

# HUDSON

## MATERIAL SAFETY DATA SHEET

DATE PREPARED: 01/03/2003

MSDS No: HP40-KIT

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT DESCRIPTION:** Polyester Resin, 1 quart container**PRODUCT CODE:** HP10 Resin Component**MANUFACTURER**

Hudson Supply Company

4500 Lee Rd

Cleveland, OH 44128-2959

**Customer Service:** (800) 486-0480**24 HR. EMERGENCY TELEPHONE NUMBERS****CHEMTREC (U.S.):** (800) 424-9300**Emergency Phone:** (800) 424-9300

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS#</u>
Styrene Monomer	33 - 37	100-42-5
Polyester Resin	63 - 67	26098-37-3

**COMPONENTS :****EXPOSURE LIMITS**

<u>Chemical Name</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Supplier</u>
Styrene Monomer	100 ppm	20 ppm	
Polyester Resin			

### 3. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW****IMMEDIATE CONCERNS:** Pink, clear liquid, pungent odor.

Flammable liquid and vapor.

Harmful if swallowed-can enter lungs and cause damage.

May undergo hazardous polymerization.

**POTENTIAL HEALTH EFFECTS****EYES:** Harmful to eyes. Direct contact with this material causes eye irritation. symptoms may include stinging, tearing, redness and swelling.**SKIN:** Harmful if absorbed through skin. Contact causes skin irritation. Prolonged or repeated skin contact can result in defatting and drying of the skin.**INGESTION:** Single dose oral toxicity is considered to be low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts

larger than that may cause injury. 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. Styrene is harmful or fatal if liquid is aspirated into the lungs.

**INHALATION:** Harmful if inhaled. Effects from exposure may include headaches, fatigue, nausea, sensation of drunkenness, central nervous system depression and pulmonary edema. Inhalation of vapor or aerosol may cause irritation to the respiratory tract (nose, throat, and lungs).

#### **SUBCHRONIC/CHRONIC TOXICITY**

**CHRONIC:** Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans and may aggravate pre-existing disorders for these organ; central nervous system effects, effects on the hearing and respiratory tract damage.

**CARCINOGENICITY:** This material contains styrene which is listed by the International Agency for Research on Cancer (IARC) as a group 2B cancer-causing agent (possibly carcinogenic to humans).

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#### **4. FIRST AID MEASURES**

**EYES:** Immediately flush eyes with plenty of water for two to three minutes. Remove any contact lenses and continue flushing for 15 minutes. Get medical attention.

**SKIN:** Remove contaminated clothing including shoes and immediately wash affected area with plenty of soap and water. Seek medical attention. Wash contaminated clothing and shoes 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 individual to fresh air. Keep person calm. If breathing is difficult, administer oxygen and get proper medical attention. **GET MEDICAL ATTENTION.**

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#### **5. FIRE FIGHTING MEASURES**

**FLASHPOINT AND METHOD:** 32°C (89°F) SETA Flash Tester CC

**FLAMMABLE LIMITS:** > 1.1 % in air (Styrene) to < 7% in air (Styrene)

**AUTOIGNITION TEMPERATURE:** 490°C (914°F)

**GENERAL HAZARD:** This material's flash point is less than 100 degrees F (38 degrees C) Use water in flooding quantities as a fog to extinguish the fire. **DO NOT USE** a solid stream of water as that may spread the fire. **DO NOT** extinguish a fire resulting from the 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.

**EXTINGUISHING MEDIA:** Water, foam, dry chemical, carbon dioxide.

**EXPLOSION HAZARDS:** 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.

**FIRE FIGHTING PROCEDURES:** 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. Firefighters 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 flow of 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.

**FIRE FIGHTING EQUIPMENT:** Fire fighters should wear goggles and self-contained breathing apparatus to avoid inhalation of smoke or vapors.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Combustion may produce carbon monoxide, carbon dioxide and irritating or toxic vapors and gases.

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## 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Use inert, noncombustible absorbent material. Sweep or scoop up using non-sparking tools and remove.

**LARGE SPILL:** Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks) NO SMOKING. Persons not wearing protective equipment should be excluded from the area of the spill until after clean-up has been completed. 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. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb all unrecoverable product. Transfer contaminated absorbent, soil and other waste materials to waste containers for disposal.

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## 7. HANDLING AND STORAGE

**HANDLING:** Avoid inhalation and contact with eyes, skin and clothing. Wash hands thoroughly after handling and before eating or drinking. Remove and wash contaminated clothes 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 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 promptly returned to a drum reconditioner or properly disposed.

**STORAGE:** 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, resin should be stored in closed containers at temperatures below 75 degrees F (25 degrees C). Copper or copper containing alloys should be avoided as containers.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Provide sufficient local exhaust and general ventilation to maintain exposure below PEL(s), especially for spraying operations which produce mists.

