

Safety Data Sheet

SECTION 1: IDENTIFICATION

TRADE NAME: UNSATURATED POLYESTER GEL COAT IN MONOMER

CAS NUMBER: MIXTURE

PRODUCT CODE: FFT-4500

PRODUCT DESCRIPTION: ORANGE ISO TOOLING GEL COAT

HK RESEARCH CORPORATION

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Section 2: Hazard(s): Identification

Classification of the substance or mixture

GHS Classification and labeling according to JISZ 7252-2009 and JIS Z 7253-2012 (GHS 2011)

Classification

Flammable liquids, Category 3
Acute toxicity, Category 4, Inhalation
Skin irritation, Category 2
Eye irritation, Category 2A
Germ cell mutagenicity, Category 2
Carcinogenicity, Category 2
Reproductive toxicity, Category 1B
Specific target organ systemic toxicity - single exposure, Category 1, Central nervous system
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory tract irritation
Specific target organ systemic toxicity - repeated exposure, Category 1, Blood system, Liver, Nervous system, respiratory tract/organ
Aspiration hazard, Category 1



SIGNAL WORD: DANGER

Hazard Statements

H226: Flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H335: May cause respiratory irritation.
H341: Suspected of causing genetic defects.
H351: Suspected of causing cancer.
H360: May damage fertility or the unborn child.
H370: Causes damage to organs (Central nervous system).
H372: Causes damage to organs (Blood system, Liver, Nervous system, respiratory tract/organ) through prolonged or repeated exposure.
H401: Toxic to aquatic life.

Precautionary Statements

Prevention:

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233: 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.
P260: Do not breathe dust/fume/gas/mist/vapor/spray.
P264: Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P311: IF exposed or concerned: Call a POISON CENTER or doctor/ physician.
P308 + P313: IF exposed or concerned: Get medical advice/attention.
P321: Specific treatment (see supplemental first aid instructions on this label).
P331: Do NOT induce vomiting.
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P362 + P364: Take off contaminated clothing and wash it before reuse.
P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P403 + P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.

Disposal:

P501: Dispose of contents/ container to an approved waste disposal plant.

Section 3: Composition/Information on ingredients

1.

CAS# MIXTURE
UNSATURATED POLYESTER RESIN 45 - 55%
EXPOSURE LIMIT:
ACGIH TLV/TWA: 50 ppm
OSHA PEL/TWA: 50 ppm
LD50, ORAL: NOT AVAILABLE
LD50, DERMAL: NOT AVAILABLE
LC50, INHALATION: NOT AVAILABLE

2.

CAS# 000100-42-5
STYRENE MONOMER [1] 44%
VAPOR PRESSURE: 4.3MMHG @ 68F
EXPOSURE LIMIT:
ACGIH TLV/TWA: 20 ppm TWA 8 hours
OSHA PEL/TWA: 100 ppm TWA 8 hours
LD50, ORAL: 5000 mg/kg RAT
LD50, DERMAL: 5000+mg/kg RABBIT
LC50, INHALATION: 11800mg/kg RAT 4 HOURS

3.

CAS# 112945-52-5
SILICON DIOXIDE 1 - 7%
EXPOSURE LIMIT:
ACGIH TLV/TWA: 10 mg/m³
OSHA PEL/TWA: 6 mg/m³ RESPIRABLE
LD50, ORAL: 5000 mg/kg RAT
LD50, DERMAL: 2000 mg/kg RABBIT
LC50, INHALATION: N/A N/A
NOT HAZARDOUS

REMAINING COMPONENTS NOT DETERMINED TO BE HAZARDOUS
AND/OR HAZARDOUS COMPONENTS PRESENT AT LESS THAN
1.0% (0.1% FOR CARCINOGENS)

[1] NOTE: This chemical subject to reporting requirements under
SARA Title III, Section 313

Section 4: First-aid measures

ROUTE OF EXPOSURE

INGESTION:

Moderately Toxic. May cause gastrointestinal disturbances. Symptoms may include irritation, nausea, vomiting and diarrhea. Exposure may cause symptoms similar to those listed under "Inhalation" (see Inhalation section).

