

SAFETY DATA SHEET

1.0 IDENTIFICATION

- 1.1 **GHS product identifier:** ED-2018 Resin
- 1.2 **Other means of identification:** Resin Blend, Bisphenol F reaction products with Epichlorhydrin
- 1.3 **Recommended use of the chemical and restrictions on use:** N/A
- 1.4 **Supplier's details:** CASS POLYMERS OF MICHIGAN, INC.
815 WEST SHEPHERD STREET
CHARLOTTE MI 48813 USA
INFORMATION PHONE NUMBER: (248) 588-2270
- 1.5 **Emergency phone number:** (703) 527-3887(Call Collect)

2.0 HAZARDS IDENTIFICATION

- 2.1 **Classification of the substance or mixture:**
Skin Sensitizer 1, Acute Toxicity – Inhalation 4, Acute Toxicity – Dermal 4, Skin Corrosion/Irritation 2, Eye Damage/Irritation 2B, Carcinogenicity 2
- 2.2 **GHS label elements:**



Signal Word: Warning

Hazard Statement: May cause an allergic skin reaction

Prevention: Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves.

Response: If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Continued and thorough washing in flowing water for at least 15 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash contaminated clothing before reuse.

Disposal: Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations.



Signal Word: Warning

Hazard Statement: Harmful if inhaled

Prevention: Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.

Response: If inhaled: remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.



Signal Word: Warning

Hazard Statement: Harmful in contact with skin

Prevention: Wear protective gloves/protective clothing.

Response: If on skin: wash with plenty of soap and water. Call a poison center or doctor/physician if you feel unwell. Immediate, continued and thorough washing in flowing water for at least 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash contaminated clothing before reuse.

Disposal: Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations.



Signal Word: Warning

Hazard Statement: Causes skin irritation

Prevention: Wash hands thoroughly after handling. Wear protective gloves.

Response: If on skin: wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention. Take off contaminated clothing and wash before reuse.

Signal Word: Warning

Hazard Statement: Causes eye irritation

Prevention: Flush eyes thoroughly after eye contact.

Response: If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical advice/attention.



Signal Word: Warning

Hazard Statement: Suspected of causing cancer. This product contains amounts of Antimony Oxide, a component that has been reported to be a carcinogen based on its IARC, ACGIH, NTP, or EPA Classification.

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response: If exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations.

2.3 Other hazards which do not result in classification: N/A

2.4 Hazards Material Information System (United States):

Health	2*
Flammability	1
Physical Hazard	0

Hazard Codes: *=Chronic Hazard 0=Minimal Hazard, 1=Slight Hazard, 2=Moderate Hazard, 3=Serious Hazard, 4=Severe Hazard

3.0 COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

Chemical Identity	CAS No.	Concentration
Reaction Product of Bisphenol-A and Epichlorhydrin	025068-38-6	40% - 45%
1,4-Butanediol Diglycidyl Ether	2425-79-8	4% - 7%
Titanium Dioxide	13463-67-7	1% - 4%
Melamine Pyrophosphate	15541-60-3	2% - 5%
Siloxanes and Silicones, di-Me, reaction products with Silica	67762-90-7	1% - 3%
Soda Lime Borosilicate Glass	65997-17-3	10% - 15%
Amorphous Silica	7631-86-9	1% - 3%
Graphite	7782-42-5	4% - 6%
Melamine Cyanurate	37640-57-6	10% - 15%
Ammonium Polyphosphate	68333-79-9	10% - 15%
Antimony (III) Oxide	1309-64-4	4% - 6%

4.0 FIRST-AID MEASURES

4.1 Description of necessary first-aid measures:

Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

Inhalation: Move effected persons to fresh air; if effects occur, consult a physician.

Skin Contact: Continued and thorough washing in flowing water for at least 15 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Destroy contaminated leather items.

Eye Contact: Wash immediately and continuously with flowing water for at least 15 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Ingestion: If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by a physician or medical personnel. Do not give anything by mouth to an unconscious person.

Note to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

4.2 Most Important symptoms/effects, acute and delayed:

Potential Acute Health Effects:

Eyes: Contact with eyes causes severe irritation and pain.