### PERSONAL PROTECTION

**EYES AND FACE:** Wear safety glasses with side shields or goggles when handling this material.

**SKIN:** To prevent any contact, wear impervious protective clothing such as neoprene or butyl rubber gloves, apron, boots or whole bodysuit, as appropriate.

**RESPIRATORY:** Use NIOSH/MSHA approved air supplied respirator in absence of proper environmental control.

**COMMENTS:** OSHA has established for styrene, a PEL of 100 ppm for an 8-hour TWA; 200 ppm for an acceptable ceiling concentration for an 8-hour shift. While the federal workplace exposure limit for styrene is 100 ppm, OSHA accepted the styrene industry's proposal to voluntarily meet a PEL of 50 ppm on an 8-hour TWA and STEL of 100 ppm, 15 minute exposure.

ACGIH have established, for styrene. TLV of 20 ppm or 85 mg/m<sup>3</sup> TWA and 40 ppm or 170 mg/m<sup>3</sup> STEL, 15 minute exposure, with a skin notation which indicates absorption through the skin which could add to the employee's exposure.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Liquid

**ODOR:** Pungent, irritating odor.

**COLOR:** Pink, clear

**PERCENT VOLATILE:** 33-37

**VAPOR PRESSURE:** 6.12 mmHg

**VAPOR DENSITY:** 3.6 (Air=1)  
**BOILING POINT:** (295°F) to (146°F)  
**FREEZING POINT:** -30.4°C (-22.7°F)  
**MELTING POINT:** Not Applicable  
**SOLUBILITY IN WATER:** Insoluble  
**EVAPORATION RATE:** <1  
**SPECIFIC GRAVITY:** 1.12 to 1.14 @ 25°C  
**(VOC):** 422 grams/liter

**COMMENTS:**

**VAPOR PRESSURE:** Styrene

**VAPOR DENSITY:** Styrene

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**10. STABILITY AND REACTIVITY**

**STABLE:** YES

**HAZARDOUS POLYMERIZATION:** NO

**POLYMERIZATION:** Product will undergo hazardous polymerization at temperatures above 150 degrees F (65 C). Hazardous polymerization will occur if contaminated with incompatible agents.

**HAZARDOUS DECOMPOSITION:** Various hydrocarbons and irritating, acrid vapors

**INCOMPATIBLE MATERIALS:** Strong acids, oxidizing agents (peroxides), metal salts and polymerization catalysts.

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**11. TOXICOLOGICAL INFORMATION**

**EYE EFFECTS:** This material may cause significant irritation to the eyes.

**GENERAL COMMENTS:** 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 Skin Toxicity:

Draize Skin Primary Irritation Score (range, 0-8) for a 4-hour exposure (rabbits) to styrene is 6.6. Styrene: dermal LD50 (rabbit), 5 g/kg.

Styrene causes severe irritation at 72 hours.

Acute Inhalation Toxicity:

Styrene: inhalation LC50 (rat), 24 g/m<sup>3</sup> /4 hrs. Studies indicate that exposures to concentrations of styrene above 200 ppm cause irritation of the upper respiratory

tract. Acute exposure to high concentrations of styrene may produce irritation of the mucous membranes of the upper respiratory tract, nose, and mouth, followed by symptoms of narcosis, muscular contraction, and death due to respiratory center paralysis.

#### Acute Oral Toxicity:

Styrene: oral LD50 (rat), 5 g / kg.

#### Subchronic:

Styrene: inhalation NOEL(rat) 200 ppm 6 hr / day 13 weeks, target organ effects: auditory response; inhalation LOEL (rat) 800 ppm 6 hr / day 3 -13 weeks, target organ effects: auditory response. Styrene has been shown to cause probable hearing loss in rats exposed for at least six hours per day for three to thirteen weeks to 800 ppm of styrene in the air, as indicated by a rise in the auditory brainstem response threshold and loss of hair cells of the inner ear. No effects were observed in rats exposed to styrene at 200 ppm for 13 weeks. Based on animal studies and human experience, no significant risk of hearing loss is expected in occupationally exposed persons.

Overexposure to styrene has been suggested as a cause of the following effects in laboratory animals and may aggravate pre-existing 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. The animal data included an increased incidence of cancer observed in a few studies in which rats and mice were given styrene by inhalation or by ingestion for their lifetimes. IARC considered the combined results of these cancer studies to provide "limited evidence" of carcinogenicity. Other scientists consider the results of these studies inadequate to assess human carcinogenicity because these studies had either negative or statistically inconclusive results or had serious problems such as poor study design or very high mortality. Other relevant data included results from in-vivo and in-vitro genotoxicity studies. IARC also relied on data on styrene oxide including the results of two studies demonstrating stomach tumors in rats that were fed styrene oxide for their lifetime. Several epidemiology studies involving workers in the styrene, polystyrene or reinforced plastics industries have been conducted. Together, these studies show no increased cancer risk from occupational exposure to styrene.