SKIN:

Moderately Irritating. Repeated or prolonged skin contact may cause reddening, inflammation or blistering. May cause allergic reactions in some individuals. Contact with heated material may cause thermal burns. Exposure may cause symptoms similar to those listed under "Inhalation" (see Inhalation section).

EYE:

Moderately Irritating. Direct contact may cause temporary corneal lesions. Contact with heated material may cause thermal burns.

INHALATION:

SLIGHTLY TOXIC. May cause respiratory tract irritation. May cause harmful central nervous system effects. Effects may include drowsiness, impaired balance, nausea, vomiting, loss of appetite and general weakness-- "Styrene Sickness". May cause blood changes and liver damage. The disagreeable odor and irritation of this material make inhalation of acutely toxic concentrations unlikely.

SPECIAL TOXIC EFFECTS:

Carcinogenic determinations: The International Agency for Research on Cancer (IARC) has classified styrene in Group 2B (possibly carcinogenic to humans). This classification is not based on any significant new evidence that styrene may be carcinogenic, but rather on a revised definition for group 2B and consideration of new data on styrene oxide.

A number of lifetime animal studies with styrene including those conducted in the NCI bioassay program have not shown styrene to be carcinogenic.

Pre-existing medical conditions which may be aggravated by exposure include, but are not limited to, chronic respiratory and skin disease and central nervous system disorders.

***** EMERGENCY AND FIRST AID *****

INGESTION:

DO NOT INDUCE VOMITING BECAUSE OF DANGER OF ASPIRATING LIQUID INTO LUNGS BURNING (IRRITATING) ESOPHAGUS AGAIN.

If spontaneous vomiting monitor for breathing difficulty. Keep affected person warm and at rest. Get immediate medical attention.

SKIN CONTACT:

Wash area of contact thoroughly with soap and water. Remove contaminated clothing immediately. Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Get medical attention if irritation persists.

EYE CONTACT:

Flush immediately with large amounts of water for 20-30 minutes. Eye lids should be held away from the eyeball to insure thorough rinsing. Get medical attention if irritation persists.

INHALATION:

Remove affected person from source of exposure. If breathing is difficult, give oxygen. Keep affected person warm and at rest. Get immediate medical attention.

Section 5: Fire-fighting measures

FLASH POINT °C (°F): 30-35(87-95)

FLAMMABILITY CLASSIFICATION: CLASS 1C

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

FLAMMABILITY LIMITS IN AIR (% by volume): LOWER: 1.1 UPPER: 6.1

BASIC FIREFIGHTING PROCEDURES:

Use dry chemical, all purpose or polar AFFF foam or water spray to extinguish fire. Water or foam may cause frothing, with further application leading to boilover. Foam may have limited effectiveness on three dimensional fires. Use water spray to cool fire-exposed containers, structures and to protect personnel. Use water to flush spills away from source of ignition. Do not flush down public sewers.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Fire may produce poisonous or irritating gas, fumes or vapor. Excessive heat may trigger polymerization of confined material. Containers may explode in heat of fire. Styrene vapors are uninhibited and may form polymers in vents or flame arrestors of storage tanks, resulting in stoppage of vents. Exposed firefighters should wear MSHA/NIOSH approved self-contained breathing apparatus, with full face mask and full protective equipment.

Section 6. Accidental release measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

No flares, smoking, flames, sparks & other sources of ignition in hazardous area. Stop leak if you can do it without risk. Use water spray to reduce vapors.

SMALL SPILLS--Take up with sand or other noncombustible absorbent material or other sorbent known to be compatible, then flush area with water.

LARGE SPILLS--Dike far ahead of spill for later disposal.

WASTE DISPOSAL METHOD:

Incinerate in an approved incinerator or dispose of in a chemical dump in accordance with local, state and federal regulations.

Section 7. Handling and storage

Store in tightly closed containers in cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles.

"Empty" containers may contain toxic, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.

