



## SAFETY DATA SHEET

### SECTION 1 – CHEMICAL IDENTIFICATION

Trade Name:	MAESO	Date of Issue:	August 22, 2011
Synonym:	soybean oil, epoxidized, acrylated, maleated	Revised Date:	October 15, 2012
Formula:			
Chemical Family:	Functionalized Soybean Oil		
Chemical Use:	Crosslinking Agent		
Telephone Number:	Information		(281) 474-3271
<b>Emergency Number:</b>	<b>Chemtrec</b>		<b>(800) 424-9300</b> <b>(703) 527-3887 International</b>

#### HMIS Hazard Rating

Health:	2	4 = Extreme
Fire:	2	3 = High
Reactivity:	1	2 = Moderate
PPE rating to be supplied by user depending on use conditions.		1 = Slight 0 = Least

### SECTION 2 – HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** This product is a clear straw colored liquid with a mild odor. **Health Hazard:** This product may cause irritation to skin and respiratory system. Eye contact may cause severe irritation and possible corneal injury. Ingestion may cause irritation of the mouth, throat and gastrointestinal tract. **Flammability Hazards:** This product is Non-Flammable. **Reactivity Hazards:** No known hazards. **Environmental Hazards:** Environmental effects of this product are not known. **Emergency Considerations:** Emergency responders must wear the proper personal protective equipment (and have appropriate fire suppression equipment) suitable for the situation to which they are responding.

US DOT SYMBOLS



CANADA (WHMIS) SYMBOLS



B2 – Flammable Liquid D2A – Very Toxic

EUROPEAN and (GHS)

Hazard  
SymbolSignal Word: **Warning!**

#### EU LABELING AND CLASSIFICATION:

**Classification of the substance or mixture according to Regulation (EC) No1272/2008**

Classification is based on Styrene monomer, MAESO classification has not been established

**Classification based on Index # 601-026-00-0**

Flam. Liq. 3  
Acute Tox. 4 \*  
Eye Irrit. 2  
Skin Irrit. 2

**Hazard Statement(s):**

H226 - Flammable liquid and vapor.  
H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H332- Harmful if inhaled

**Precautionary Statement(s):**

P261: Avoid breathing dust/vapors  
P271: Use only in well ventilated area.  
P281: Use personal protective equipment as required. P314: Get medical advice/attention if you feel unwell

**Classification according to Directives 67/548/EEC and 1999/45/EC**

R10  
Xn; R20  
Xi; R36/38

**Hazard Classification:**

**Symbols:**



**[Xn] Harmful**



**[Xi] Irritant**

Risk Phrases:

R36/38: Irritating to eyes, and skin  
R10: Flammable  
R20: Harmful by inhalation

Safety Phrases:

S2: Keep out of reach of children  
S23: Do not breathe vapor

**DOT Classification:** Class 3: Flammable liquid.

**WHMIS Classification:**

B2 - Flammable and combustible material - Flammable liquid  
D2A - Poisonous and infectious material - Other effects - Very toxic

**SECTION 3 – COMPOSITION**

Note: N.E. = Not Established N/A = Not Applicable

HAZARDOUS INGREDIENTS:	CAS#	EINECS #	PEL	WT%	HAZARDCLASSIFICATION; RISK PHRASES
Styrene	100-42-5	202-851-5	100 ppm	25-75%	HAZARD CLASSIFICATION:[Xi][Xn] RISK PHRASES:R10, R20, R36/38
MAESO	881692-29-1	NE	NE	25-75 %	NE
None of the trace impurities in this product contribute significantly to the hazards associated with the product. All hazard information pertinent to the product has been provided in this Material Safety Data sheet., per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards					

**SECTION 4 – First Aid Measures**

**EYES:** Immediately flush with water for 15 minutes while holding eye lids apart to ensure proper irrigation. Seek medical attention.

**SKIN CONTACT:** Wash with plenty of water and soap. If irritation develops or persists seek medical attention.

**INHALATION:** No specific treatment recommended as this product is not likely to produce inhalation hazards. If exposed to excessive levels of dust/fumes/vapors get to a fresh air environment and seek medical attention.

