SAFETY DATA SHEET

1.0 IDENTIFICATION

1.1 GHS product identifier: P-14

1.2 Other means of identification: Unsaturated Polyester Resin Blend

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:

Flammable Liquids 3, Skin Corrosion/Irritation 2, Eye Damage/Irritation 2B, Acute Toxicity-Inhalation 4

2.2 GHS label elements:

Signal Word: Warning
Hazard Statement: Flammable liquid and vapor
Prevention: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/eye protection/face protection.
Response: If on skin (or hair): remove/take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: use carbon dioxide, foam, dry chemical or water fog to extinguish fire.
Storage: Store in a well-ventilated place. Keep cool.
Disposal: Dispose of contents/container by 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: 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.

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

2.4 Hazards Material Information System (United States):

Health	**2***
Flammability	**3**
Physical Hazard	**1**

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
Polyester Resin	28472-89-1	15% - 20%
Unsaturated Polyester Resin	Proprietary	5% - 10%
Styrene Monomer	100-42-5	10% - 12%
Sodium Borosilicate Glass	65997-17-3	1% - 5%
Magnesium Silicate	14807-96-6	35% - 40%
Barium Sulfate	7727-43-7	5% - 10%
Titanium Dioxide	13463-67-7	5% - 10%
m-Tolyl Diethanolamine	91-99-6	0.5% - 1%
Methyl Alcohol	67-56-1	0.5% - 1%

4.0 FIRST-AID MEASURES

4.1 Description of necessary first-aid measures:

Eye Contact: Immediately flush eyes with large quantities of clean water for at least 15 minutes. Get immediate medical attention.

Skin Contact: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

Ingestion: DO NOT INDUCE VOMITING. ASPIRATION HAZARD: this material may enter the lungs during vomiting. Immediately give the victim one or two glasses of water or milk to drink. Never give anything by mouth to an unconscious person. GET IMMEDIATE MEDICAL ATTENTION.

Inhalation: Remove victim to fresh air. Keep warm and quiet. If not breathing, give artificial respiration. If breathing is difficult, give oxygen by trained personnel. GET IMMEDIATE MEDICAL ATTENTION.

4.2 Most Important symptoms/effects, acute and delayed:

Acute Exposure:

Inhalation: Harmful if inhaled. Effects from exposure may include headaches, fatigue, nausea, sensation of drunkeness, central nervous system depression and pulmonary edema.

Skin: Harmful if absorbed through skin. Contact causes skin irritation. Prolonged or repeated skin contact can result in defatting and drying of the skin.

Eyes: Harmful to eyes. Direct contact with this material causes eye irritation. Symptoms may include stinging, tearing, redness and swelling.

Ingestion: Harmful if swallowed. Single dose oral toxicity is low. Swallowing small amounts during normal handling is not likely to cause harmful effects; swallowing large amounts may be harmful. Effects from exposure through ingestion may include gastrointestinal disturbances, pain and discomfort. Effects of exposure by ingestion may also include those indicated by the inhalation route. Material is harmful or fatal if liquid is aspirated into the lungs.

Chronic Exposure: Prolonged or repeated exposure may cause damage to the central nervous system and may result in permanent brain damage. Symptoms include: loss of memory, loss of judgment, loss of coordination, effects on hearing and respiratory tract damage. Prolonged or repeated exposure may cause liver and kidney damage.

Carcinogenicity: This material contains Styrene (9% by mass) which is listed by the International Agency for Research (IARC) on Cancer as a group 2B cancer causing agent (possibly carcinogenic to humans).

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:

Use carbon dioxide, foam, dry chemical or water fog to extinguish fire.

5.2 Specific hazards arising from the chemical:

FLAMMABLE LIQUID. Vapors can form an explosive mixture with air. Vapor can travel to a source of ignition (spark or flame) and flash back. This material may polymerize (react) when its container is exposed to heat (as during a fire). This polymerization increases pressure inside a closed container and may result in the violent rupture of the container. Combustion may produce carbon monoxide, carbon dioxide and irritating or toxic vapors and gases. Flash Point: 89° F (32 ° C).

5.3 Special protective actions for fire-fighters:

Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Thoroughly decontaminate all protective equipment after use.

Evacuate all persons from the fire area to an explosion-protected location. Move non-burning material, as feasible, to a safe location as soon as possible. Fire fighters should be protected from potential explosion hazard while

extinguishing the blaze. Containers of this material may build up pressure if exposed to heat (fire). Use water spray to cool fire-exposed containers. DO NOT extinguish a fire resulting from a large flow of this flammable liquid until the flow of liquid is effectively shut off. This precaution will help prevent the accumulation of an explosive vapor-air mixture after the initial fire is extinguished. Use water spray to disperse vapors if a spill or leak has not ignited. See Section 13 for disposal considerations.

