

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

PRODUCT NAME: TCC-353 Resin

CHEMICAL NAME: Aliphatic/Bisphenol A Epoxy Resin Blend

MANUFACTURER: CASS POLYMERS OF MICHIGAN, INC.
815 WEST SHEPHERD STREET
CHARLOTTE MI 48813 USA

INFORMATION PHONE: (248) 588-2270

EMERGENCY PHONE: (703) 527-3887(Call Collect)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Materials 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

Material Composition

Component	CAS.NO	EINECS/ELINCS No.	Percent
Reaction Product of Bisphenol-A and Epichlorhydrin	025068-38-6	Polymer	50% - 60%
Polyglycol diepoxide	26142-30-3	Polymer	5% - 10%
C12-C14 Aliphatic Glycidyl Ether	68609-97-2	Not Available	1% - 5%
Amorphous Silica	7631-86-9	231-545-4	<1%
Siloxanes and Silicones, di-Me, reaction products with Silica	67762-90-7	Not Available	1% - 5%
Magnesium Silicate	14807-96-6	238-877-9	20% - 30%

Hazardous Materials are listed if present in concentrations of 1.0% or higher. Materials posing a possible Chronic Health Risk are listed at concentrations of 0.1% or higher. Materials listed in section 2 are not necessarily hazardous. See section 8-Exposure Controls/Personal Protection, and section 11-Toxicological Information for complete hazard/exposure limit information

3. HAZARDS IDENTIFICATION

****Emergency Overview****

Moderate skin irritant. Mild eye irritant. Mild respiratory tract irritant. May cause skin sensitization.

EC Classification(s): Xi-Irritant

EC Risk Phrase(s): R36/38 Irritating to eyes and skin

R43 May cause sensitization with skin contact.

(See Section 15-REGULATORY INFORMATION for complete risk phrases.)

ROUTES OF EXPOSURE

Eye Contact

Skin Contact

Ingestion

EXPOSURE STANDARDS

No standards established for the product. Maintain air contaminant concentrations in the workplace at the lowest feasible levels.

HEALTH HAZARDS

Moderate skin irritant.

Mild eye irritant.

Mild respiratory tract irritant.

May cause skin sensitization.

TARGET ORGANS

Skin

SIGNS AND SYMPTOMS OF EXPOSURE (Acute effects)

Contact with eyes may cause mild irritation and discomfort. Contact with skin causes irritation, redness and discomfort which is transient. Inhalation of mists may cause irritation in the respiratory tract. Inhalation of vapors from heated material may cause irritation in the respiratory tract. Coughing and chest pain may result.

SIGNS AND SYMPTOMS OF EXPOSURE (Possible Longer Term Effects)

Repeated and/or prolonged exposure may cause allergic reaction/sensitization. Repeated and/or prolonged exposures may result in: adverse skin effects (such as rash, irritation or corrosion).

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Skin disorders and Allergies

CARCINOGENS UNDER OSHA, ACGIH, NTP, IARC, OTHER

This product contains no carcinogens in concentrations of 0.1 percent or greater.

4. 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.

5. FIRE FIGHTING PRECAUTIONS**Extinguishing Media**

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

Hazardous Combustion Products

May generate toxic or irritating combustion products. Sudden reaction and fire may occur if product is mixed with an oxidizing agent.

Protection of Firefighters

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

6. ACCIDENTAL RELEASE MEASURES**Personal Precautions**

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

Methods of Cleaning 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. HANDLING AND STORAGE**STORAGE**

Keep away from: oxidizers. Keep in cool, dry, ventilated storage areas and in closed containers.

HANDLING

Avoid contact with skin or eyes. Avoid breathing of vapors. Handle in well-ventilated workspace. When handling, do not eat, drink, or smoke.

OTHER PRECAUTIONS

Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations (e.g. OSHA).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Hazardous Component Control Parameters –**

Component	CAS. No.	EINECS	Percent	Exposure Limits	Source
Amorphous Silica	7631-86-9	231-545-4	<1%	2.4 mg/m ³ TWA respirable dust, 10 mg/m ³ TWA total inhalable dust	OES/EH40 ACGIH

-No Further Data Available-

EYE PROTECTION

Chemical safety glasses. A full-face shield and vapor respirator is recommended for operations involving spraying or other operations placing this material under pressurized conditions.

HAND PROTECTION

Neoprene rubber gloves. Impermeable gloves. Nitrile rubber gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period.

RESPIRATORY PROTECTION

Not required under normal conditions and in a well-ventilated workplace. At elevated temperatures, a cartridge mask National Institute for Occupational Safety and Health (NIOSH) approved for organic vapors may be appropriate

PROTECTIVE CLOTHING

Long sleeved clothing.