**INGESTION:** If swallowed do not induce vomiting. Seek medical attention immediately.

**SECTION 5 – Fire Fighting Measures**

**Extinguishing Media:** Water, foam, dry chemical. Note that CO2 is the preferred method of extinguishing.

**Hazardous Combustion Products:** Irritating fumes and toxic vapors

**Fire Fighting Equipment:** Wear NIOSH approved SCBA and full protective fire fighting clothing.

## **SECTION 6 – Accidental Release Measures**

**Large Spill:** Dike area to contain spill. Take precautions to prevent contamination of ground and surface waters. Collect material using absorbent material. Do not flush into sewers or waterways. If area is porous remove the area such as gravel and dirt and dispose.

## **SECTION 7 – Handling and Storage**

**GENERAL PROCEDURES:** Avoid contact with clothing, skin, and eyes.

**HANDLING:** Do not get in eyes, on skin, or on clothing. Use with adequate ventilation. Wash thoroughly after handling. See Section 8 for proper PPE protection during handling.

**STORAGE:** Store material in a dry, cool location with adequate ventilation.

**COMMENTS:** See Section 16 for additional information about the inhibitor used in this product and how to avoid polymerization of the product.

### **CONDITIONS AND MATERIALS TO AVOID**

High temperatures, localized heat sources (ie, drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing; Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers

## **SECTION 8 – Exposure Controls & Personal Protective Clothing**

**ENGINEERING CONTROLS:** Utilize a closed system process where feasible. Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure. Food, beverages, and tobacco products should not be cart stored, or consumed where this material is in use. Eye wash and safety shower in close proximity to points of potential exposure.

### **PERSONAL PROTECTION**

**Face and Eyes:** Wear Safety glasses with eye shields or goggles. In case of significant splash hazard use face shield over your safety glasses or goggles.

**Gloves:** Use solvent impermeable gloves to avoid contact with skin.

**Respiratory Protection:** Breathing vapors is extremely hazardous. Wear an appropriate organic vapor respirator during use of this product until vapors are exhausted, or unless air monitoring demonstrates that vapor levels are below applicable limits.

## **SECTION 9 – Physical and Chemical Properties**

Boiling Point:	145°C, 293 °F (Styrene)
Melting Point:	N.E.
pH (moist paper):	4-5
Vapor Pressure (mm Hg):	N.E.
Vapor Density (Air = 1):	N.E.
Solubility in H <sub>2</sub> O:	Not soluble in water
Appearance/Odor:	Yellow to amber viscous liquid
Specific Gravity (H <sub>2</sub> O = 1):	1.02 g/cm <sup>3</sup> at 25 °C (77 °F)
Evap. Rate (Butyl Acetate = 1):	N.E.
Flash Point:	36 °C (96.8 °F) ASTM D93
Lower Explosive Limit:	N.E.
Upper Explosive Limit:	N.E.
Autoignition Temperature:	N.E.

## **SECTION 10– Stability and Reactivity**

**HAZARDOUS POLYMERIZATION:** No

**STABILITY:** Stable under normal conditions.

**HAZARDOUS DECOMPOSITION:** Oxides of carbon and nitrogen, hydrocarbon fragments and organic decomposition fragments.

**INCOMPATIBLE MATERIALS:** Polymerization initiators, including peroxides, strong oxidizing agents, copper, copper alloys, carbon steel iron, rust and strong bases.

## **SECTION 11– Toxicological Information**

<b>OSHA</b>	Styrene	PEL 50ppm	STEL 200ppm
<b>ACGIH</b>	Styrene	TLV 20ppm	TWA 100ppm

### **Additional Toxicological Information for Styrene**

**ACUTE ORAL LD50** ~22440-rng/cg(rat)

**CARCINOGENICITY COMMENTS:** Some substances in this class of materials have indicated limited evidence of mutagenicity in animals. Limited studies indicated no evidence of teragenicity in animals. A lifetime painting study with mice indicated no evidence of carcinogenicity

## **STYRENE COMPONENT**

### Carcinogenicity (Capability to Cause Cancer)

Chronic (lifetime) inhalation studies on rats and mice exposed to styrene vapors showed evidence of lung tumors in mice but not in rats. Further research is in progress to determine the relevance of these mouse tumors to humans.