Preliminary results of a recent inhalation study indicated that mice exposed to styrene showed an increased incidence of lung tumors, however no dose response relationship was observed.

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.

The American Conference of Governmental Industrial Hygienists (ACGIH) has adopted the listing of Styrene as "A4-Not Classifiable as a Human Carcinogen." There is inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

#### 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.

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## 12. ECOLOGICAL INFORMATION

**ECOTOXICOLOGICAL INFORMATION:** Styrene is toxic to aquatic organisms and should not be released to sewage, drainage systems and all bodies of water at concentrations exceeding approved limits under applicable regulations and permits. Styrene: LC50 (Sheepshead minnow), 9.1 mg / l / 96 hr.

**CHEMICAL FATE INFORMATION:** Styrene released to soil is subject to biodegradation. The results of one extensive biological screening study suggest that styrene will be rapidly destroyed by biodegradation in most aerobic environments, but the rate may be slow at low concentrations in aquifers and lake waters and in environments at low pH (6).

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## 13. DISPOSAL CONSIDERATIONS

**EMPTY CONTAINER: EMPTY DRUMS:** "Empty containers", as defined under 40 CFR 261.7 or other applicable state or provincial regulations or transportation regulations, are not classified as hazardous wastes.

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**RCRA/EPA WASTE INFORMATION:** This material and containers that are not empty, if discarded, would be regulated as a hazardous waste under RCRA. Treatment and/or disposal must be completed at a RCRA-permitted Treatment, Storage and Disposal Facility (TSD). The storage and transportation of RCRA hazardous wastes are also regulated by the USEPA.

**RCRA HAZARD CLASS:** D001 (IGNITABLE): When discarded in its purchased form, this material would be regulated under 40 CFR 261.21 as EPA Hazardous Waste Number D001 based on the characteristic of ignitability.

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#### 14. TRANSPORT INFORMATION

##### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** Resin Solution

**PRIMARY HAZARD CLASS/DIVISION:** 3

**UN/NA NUMBER:** 1866

**PACKING GROUP:** III

**LABEL:** Flammable

**MARINE POLLUTANT #1:** Styrene

##### CANADA TRANSPORT OF DANGEROUS GOODS

**PROPER SHIPPING NAME:** Resin Solution

**PRIMARY HAZARD CLASS/DIVISION:** 3

**UN/NA NUMBER:** 1866

**PACKING GROUP:** III

**PLACARDS:** Flammable

**LABEL:** Flammable

##### VESSEL (IMO/IMDG)

**PROPER SHIPPING NAME:** Resin Solution

**PRIMARY HAZARD CLASS/DIVISION:** 3.3

**UN/NA NUMBER:** 1866

**PACKING GROUP:** III

**MARINE POLLUTANT #1:** Styrene

**PLACARDS:** Flammable

**LABEL:** Flammable

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#### 15. REGULATORY INFORMATION

##### UNITED STATES

##### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

**313 REPORTABLE INGREDIENTS:** CAS No.: Common Name/ Chemical Name: State RTK: SARA 313:  
100-42-5 Styrene Monomer/Ethenyl PA. NJ. MA. Yes  
Benzene

26098-37-3 Polyester Not Listed No  
Resin/2,5-Furandione, polymer  
with 1,3-isobenzofurandione,  
2,2'-oxybis[ethanol] and 1,2-  
propanediol

SARA 311/312: Immediate / Delayed / Flammable / Reactive

TSCA Inventory Status:

All components of this material are listed on the US Toxic Substances  
Control Act (TSCA) inventory.

#### **TSCA (TOXIC SUBSTANCE CONTROL ACT)**

**TSCA STATUS:** TSCA Inventory Status:

All components of this material are listed on the US Toxic Substances  
Control Act (TSCA) inventory.

#### **GENERAL COMMENTS: CERCLA:**

Styrene (CAS# 100-42-5): Reportable Quantity = 1,000 lb.

California Proposition 65:

WARNING: This product contains a chemical(s) known to the State of  
California to cause cancer. Styrene Oxide

Canada CEPA:

All components of this material are listed on the Canadian Domestic  
Substances List (DSL).

Canada 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: Under the Transportation of Dangerous Goods  
regulations, the following chemicals have been assigned Regulated Limits (RL): Styrene  
Monomer (CAS # 100-42-5): RL=50 KG.

The following chemicals are listed on the WHMIS Ingredient Disclosure List:

Styrene Monomer (CAS# 100-42-5)

The following chemical(s) are listed on the Canadian National Pollutant  
Release Inventory (NPRI):

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Styrene Monomer (CAS# 100-42-5)

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**16. OTHER INFORMATION**

**APPROVED BY:** David C. Dillon      **TITLE:** Systems Administrator

**APPROVAL DATE:** 01/10/2003

**REVISION SUMMARY** New MSDS

**NFPA CODES**

**FIRE:** 3    **HEALTH:** 2    **REACTIVITY:** 1

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