Section 8. Exposure controls/personal protection

EYE PROTECTION:

Wear safety glasses or chemical goggles to prevent eye contact. Do not wear contact lenses when working with this substance. Have eye baths readily available where eye contact can occur.

SKIN PROTECTION:

Wear impervious gloves and protective clothing to prevent skin contact. Suggested protective materials are: Polyvinyl alcohol, Polyethylene and Viton. Provide safety showers at any location where skin contact can occur.

RESPIRATORY PROTECTION:

Use NIOSH or MSHA approved equipment when airborne exposure limits are exceeded. NIOSH/MSHA approved breathing equipment may be required for non-routine and emergency use. Ventilation may be used to control or reduce airborne concentrations.

Section 9. Physical and chemical properties

BOILING POINT, °C (°F): >145 (293)
VAPOR PRESSURE, mm Hg: <5 @ 20°C (68°F)
VAPOR DENSITY (AIR=1): 3.6 (styrene)
SOLUBILITY IN WATER: NEGLIGIBLE
SPECIFIC GRAVITY (H₂O=1): 1.08 +/- 5% @ 25°C
PERCENT VOLATILE (VOC): 44
EVAPORATION RATE (ETHER=1): <1
APPEARANCE/ODOR: RED LIQUID WITH PUNGENT ODOR
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Section 10. Stability and reactivity

STABILITY/INCOMPATIBILITY:

Stable under normal conditions of use. Avoid contact with strong oxidizers.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS:

Thermal decomposition products may be hazardous. Reacts vigorously with oxidizing agents. "Empty" containers may contain toxic, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.

11. Toxicological information

INGESTION:

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Section 12. Ecological information

Ecotoxicity

Styrene

Bioconcentration factor (BCF) 13.5 - 64

Log Pow 3.16

Toxicity to Aquatic Invertebrates LC50 (48h) 23 mg/l (Daphnia magna)

Freshwater Fish LC50 (96h) 32 mg/l (pimephales promelas)

Section 13. Disposal considerations

Waste Disposal Method: Hazardous waste. Can be incinerated, when in compliance with local regulations.

Contaminated Packaging: Empty containers should be taken for local recycling, recovery or waste disposal.

US EPA Waste Number: 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.

Section 14. Transport information

DOT

UN-No UN1866
Proper Shipping Name: RESIN SOLUTION
Hazard Class CLASS 3
Packing Group PGIII
NAERG: 127

TDG

UN-No UN1866
Proper Shipping Name RESIN SOLUTION
Hazard Class CLASS 3
Packing Group PGIII
NAERG: 127

IATA

UN-No UN1866
Proper Shipping Name RESIN SOLUTION
Hazard Class CLASS 3
Packing Group PGIII
NAERG: 127

IMDG/IMO

UN-No UN1866
Proper Shipping Name RESIN SOLUTION
Hazard Class CLASS 3
Packing Group PG III
EmS No. F-E, S-E

Section 15. Regulatory information

Clean Air Act -Hazardous Air Pollutants (HAP): The following chemical(s) are listed as hazardous air pollutants (HAP) under the U.S. Clean Air Act Section 112(b)(1), (40 CFR 61): STYRENE MONOMER [1] (CAS# 000100-42-5) See Section 2 of this SDS for amount.

Clean Water Act - Priority Pollutants (PP): STYRENE MONOMER [1] (CAS# 000100-42-5) 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 III: Section 304 - CERCLA: STYRENE MONOMER [1] (CAS# 000100-42-5)
Reportable Quantity = 1,000 lb.

SARA Title III: Section 311/312 - Hazard Communication Standard (HCS):
This 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 MONOMER [1] (CAS# 000100-42-5)

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.

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)

California Proposition 65: WARNING: This product contains a chemical(s)
known to the State of California to cause cancer. Styrene Oxide, ethylbenzene

Additional Canadian Regulatory Information: The following chemicals are
listed on the WHMIS Ingredient Disclosure List:
Styrene Monomer (CAS# 100-42-5)

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

Section 16. Other information

Preparation Date: MAY 16, 2016

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