6.0 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Remove all sources of ignition (flares, flames including pilot lights, electrical sparks). NO SMOKING. Persons not wearing protective equipment (see Section 8) should be excluded from the area of the spill until clean-up has been completed.

6.2 Methods and materials for containment and clean up:

For Small Spills: Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Use non-sparking (non-metallic) tools to clean up spill.
For Large Spills (drums or larger): Stop spill at source. Prevent spilled material from contaminating soil or entering drains, sewers, streams or other bodies of water. Prevent spilled material from spreading. Immediately notify authorities of any reportable spill as may be required pursuant to regulations. See Section 15 for applicable CERCLA reportable quantities. Scrape or pump spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other waste materials to waste containers for disposal.

7.0 HANDLING AND STORAGE

7.1 Precautions for safe handling:

Avoid inhalation and contact with eyes, skin, and clothing. Wash hands thoroughly after handling and before eating or drinking. Remove and wash contaminated clothing before reuse. Use with adequate ventilation. Ground and bond containers when transferring the material to prevent static electricity sparks which could ignite the vapor. Use spark-proof tools and explosion-proof equipment. Consult your supplier of promoters and catalysts for additional instructions on proper mixing and usage. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed.

7.2 Conditions for safe storage, including any incompatibilities:

Keep away from ignition sources: flames, pilot lights, electrical sparks, and sparking tools. NO SMOKING. Do not store in direct sunlight. Store separate from oxidizing materials, peroxides, and metal salts. Keep container closed when not in use. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 75°F (25°C). Copper or copper containing alloys should be avoided as containers.

8.0 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component	CAS No.	EINECS	Percent	Exposure Limits	Source
Styrene	100-42-5	202-851-5	10% - 12%	100 ppm PEL 20ppm TWA 40 ppm STEL	OSHA ACGIH ACGIH

8.2 Appropriate engineering controls:

Local ventilation may be required during certain operations to maintain concentrations below recommended exposure limits. Use explosion-proof ventilation equipment.

8.3 Individual protection measures, such as personal protective equipment:

Eye Protection: Wear 1) safety glasses with side shields and a faceshield or 2) goggles and a faceshield. Facilities storing or utilizing this material should be equipped with an eyewash station and safety shower.
Skin Protection: Wear chemical resistant gloves such as polyvinyl alcohol or Viton®. If splashing is likely, wear impervious clothing and boots to prevent repeated or prolonged skin contact. Consult your supplier of personal protective equipment for additional instructions on proper usage. 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.
Respiratory Protection: A NIOSH/MSHA approved air purifying respirator with organic vapor cartridge or canister may be necessary under certain circumstances where airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be

followed whenever workplace conditions warrant a respirator's use. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if 1) there is any potential for an uncontrolled release, 2) exposure levels are not known, or 3) during other circumstances where air purifying respirators may not provide adequate protection.

9.0 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance (physical state, color, etc.): Thixotropic Paste, White and Grey

9.2 Odor: Pungent 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: 89° F (32 ° C)

9.8 Evaporation rate: N/A

9.9 Flammability (solid, gas): N/A

9.10 Upper/lower flammability or explosive limits: LFL-1.1 % in air Styrene; UFL-7.0 % in air Styrene

9.11 Vapor pressure: 6.12 (mm Hg) Styrene

9.12 Vapor density: N/A

9.13 Relative density (Specific gravity): 1.53-1.56

9.14 Solubility(ies): Components are Not Readily Soluble in Water

9.15 Partition coefficient; n-octanol/water: N/A

9.16 Auto-ignition temperature: 914° F (490° C)

9.17 Decomposition temperature: N/A

9.18 Viscosity: N/A

9.19 Volatile Organic Compounds: 12% by mass (186 g/liter)

10.0 STABILITY AND REACTIVITY

10.1 Reactivity: N/A

10.2 Chemical stability: Stable at normal temperatures and storage conditions.

10.3 Possibility of hazardous reactions: Product will undergo hazardous polymerization at temperatures above 150 F (65 C). Hazardous polymerization will occur if contaminated with peroxides, metal salts and polymerization catalysts.

10.4 Conditions to avoid: N/A

10.5 Incompatible materials: Avoid contact with strong acids, oxidizing agents (peroxides), metal salts and polymerization catalysts.

