

**MATERIAL SAFETY DATA SHEET**

KF-43, KF-47, KF-39

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\*\*\*\*\* SECTION I, IDENTIFICATION OF PRODUCT \*\*\*\*\*

CUSTOMER NAME:

PRODUCT NAME: Plastic Filler

PRODUCT NUMBER: KF-43, KF-47, KF-39

\*\*\*\*\* SECTION II, COMPOSITION / INFORMATION ON INGREDIENTS \*\*\*\*\*

INGREDIENT	CAS #	%WGH?' (mmHg) VD	PPM	MG/M?
STYRENE MONOMER	100-42-5	04.5 3.6 OSHA	50.00	0.000
		@ 68.00 C ACGIH	20.00	0.000

REFER TO SECTION 8, EXPOSURE GUIDELINES

Refer to Section 8, Subheading "Exposure Guidelines", for additional information concerning exposure limits. Section 8, "Exposure Guidelines", includes information the OSHA-styrene industry voluntary agreement on exposure limits for styrene.

\*\*\*\*\* SECTION III, HAZARDS IDENTIFICATION \*\*\*\*\*

Emergency Overview

Appearance: Dense Liquid, Pungent odor; Flammable Liquid and Vapor.  
 Harmful if swallowed - can enter lungs and cause lung damage.  
 May undergo hazardous polymerization. Route  
 (s) of Entry:  
 Inhalation, ingestion, skin and eyes. Acute  
 Exposure:  
 INHALATION: Harmful if inhaled. Effects from over exposure may include headaches, fatigue, nausea, sensation of drunkenness, central nervous system depression and pulmonary edema.  
 Skin: Harmful if absorbed through the skin. Prolonged or repeated skin contact can result in defatting and drying of the skin. Contact causes skin irritation.  
 EYES: Harmful to eyes. Direct contact with this material

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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 inhalation route. Styrene is harmful or fatal if liquid is aspirated into the lungs. Chronic Exposure:

Over exposure to this material (or it's components) has been suggested as a cause of the following disorders of these organs; central nervous system effects, effects on hearing and respiratory tract damage.

Carcinogenicity:

This material contains styrene which is listed by the International Cancer Agency for Research (IARC) on cancer as a group 2B cancer causing agent (possibly carcinogenic to humans). (see Section 11 for further details)

\*\*\*\*\* SECTION IV, 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 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.

\*\*\*\*\* SECTION V, FIRE FIGHTING MEASURES \*\*\*\*\*

Flash Point: 88 F FLASH POINT METHOD USED: Setaflash Closed Cup

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FLAMMABLE UNITS IN AIR (LOWER) 1.1 o in air Styrene

FLAMMABLE LIMITS IN AIR (UPPER): 7 o in air Styrene

AUTOIGNITION:

914 degrees F (490 degrees C) Styrene

\*\*\*\*\* SECTION VI, ACCIDENTAL RELEASE MEASURES \*\*\*\*\*

Accidental Release Measures

FOR SMALL SPILLS: Absorb spill with inert material (e.g., dry sand or ear\_1:h),then place in a chemical waste container Use non-sparking (non-metallic) tools to clean up spill. Remove all sources of ignition. NO SMOKING.
LARGE SPILLS: Eliminate all ignition sources (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. 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. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other waste materials to waste containers for disposal. See Section 13 for disposal considerations.

\*\*\*\*\* SECTION VII, HANDLING AND STORAGE \*\*\*\*\*

SIGNAL WORD: WARNING Handling information:

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 promotors and catalysts for additional instructions on proper mixing and usage. Empty containers



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Wear 1) safety glasses with side shields and a face shield or 2) goggles and a face shield. Facilities storing or utilizing this material should be equipped with an eye wash station and safety shower.

Skin Protection:

Wear chemical resistant gloves such as polyvinyl alcohol or Viton (R) 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.

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. See Section 2 and 8 for applicable occupational 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.

\*\*\*\*\* SECTION IX, PHYSICAL AND CHEMICAL PROPERTIES \*\*\*\*\*

PHYSICAL AND CHEMICAL PROPERTIES

Color:	Clear Styrene 0.2
Odor:	ppm Styrene Liquid
	Insoluble at 20 C (68 F) 6.12 (mm
Odor Threshold: Physical	Hg) Styrene
State: Solubility in Water:	1.13 - 1.15 g/cc at 25 C 295 F (146
Vapor Pressure: Specific	C) Styrene -22.7 F (-30.4 C)
Gravity: Boiling Point:	Styrene <1 (BuAc=1) Styrene (77 F)
Freezing Point: Evaporation	30.6 Styrene No Data
Rate: Vapor Density:	
pH:	

\*\*\*\*\* SECTION X, STABILITY AND REACTIVITY \*\*\*\*\*

TOXIC SUBSTANCES CONTROL ACT (TSCA)STATUS: All components of this product are Section 8(b) listed on the TSCA Inventory.

SARA SECTION 312 HAZARD CATEGORIES: Y-Fire Hazard N-Pressure Hazard

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Y-Reactivity Hazard  
 Chronic Health Hazard  
 SARA SECTION 313 STATUS

Y-Acute Health Hazard Y-

Component/Category Name	CAS Number	Weight o
STYRENE		47.86

Stability:

Stable at normal temperatures and storage conditions. See Section 7 for additional storage information. Incompatibility: Avoid contact with strong acids, oxidizing agents (peroxides), metal salts and polymerization catalysts. Hazardous Decomposition Products: Thermal decomposition may produce various hydrocarbons and irritating, acrid vapors.  
 Hazardous Polymerization:  
 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.