Respiratory: Inhalation of heated vapors or mists may cause irritation of the respiratory tract. Maintain adequate local exhaust or wear adequate personal protective equipment. Processing of cured materials may produce irritating dusts. Use of local exhaust and or dust/vapor respirators is recommended.

Skin: Prolonged skin contact may cause irritation, burns or permanent damage.

Potential Chronic Health Effects:

Respiratory: Grinding, sanding, or machining of cured material liberates small quantities of Antimony Oxide,

which presents a chronic health hazard upon prolonged or repeated exposure in concentrations above prescribed limits. Provide appropriate ventilation to maintain exposures below occupational limits. Use of a dust mask or other filtering respirator is recommended where local ventilation is not adequate. See section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION for exposure limits and recommended protective equipment. See section 11-TOXICOLOGICAL INFORMATION for further information.

Skin: Repeated skin contact may cause a persistent irritation or dermatitis. Repeated or prolonged exposure to skin may aggravate existing dermatitis. Overexposure to vapor, dust, or mist may aggravate existing respiratory conditions such as asthma, bronchitis, and inflammatory or fibrotic respiratory disease.

4.3 Indication of immediate medical attention and special treatment needed, if necessary: N/A

5.0 FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Water fog or fine spray. Carbon dioxide. Alcohol resistant foam. Dry chemical fire extinguishers.

5.2 Specific hazards arising from the chemical:

Flash point is Not Determined. May generate toxic or irritating combustion products. Sudden reaction and fire may occur if product is mixed with an oxidizing agent.

5.3 Special protective actions for fire-fighters:

Wear positive-pressure self-contained breathing apparatus and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves.)

6.0 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Wear adequate personal protective equipment; see Section 8, EXPOSURE CONTROLS/PERSONAL PROTECTION.

6.2 Methods and materials for containment and clean up:

Large spills: Contain with dike. Pump into suitable and properly labeled containers.

Small spills: Dilute with water and recover or use non-combustible absorbent material/sand and shovel into appropriate containers.

7.0 HANDLING AND STORAGE

7.1 Precautions for safe handling:

Keep container dry. Do not ingest. Do not breathe gas/fumes/dust/spray/dust. If ingested, seek medical advice immediately and show the container, label or this document. Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities:

Keep away from Oxidizers. Store in a cool, dry, ventilated storage area in closed containers. Storage Temperature and Shelf Life: Store between 10 and 27°C.

8.0 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	CAS No.	Percent	Exposure Limits	Source
Silicon Dioxide	112945-52-5	<1%	5 mg/m ³ TWA respirable dust, 10 mg/m ³ TWA total inhalable dust	ACGIH ACGIH
Graphite	7782-42-5	4% - 6%	4 mg/m ³ TWA respirable dust, 10 mg/m ³ TWA total inhalable dust	OES/EH40 OES/EH40
Amorphous Silica	7631-86-9	<1%	2.4 mg/m ³ TWA respirable dust, 10 mg/m ³ TWA total inhalable dust	OES/EH40 ACGIH
Antimony (III) Oxide*	1309-64-4	5% - 7%	0.5 mg/m ³ TWA respirable dust, 0.5 mg/m ³ 8hr-TWA total inhalable dust	ACGIH OSHA

*Antimony Oxide Warning: This product contains amounts of Antimony Oxide, a component that has been reported to be possibly carcinogenic/mutagenic based on its IARC, ACGIH, NTP, or EPA Classification. Minimize exposure to dusts liberated through machining, sanding or finishing cured product through the use of adequate local exhaust or an approved dust/vapor respirator.

8.2 Appropriate engineering controls:

Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for operations involving machining of dry or cured material.

8.3 Individual protection measures, such as personal protective equipment:

Respiratory Protection: For use of this material in its uncured state, no respiratory protection should be needed with use of adequate local exhaust, however, if handling at elevated temperatures or without sufficient ventilation, use of an approved air-purifying or supplied air respirator is recommended. Use a CE approved air-purifying respirator with cartridge/filter for: Organic vapors, type A (boiling point >65 deg. C).