ENGINEERING CONTROLS

No specific controls needed. Heated material

WORK AND HYGIENIC PRACTICES

Provide readily accessible eye wash stations and safety showers. Wash at the end of each work shift and before eating, smoking or using the toilet.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as the instructions/specifications provided by the glove supplier.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance :	Viscous Liquid
Color:	Pink
Odor:	Epoxy Odor
Specific gravity :	1.25 – 1.35
Vapor pressure:	Not Determined
Boiling point/range :	Not Determined
Freezing point/range :	Not Determined
Water solubility :	Liquid Components are Not Readily Soluble in Water
pH :	Not Determined
Flash point :	Not Determined
Auto-ignition temp. :	>300 deg.C
Flammability-LFL :	Not Determined
Flammability-UFL :	Not Determined
% volatile:	<1%

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY

Stable

CONDITIONS TO AVOID (if unstable)

Not applicable

INCOMPATIBILITY (Materials to Avoid)

Oxidizing Agents (i.e. perchlorates, nitrates etc.). Sodium or Calcium Hypochlorite. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.

HAZARDOUS DECOMPOSITION PRODUCTS (from burning, heating, or reaction with other materials).

Carbon Monoxide in a fire. Carbon Dioxide in a fire. Irritating and toxic fumes at elevated temperatures.

HAZARDOUS POLYMERIZATION

Will not occur

CONDITIONS TO AVOID (if polymerization may occur)

Not applicable

11. TOXICOLOGICAL INFORMATION

Acute 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
-No Data Available-						

Ingestion

This material should be considered moderately toxic 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.

Chronic Exposure**Carcinogen**

This material contains no known or suspected carcinogens in levels above 0.1%

Mutagen

This material contains no known or suspected mutagens in levels above 0.1%

Reproductive Hazard

This material contains materials known or suspected to cause reproductive hazards in levels above 0.1%.

12. ECOLOGICAL INFORMATION**Persistence/degradability**

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

Ecotoxicity Data:

Chemical Name	CAS No.	%	Test	Concentration	Result	Species
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-No data available-

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. Caution should be taken to prevent release to the environment. See Section 13 for further information.

13. DISPOSAL CONSIDERATIONS**Disposal**

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 only after it has been properly emptied.

14. TRANSPORT INFORMATION**Land/Air/Sea/Rail**

Proper Shipping Name: Liquid Plastic, NOI
 UN Number: Not Regulated
 Hazard Class: Not Regulated
 Packing Group: Not Regulated

15. REGULATORY INFORMATION**US FEDERAL REGULATIONS****TOXIC SUBSTANCES CONTROL ACT (TSCA)-**

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

TOXIC SUBSTANCE CONTROL ACT (TSCA) 12(b) COMPONENT(S)

None

OSHA Hazard Communication Standard (29CFR1910.1200) hazard class(es)

Irritant. Sensitizer.

EPA SARA Title III Section 312 (40CFR370) hazard class

Immediate Health Hazard. Delayed Health Hazard.

EPA SARA Title III Section 313 (40CFR372) toxic chemicals above "de minimis" level are
None

STATE REGULATIONS

PROPOSITION 65 SUBSTANCES (component(s) known to the State of California to cause cancer and/or reproductive toxicity and subject to warning and discharge requirements under the "Safe Drinking Water and Toxic Enforcement Act of 1986")

None

NEW JERSEY TRADE SECRET REGISTRY NUMBER(S)

None

CANADIAN REGULATIONS

DSL

Included on Inventory.

WHMIS HAZARD CLASSIFICATION

Class D Division 2B

WHMIS INGREDIENT DISCLOSURE LIST

None

WHMIS TRADE SECRET REGISTRY NUMBER(S)

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

None

WHMIS SYMBOLS



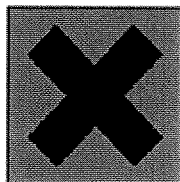
EUROPEAN ECONOMIC COMMUNITY (EEC)

EINECS/ELINCS MASTER INVENTORY

Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.

Hazard symbol(s):

Xi



Irritant

EU Labeling Classification:	Xi-Irritant
Risk Phrases:	R36/38 Irritating to eyes and skin R43 May cause sensitization with skin contact.
Safety Phrases:	S24 Avoid contact with skin. S37 Wear suitable gloves.

16. OTHER INFORMATION

Definitions:

ACGIH: American Conference of Government Industrial Hygienists
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 TLV: Threshold Limit Value
 TWA: Time-Weighted Average
 LD50: Lethal Dose (50%)-The minimum dose required for lethal effects in 50% of a given population of test specimens.
 LC50: Lethal Concentration (50%)- The minimum concentration required for lethal effects in 50% of a given population of test specimens
 NIOSH: National Institute for Occupational Safety and Health
 WHMIS: Workplace Hazardous Material Information System
 DSL: Domestic Substances List

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.