\*\*\*\*\* SECTION XI, TOXICOLOGICAL INFORMATION \*\*\*\*\*

Acute Eye Toxicity:

Studies indicate that exposures to concentrations of 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 eye irritation at 72 hours.

Acute Inhalation Toxicity:

Styrene: inhalation LC50 (rat), 24 g/g/m3 /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 respirator 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

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(rat) 600 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 in 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 incidences 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

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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:

\*\*\*\*\* SECTION XII, ECOLOGICAL INFORMATION

Ecotoxicity:

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.

Environmental Fate:

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 low at low concentrations in aquifers and lake waters and in environments at low pH (6).

\*\*\*\*\* SECTION XIII, DISPOSAL CONSIDERATIONS \*\*\*\*\*

WASTE DISPOSAL METHOD:

RCRA HAZARDOUS WASTE: 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 disposal of hazardous wastes are also regulated by the USEPA. 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 waste.

RCRA Hazard Class:

(IGNITABLE): When discarded in its purchased form, this material would be regulated under 40 CFR 261.21 as EPA

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\*\*\*\*\* SECTION XIV,  
Transportation Information

TRANSPORT INFORMATION \*\*\*\*\*

DOT: Non-Bulk  
 Proper Shipping Name: RESIN SOLUTION  
 Hazard Class: 3  
 ID Number: UN1866  
 Packing Group: III  
 Label: Flammable Liquid  
 Placard: Flammable Liquid  
 Marine Pollutant:

ERG# 127

DOT: Bulk  
 Proper Shipping Name: RESIN SOLUTION  
 Hazard Class: 3  
 ID Number: UN1866  
 Packing Group: III  
 Label: Flammable Liquid  
 Placard: Flammable Liquid  
 Marine Pollutant: STYRENE

ERG Number: 127

IATA: Non Bulk  
 Proper Shipping Name: RESIN SOLUTION  
 Hazard Class: 3  
 ID Number: UN1866  
 Packing Group: III  
 Label: Flammable Liquid  
 Placard: Flammable Liquid  
 Marine Pollutant:

ERG Number: 127

IMDG: Bulk and Non-Bulk  
 Proper Shipping Name: RESIN SOLUTION  
 Technical Shipping Name (if n.o.s.):  
 Hazard Class: CLASS 3.3  
 ID Number: UN1866  
 Packing Group: PGIII  
 Label: Flammable Liquid  
 Placard: Flammable Liquid  
 Marine Pollutant: STYRENE

ERG Number 127

TDG: Non-Bulk

Proper Shipping Name: RESIN SOLUTION

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Technical Shipping Name (If n.o.s.): Hazard Class:

CLASS 3  
ID Number: UN1866  
Packing Group: PGIII  
Label: Flammable Liquid  
Placard: Flammable Liquid  
ERG Number: 127

TDG: Bulk

Proper Shipping Name: RESIN SOLUTION

(If n.o.s.):  
Hazard Class: CLASS 3

ID Number: UN1866  
Packing Group: PGIII  
Placard: Flammable Liquid  
ERG Number: 127

Additional Information:

This product, if released in quantities greater than 3390 pounds in the U.S., would trigger reporting requirements under the applicable transportation regulations.

## \*\*\*\*\* SECTION XV, REGULATORY INFORMATION \*\*\*\*\*

## REGULATORY INFORMATION:

Clean Air Act -Hazardous Air Pollutants (HAP):

Styrene (100-42-5) is listed as a Hazardous Air Pollutant (HAP) under Section 112 of the Clean Air Act.

Clean Water Act -Priority Pollutants (PP):

Styrene (100-42-5) is listed under Section 311 as a Hazardous Substance.

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 II?: 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

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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. Canadian Inventory Status: 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) California Proposition 65: Warning: This product contains a chemical(s) known to the state of California to cause cancer. Styrene Oxide New Jersey Right-to-Know:

Styrene (CAS# 100-42-5) is listed on the New Jersey Right-to-Know List as a Special Hazardous Substance and an Environmentally Hazardous Substance. Pennsylvania Right-to-Know:

Styrene (CAS# 100-42-5) is listed on the Pennsylvania Right-to-Know List as an Environmental Hazard. 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): Styrene Monomer (CAS# 100-42-5)

\*\*\*\*\* SECTION XVI, OTHER INFORMATION \*\*\*\*\*

PREPARED BY:

Donna Allen  
RECORDKEEPING REQUIREMENTS: CFR 29 1910.1020

MATERIAL SAFETY DATA SHEETS AND PARAGRAPH (C)(5)(IV) RECORDS CONCERNING THE IDENTITY OF A SUBSTANCE OR AGENT NEED NOT BE RETAINED FOR ANY SPECIFIC PERIOD AS LONG AS SOME RECORD OF IDENTITY (CHEMICAL NAME IF KNOWN) OF THE SUBSTANCE OR AGENT, WHERE IT WAS USED IS RETAINED FOR AT LEAST (30 YEARS).

DISCLAIMER:

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This Material Safety Data Sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in this Material Safety Data Sheet (s) which we received from sources outside our company.

We believe that information to be correct but cannot guarantee its accuracy or completeness. Health and Safety precautions in this Material Safety Data Sheet may not be adequate for all individuals and or situations.

Is is the "User's Obligation" to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement is made in this Material Safety Data Sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either expressed or implied.

It is the sole interest of SPR International Inc. meet and comply with all OSHA & EPA regulations. Please review the enclosed Material Safety Data Sheet, If you have any questions please contact us immediately.