Special Respiratory Concerns: Take care when grinding, sanding, or machining cured material as these operations may liberate harmful/irritating dust. Provide appropriate ventilation to maintain exposures below occupational limits. Use of a dust mask or other filtering respirator is recommended where local ventilation is not adequate. Dusts liberated during processing of cured material contain Antimony Oxide, which presents a chronic health hazard in concentrations above prescribed exposure limits.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, gloves, boots, apron, or full body suit will depend on operation. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use chemical resistant gloves classified under standard EN 374: Protective gloves against chemicals and microorganisms.

Eye/Face Protection: Eye wash fountain should be located in immediate work area. Use chemical goggles. A full-face shield and vapor respirator is recommended for operations involving spraying or other operations placing this material under pressurized conditions.

9.0 PHYSICAL AND CHEMICAL PROPERTIES

- 9.1 **Appearance (physical state, color, etc.):** Thixotropic Paste, Dark Blue
- 9.2 **Odor:** Epoxy Odor
- 9.3 **Odor threshold:** N/A
- 9.4 **pH:** Not Determined
- 9.5 **Melting point/freezing point:** Not Determined
- 9.6 **Initial boiling point and boiling range:** Not Determined
- 9.7 **Flash Point:** Not Determined
- 9.8 **Evaporation rate:** N/A
- 9.9 **Flammability (solid, gas):** N/A
- 9.10 **Upper/lower flammability or explosive limits:** LFL-not determined; UFL-not determined
- 9.11 **Vapor pressure:** Not Determined
- 9.12 **Vapor Density:** N/A
- 9.13 **Relative density(Specific Gravity):** 0.55 – 0.66
- 9.14 **Solubility(ies):** Liquid Components are Not Readily Soluble in Water
- 9.15 **Partition coefficient; n-octanol/water:** N/A
- 9.16 **Auto-ignition temperature:** >300°C
- 9.17 **Decomposition temperature:** N/A
- 9.18 **Viscosity:** N/A

10.0 STABILITY AND REACTIVITY

- 10.1 **Reactivity:** N/A
- 10.2 **Chemical stability:** Stable under normal handling and storage conditions; see Section 7, Handling and Storage.
- 10.3 **Possibility of hazardous reactions:** N/A
- 10.4 **Conditions to avoid:** N/A
- 10.5 **Incompatible materials:** Sodium or Calcium Hypochlorite. Oxidizing agents. Acids. Reaction with Peroxides may result in violent decomposition possibly creating an explosion.
- 10.6 **Hazardous decomposition products:** N/A

11.0 TOXICOLOGICAL INFORMATION

- 11.1 **Likely routes of exposure:** N/A
- 11.2 **Symptoms related to the physical, chemical and toxicological characteristics:**
 - Ingestion:** This material has a low potential for toxic effects due to ingestion.
 - Skin Contact:** Prolonged or widespread skin contact is not likely to cause toxic effects.
 - Irritation:**
 - Skin:** Skin contact has caused allergic skin reactions in certain sensitized individuals.
 - Eyes:** May cause slight temporary eye irritation with local redness. Mechanical irritation possible due to solid filler materials.
 - Inhalation:** May cause allergic respiratory response upon exposure to heated vapors.
- 11.3 **Delayed and immediate effects and also chronic effects from short and long term exposure:**

Carcinogen: This product contains amounts of Antimony Oxide, a component that has been reported to be a carcinogen based on its IARC, ACGIH, NTP, or EPA Classification. Provide appropriate ventilation to maintain exposures below occupational limits and minimize exposure to dusts liberated through machining, sanding or finishing of cured product through the use of adequate local exhaust or an approved dust/vapor respirator.

Mutagen: This product contains amounts of Antimony Oxide, a component that has been reported to be a possible human mutagen based on its IARC, ACGIH, NTP, or EPA Classification. Provide appropriate ventilation to maintain exposures below occupational limits and minimize exposure to dusts liberated through machining, sanding or finishing cured product through the use of adequate local exhaust or an approved dust/vapor respirator.

