

MATERIAL SAFETY DATA SHEET

Prepared by: Technical Barrier Systems
Revision Date: January 1, 2008

Page 1 of 4
Code: 10531

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: MORRICITE RESIN

Chemical Family: Epoxy resin, diluent, pigment, and filler mixture

2. HAZARDOUS INGREDIENTS: <u>CONTENT</u>	<u>CASNO</u>	<u>EXPOSURE LIMITS*</u>			
		<u>TLV</u>	<u>STEL</u>	<u>PEL</u>	
Epoxy Resin	25068-38-6	None	None	None	55-80%
Butyl Benzyl Phthalate	85-68-7	None	None	None	< 10%
Dibutyl Phthalate	84-74-2	5mg/m ³	None	5mg/m ³	< 10%
Tributyl Phosphate	126-73-8	0.2ppm	None	0.2ppm	< 5%
O-Cresyl Glycidyl Ether	2210-79-9	None	None	None	< 3%
Butyl Glycidyl Ether**	2426-08-6	25ppm	None	25ppm	< 0.2%

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

***) Present only in Rose.

3. PHYSICAL DATA:

Boiling Point (°C):	N/Av	Water/Oil Distribution	
Percent Volatile:	Nil	Coefficient:	N/Av
Freezing Point (°C)	N/Av	Solubility in Water:	None
Vapor Pressure mmHg @37(°C):	N/Av	Specific Gravity:	1.17
Vapor Density:	> Air	pH:	N/Av
Odor Threshold:	N/Av	Evaporation Rate:	N/Av
Appearance:	Pigmented Liquid	Odor:	Mild
N/Av = Not Available	N/Av = Not Available	ca. = Approximate	

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

Flash Point: 182°C (360°F)

Method: Pensky Martin C.C.

Auto-Ignition Temp.: Not Available

Limits 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.

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 acids, strong bases, amines, and mercaptans may initiate hydrocarbons from incomplete combustion.

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, clean up residue with absorbent material.

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

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

PRIMARY ROUTE OF ENTRY: Dermal, Ingestion

Effects of Overexposure

Skin Contact: Prolonged or repeated exposure may cause skin irritation and redness. Skin sensitization or allergic reaction may occur in some individuals.

Inhalation: Vapors can be irritating to nose and mucus membranes.

LC(50) Inhal	CASRN	84-74-2	25	mg/m ³	2Hr Mouse.
		126-73-8	1300	mg/m ³	Mouse.

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

Skin Absorption: Not expected to be absorbed through skin in sufficient quantity to increase overall toxicity.

LD(50) Dermal	CASRN	*2426-08-6	2250	mg/kg	Rabbit
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Ingestion: Intake can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

LD(50) Oral	CASRN	84-74-2	8000 mg/kg Rat.
		85-68-7	2330 mg/kg Rat.
		126-73-8	3000 mg/kg Rat.
		2210-77-9	5140 mg/kg Rat.
		*2426-08-6	2050 mg/kg Rat.
		25068-38-6	11.4 gm/kg Rat.

Chronic: Product does not contain carcinogenic materials as defined by OSHA Hazardous Communications Act 1910.1200.

Dibutyl Phthalate: Has been reported to be mutagenic in vitro.

*Butyl Glycidyl Ether: Has been reported to be mutagenic in vitro.

* Present only in colour Rose.

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: 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.

10. ADDITIONAL INFORMATION:

Average Shelf Life: Refer to Product Data Sheet.

Special Instructions: Store in cool, dry place.

REGULATORY INFORMATION:

Title III Section 302: CASRN 84-74-2 RQ: 10 lbs
85-68-7 100 lbs

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

Title III Section 313: CASRN 84-74-2 < 10%
85-68-7 < 10%

State: California No reportable materials.

WHMIS Classification: Class D, Div 2, Sub B
Class D, Div 2, Sub A

Canadian Domestic Substance List: Contains chemicals not listed.

TRANSPORTATION

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

Description: RESIN COMPOUNDS

Emergency Response Guide Page No.: NOT APPLICABLE

DOT Reportable Quantity: 100 LBS.

Shipping Name: NOT REGULATED - USE NMFC DESCRIPTION

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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MATERIAL SAFETY DATA SHEET

Prepared by: Department of Safety & Environment
Revision Date: August 1, 2006

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Code: 10519

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: MORRICITE HARDENER**

Chemical Family: Polyamine and Glycidyl Ester

2. HAZARDOUS INGREDIENTS: <u>CONTENT</u>	<u>CASNO</u>	<u>EXPOSURE LIMITS*</u>			
		<u>TLV</u>	<u>STEL</u>	<u>PEL</u>	
Triethylenetetramine (TETA)	112-24-3	None	None	None	70-90%
Glycidyl Neodecondate (GN)	26761-45-5	None	None	None	15-25%

*) 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:	ca. 1	Coefficient:	N/Av
Freezing Point (°C)	N/Av	Solubility in Water:	None
Vapor Pressure mmHg @20(°C):	1.01	Specific Gravity:	0.98
Vapor Density:	> Air	pH:	N/Av
Odor Threshold:	N/Av	Evaporation Rate:	N/Av
Appearance:	Straw, clear Liquid	Odor:	Mild ammoniacal
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: Pensky Martin C.C.

Auto-Ignition Temp.: 294°C (561°F)

Limits of Flammability: LEL: 1.0% @ 180°C UEL: 3.6% @ 180°C

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.

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; aldehydes and 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, clean up residue with absorbent material. Wash down area with water and 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, Ingestion

Effects of Overexposure

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

Inhalation: Low degree of volatility, at higher temperatures it is possible for vapors to be generated; vapors are very disagreeable. This material may result in irritation of throat, lungs and allergic type reaction or sensitization response in some individuals.

1 Eyes: Contact can cause severe burn. At higher temperature vapors can cause severe irritation, redness, tearing and blurred vision.

Skin Absorption: (TETA) may be absorbed through skin in moderately toxic amount.

LD(50) Dermal CASRN 112-24-3 805 mg/kg Rabbit

Ingestion: Can result in burns of mouth, esophagus and stomach.

LD(50) Oral CASRN 112-24-3 2500 mg/kg Rat.
26761-45-5 3800 mg/kg Rat.

Chronic: Product does not contain carcinogenic materials as defined by OSHA Hazardous Communications Act 1910.1200.

Materials are not known teratogenic or reproductive health hazards.

TETA repeated overexposure may result in liver and kidney side effects.

TETA has produced cell mutation in vitro laboratory testing.

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 30 minutes. Seek prompt medical attention.

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

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.

10. ADDITIONAL INFORMATION:

Average Shelf Life: Refer to Product Data Sheet.

Special Instructions: Store in cool, dry place.

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.

WHMIS Classification: Class D, Div 2, Sub B
Class E

TRANSPORTATION

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

Description: REGULATED - USE DOT PROPER SHIPPING NAME

Emergency Response Guide Page No.: 60

DOT Reportable Quantity: 0

DOT

Shipping Name: AMINES, LIQUID CORROSIVE N.O.S.
UNNO: UN 2259 Class: 8 Package Group: II
Contains: TRIETHYLENETRAMINE
Label: CORROSIVE Sub-Label: NONE

INTERNATIONAL

Shipping Name: AMINES, LIQUID CORROSIVE N.O.S.
UNNO: UN 2259 TDGCD: 8 Package Group: II
Contains: TRIETHYLENETRAMINE
Label: CORROSIVE 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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