It should be noted, however, that several workplace exposure (epidemiological) studies investigating the incidence of cancer in a large number of workers employed in the styrene, polystyrene and reinforced plastics industries have shown no increased incidence of cancer risk due to workplace exposures to styrene.

### Developmental and Reproductive Toxicity

Laboratory studies investigating human developmental and reproductive toxicity of styrene have indicated that styrene exposures, either as vapor, oral or drinking water, do not result in any specific developmental or reproductive toxicity. Although some minor developmental effects were noted in some studies, these effects were either within the historical range for these effects, or were secondary to maternal toxicity from exposure to relatively high levels of styrene.

Although there have been very few studies investigating human developmental and reproductive toxicity following exposures to styrene, the limited available information supports the observation that there is no evidence of developmental or reproductive toxicity from workplace exposures to styrene.

### Neurological (Nervous System) Effects

Some evidence of hearing loss was observed in rats repeatedly exposed to high concentrations of styrene vapor. Effects on human hearing are not expected from workplace exposures to styrene.

Slight effects on color discrimination have been detected in workers exposed to styrene vapors.

These subtle effects are unlikely to be noticed by those affected.

Other nervous system effects have been noted in humans exposed to styrene. However, these effects have not been consistently or reliably observed at exposure levels below 50 ppm.

### Genetic effects

Some cytogenetic (cell formation) studies on workers exposed to styrene have shown increases in chromosomal (genetic) damage, although these effects do not appear to be related to styrene exposure and are not supported by the data observed in animal studies.

## **SECTION 12– Ecological Information**

Formal scientific studies have not been conducted on this product.

## **SECTION 13– Disposal Information**

**DISPOSAL METHOD:** Remove contaminated materials for disposal at a permitted facility using registered transporters. Incineration is the preferred method of disposal.

**EMPTY CONTAINER:** Empty RCRA container disposal at a permitted facility

**SECTION 14– Transport Information**

DOT SHIPPING NAME: Flammable  
Liquid, N.O.S. TECHNICAL  
NAME: (Styrene)

**PRIMARY HAZARD CLASS/DIVISION: 3**

**UN/NA#: 1993**

Packing Group: III

Reportable Quantity (RQ) under CERCLA : 1000 lbs

Placard:



**CANADA TRANSPORT OF DANGEROUS GOODS**

PROPER SHIPPING NAME: Flammable Liquid, N.O.S.

TECHNICAL NAME: (Styrene)

PRIMARY HAZARD CLASS/DIVISION: 3

UN/NA NUMBER 1993 PACKING GROUP: III PLACARDS: Flammable.



B2 – Flammable Liquid D2A – Very Toxic

**SECTION 15– Regulatory Information**

**UNITED STATES**

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

FIRE: NO PRESSURE GENERATING: NO REACTIVITY:

NO ACUTE: YES CHRONIC: NO 313 REPORTABLE

INGREDIENTS: Styrene.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA STATUS: All ingredients in this mixture are in compliance with TSCA.

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**Canada**

**WHMIS Classification:**

B2 - Flammable and combustible material - Flammable liquid

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**SECTION 16– Other Information**

This material contains an inhibitor at <1%. In order for the inhibitor to be effective, the produce requires the presence of oxygen. DO NOT blanket containers containing this material with oxygen free gases (nitrogen). For additional information pertaining to the exact concentrations and inhibitor levels required to minimize the potential of an unstable condition with the product, contact a company representative for more details.

**PPE Codes (NPCA-HMIS)**

**A** – Glasses

**B** – Glasses, Gloves

**C** – Glasses, Gloves, Apron

**D** – Faceshield, Gloves, Apron

**E** – Glasses, Gloves, Dustmask

**F** – Glasses, Gloves, Apron, Dust Respirator

**G** – Glasses, Gloves, Vapor Respirator

**H** – Goggles, Gloves, Apron, Vapor Respirator

**I** – Glasses, Gloves, Dust/Vapor Respirator

**J** – Goggles, Gloves, Apron, Dust/Vapor Respirator

**K** – Supplied Air, Gloves, Full Protective Suit, Boots

**Disclaimer**

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