Reproductive Hazard: This product contains amounts of Antimony Oxide, a component that has been reported to present a reproductive hazard based on animal tests. Provide appropriate ventilation to maintain exposures below occupational limits and minimize exposure to dusts liberated through machining, sanding or finishing cured product through the use of adequate local exhaust or an approved dust/vapor respirator.

11.4 Numerical measures of toxicity:

This finished product has not been tested to determine individual toxicological/ecological limits. Individual components of this mixture have been independently tested by the raw material manufacturers and any known results have been presented below. The results for the individual components may not be representative of the toxicity of this finished product.

Ingredient Name	CAS No.	%	Test	Result	Route	Species
1,4-Butanediol Diglycidyl Ether	2425-79-8	4% - 7%	LD50 LD50	1,410mg/kg >2,150 mg/kg (no deaths)	Oral Dermal	Rat Rabbit
Antimony (III) Oxide*	1309-64-4	5% - 7%	LD50	>34,600 mg/kg	Oral	Rat

*Antimony Oxide: This product contains a component that has been reported to be carcinogenic/mutagenic based on its IARC, ACGIH, NTP, or EPA Classification. Route(s) of exposure: Respiration of Processing Dusts.

12.0 ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

Chemical Name	CAS No.	%	Test	Concentration	Result	Species
1,4-Butanediol Diglycidyl Ether	2425-79-8	4% - 6%	LC50 LC50	18 mg/L >100m/L	LC50 LC50	Zebrafish Bacteria (unspecified)

Individual components of this mixture have been independently tested by the raw material suppliers and any known results have been presented above. The results for the individual components may not be representative of the ecological toxicity of this finished product. This finished product has not been tested to determine individual toxicological/ecological limits. Great Caution should be taken to prevent release to the environment. See Section 13 for further information.

12.2 Persistence and degradability:

This material contains components that show little or no evidence of biodegradability. Great Caution should be taken to prevent release to the environment. See Section 13 for further information.

12.3 Bioaccumulative potential: N/A

12.4 Mobility in soil: N/A

12.5 Other adverse effects: N/A

13.0 DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations. The generation of waste should be avoided or minimized wherever possible. Untreated material is not suitable for disposal. Waste, even small quantities, should never be poured down drains, sewers or watercourses. Waste must be disposed of in accordance with federal, state and local environmental control regulations. This material, when properly mixed and cured with its resin component at the proper mix ratio, may be safely landfilled.

Contaminated packaging: Empty containers can only be disposed of when the remaining product adhering to the container walls has been removed. Hazard warning labels should be removed from the container walls.

14.0 TRANSPORT INFORMATION

14.1 UN number: Not Regulated

14.2 UN proper shipping name: Liquid Plastic, NOI

14.3 Transport hazard class(es): Not Regulated

14.4 Packing group, if applicable: Not Regulated

14.5 Environmental hazards: N/A

14.6 Transport in bulk: N/A

14.7 Special precautions for user: N/A

15.0 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations:

TSCA: This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq. This product contains a chemical substance that is subject to export notification under Section 12(b) of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.

Toxic Substances Control Act (TSCA) 12(b) Components: Antimony Oxide, 5%-7%

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es): Irritant, Sensitizer

EPA SARA Title III section 302 (40CFR370) Hazard Class: Immediate Health Hazard, Delayed Health Hazard

EPA SARA Title III section 313 (40 CFR 372) Toxic Chemicals above "de minimus" levels: Antimony Oxide, 5%-7%.

CALIFORNIA PROPOSITION 65: SUBSTANCES (component (s) know to the State of California to cause cancer and/or reproductive and subject to warning and discharge requirements under the "Safe Drinking Water and Toxic Enforcement Act of 1986") **NONE**

CANADA REGULATIONS

WHIMS Classification: Class D Division 2B

WHIMS Symbol(s)



DSL: Components of this product have been reported to Environment Canada in accordance with subsection 25 of the Canadian Environmental Protection Act and are included on the Domestic Substances List.

16.0 OTHER INFORMATION

16.1 Date of Preparation: 09/16/2011

To the best of our knowledge, the information contained herein is accurate. Final determination of the suitability of any material is the sole responsibility of the users. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.