10.6 Hazardous decomposition products: Thermal decomposition may produce various hydrocarbons and irritating, acrid vapors.

11.0 TOXICOLOGICAL INFORMATION

11.1 Likely routes of exposure: Inhalation, skin and eye contact.

11.2 Symptoms related to the physical, chemical and toxicological characteristics:

Acute Eye Toxicity: Studies indicate that exposures to concentrations of styrene above 200 ppm cause irritation of the eyes. Styrene causes transient moderate eye irritation without corneal involvement.

Acute Inhalation Toxicity: Studies indicate that exposures to concentrations of styrene above 200 ppm cause irritation of the upper respiratory tract.

11.3 Delayed and immediate effects and also chronic effects from short and long term exposure:

Subchronic: Overexposure to styrene has been suggested as a cause of the following effects in laboratory animals and may aggravate preexisting disorders of the following organs in humans; mild, reversible kidney effects, effects on hearing, respiratory tract damage, testis damage and liver damage.

Chronic/Carcinogenicity: The International Agency for Research on Cancer (IARC) has classified styrene in Group 2B, possibly carcinogenic to humans. IARC concluded that evidence of carcinogenicity from human health studies, was inadequate and based the classification on animal and other relevant data. IARC considered the combined results of these cancer studies to provide "limited evidence" of carcinogenicity. The relevance of these findings is uncertain since data from other long-term animal studies and from epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic.

Teratology: Styrene did not cause birth defects in orally-dosed rats, mice, rabbits and hamsters exposed by inhalation. Styrene given by inhalation for six hours a day during organ development has been shown to be toxic to

fetal mice at 250 ppm and to fetal hamsters at 1000 ppm. Information from human experience and the results of animal studies suggest no significant risk of birth defects or reproductive toxicity of styrene to humans.
Mutagenicity: Styrene has given mixed positive and negative results in a number of mutagenicity tests. It was not mutagenic in the Ames test without metabolic activation but gave negative and positive mutagenic results with metabolic activation. It has also given negative mutagenic results in the Chinese Hamster Ovary Test, and the Forward Gene Mutation Test and positive results in the Sister Chromatid Exchange and the Chromosomal Aberration assay.

11.4 Numerical measures of toxicity:

Ingredient Name	CAS No.	%	Test	Result	Route	Species
m-Tolyldiethanolamine	91-99-6	0.5% - 1%	LD50	0.8 – 3.1 g/kg	Oral	Rat
Styrene	100-42-5	10% - 12%	LD50 LD50 LD50	24 g/m3, 4 hrs. 5g/kg 5g/kg	Inhalation Oral Dermal	Rat Rat Rabbit

12.0 ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

Chemical Name	CAS No.	%	Test	Concentration	Result	Species
Styrene	100-42-5	10% - 12%	LC50	23 mg/L	48 hrs.	Daphnia magna

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 water courses. Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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: UN-1866

14.2 UN proper shipping name: Resin Solution

14.3 Transport hazard class(es): 3

14.4 Packing group, if applicable: III

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:

Occupational Safety and Health Act (OSHA): This material is classified as a hazardous chemical under the criteria of the US Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR 1910.1200.
SARA Title III: Section 304 - CERCLA: Styrene (CAS# 100-42-5): Reportable Quantity = 1,000 lb.
SARA Title III: Section 311/312 - Hazard Communication Standard (HCS): This material is classified as an IMMEDIATE HEALTH HAZARD, DELAYED HEALTH HAZARD, FLAMMABILITY HAZARD, and REACTIVITY HAZARD under the US Superfund Amendment and Reauthorization Act (Section 311/312).

SARA Title III: Section 313 Toxic Chemical List (TCL): Styrene (100-42-5)
TSCA Section 8(b) - Inventory Status: All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.
TSCA Section 12(b) - Export Notification: This material does not contain any components that are subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Notification requirements.

California Proposition 65: WARNING: This product does contain chemicals 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").
Styrene Oxide

CANADA REGULATIONS

Canadian Inventory Status: All components of this material are listed on the Canadian Domestic Substances List (DSL).
Canadian WHMIS: This material is classified by the Canadian Workplace Hazardous Material Information System as: B2 (flammable liquid) D2A (materials causing other toxic effects, very toxic material) D2B (materials causing other toxic effects, toxic material) F (dangerously reactive material)
Additional Canadian Regulatory Information: The following chemicals are listed on the WHMIS Ingredient Disclosure List: Styrene Monomer (CAS# 100-42-5)

16.0 OTHER INFORMATION

16.1 Date of Preparation: 08/05/2011

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.