DOT Reportable Quantity: 0

Shipping Name: NOT REGULATED - USE NMFC DESCRIPTION

Marine Pollutant: NL
(NL = Not Listed; P = Moderate; PP = Severe; ND = Not Determined)

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