

Section 1 Product and Company Identification

> Product Identifier

Product Name	Unsaturated polyester resin
Synonyms	-
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable

> Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name	Evergreen Chemicals Co., Ltd
Application Address	Room 2308, Wuzhou International Square, Jiangyin, Jiangsu, China
Applicant Post Code	214445
Applicant Telephone	+86-17714007018
Applicant Fax	+86-510-86055909
Applicant E-mail	Info@evergreenchemicals.cn
Supplier Name	Evergreen Chemicals Co., Ltd
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> Emergency Phone Number

Emergency Phone Number	+86-532-83889090
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Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the eighth revised edition):

> GHS Hazard Class

Flammable Liquids	Category 3
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Skin Corrosion/Irritation	Category 2
Eye Damage/Irritation	Category 2A
Reproductive Toxicity	Category 2
Specific Target Organ Toxicity (Repeated Exposure)	Category 1

> GHS Label Elements

Pictogram



Signal Word

Danger

> Hazard Statements

H226	Flammable liquid and vapour
H315	Causes skin irritation
H319	Causes serious eye irritation
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure

> Precautionary Statements

Prevention

P203	Obtain, read and follow all safety instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash contact area thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response

P318	IF exposed or concerned, get medical advice.
P319	Get medical help if you feel unwell.
P321	Specific treatment (see measures on this label).
P332+P317	If skin irritation occurs; Get medical help.

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P337+P317	If eye irritation persists: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	In case of fire: Use suitable extinguishing medium to extinguish.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	
P405	Store locked up.
P403+P235	Store in a well-ventilated place. Keep cool.
Disposal	
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 3 Composition/Information on Ingredients

Component	Concentration (weight percent, %)	CAS No.	EC No.
Styrene	Commercial secrets	100-42-5	202-851-5
Unsaturated polyester	Commercial secrets	-	-

Section 4 First Aid Measures

> Description of First Aid Measures

General Advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin Contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of First-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

> Most Important Symptoms and Effects, both Acute and Delayed

- 1 Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

> Indication of Any Immediate Medical Attention and Special Treatment Needed

- 1 Treat symptomatically.
- 2 Symptoms may be delayed.

Section 5 Fire Fighting Measures

> Extinguishing Media

Suitable Extinguishing Media

Dry chemical, carbon dioxide or alcohol-resistant foam.

Unsuitable

Extinguishing Media

Do not use a solid water stream as it may scatter or spread fire.

> Specific Hazards Arising from the Substance or Mixture

- 1 Will form explosive mixtures with air.
- 2 Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/ or vapour concentration.
- 3 Vapours may travel to source of ignition and flash back.
- 4 Liquid and vapour are flammable.
- 5 Containers may explode when heated.
- 6 Fire exposed containers may vent contents through pressure relief valves.
- 7 May expansion or decompose explosively when heated or involved in fire.

> Advice for Firefighters

- 1 As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
- 2 Fight fire from a safe distance, with adequate cover.
- 3 Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6 Accidental Release Measure

> Personal Precautions, Protective Equipment and Emergency Procedures

- 1 Avoid breathing vapors and contacting with skin and eye.
- 2 Beware of vapours accumulating to form explosive concentrations.
- 3 Vapours can accumulate in low areas.
- 4 Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
- 5 Ensure adequate ventilation. Remove all sources of ignition.
- 6 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
- 7 Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

> Environmental Precautions

- 1 Prevent further leakage or spillage if safe to do so.
- 2 Discharge into the environment must be avoided.

> Methods and Materials for Containment and Cleaning Up

- 1 Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
- 2 Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
- 3 Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Section 7 Handling and Storage

> Precautions for Handling

- 1 Avoid inhalation of vapors.
- 2 Use only non-sparking tools.
- 3 To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
- 4 Use explosion proof equipment.
- 5 Handling is performed in a well ventilated place.
- 6 Wear suitable protective equipment.
- 7 Avoid contact with skin and eyes.
- 8 Keep away from heat/sparks/open flames/ hot surfaces.
- 9 Take precautionary measures against static discharges.

> Precautions for Storage

- 1 Keep containers tightly closed.
- 2 Keep containers in a dry, cool and well-ventilated place.
- 3 Keep away from heat/sparks/open flames/ hot surfaces.
- 4 Store away from incompatible materials and foodstuff containers.

Section 8 Exposure Controls/Personal Protection

> Control Parameters**Occupational Exposure Limit Values**

Component	Country/Region	Limit Value - Eight Hours		Limit Value - Short Term	
		ppm	mg/m ³	ppm	mg/m ³
Styrene 100-42-5	USA - OSHA	100	-	200	-
	South Korea	20	85	40	170
	Ireland	20	85	40	170
	Germany (AGS)	20	86	40	172
	Denmark	25	105	25	105

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Australia

50

213

100

426

Biological Limit Values

No information available

Monitoring Methods

- 1 EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
- 2 GBZ/T 160 Determination of toxic substances in workplace air(Series effective standard)and GBZ/T 300 Determination of toxic substances in workplace air(Series standard).

> Engineering Controls

- 1 Ensure adequate ventilation, especially in confined areas.
- 2 Ensure that eyewash stations and safety showers are close to the workstation location.
- 3 Use explosion-proof electrical/ventilating/lighting/equipment.
- 4 Set up emergency exit and necessary risk-elimination area.

> Personal Protection Equipment

Eye Protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand Protection	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and Body Protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

Section 9 Physical and Chemical Properties

Appearance: Light yellow transparent liquid**Odor:** No information available**Odor Threshold:** No information available**pH:** No information available**Melting Point/Freezing Point (°C):** No information available**Initial Boiling Point and Boiling Range (°C):** No information available**Flash Point (°C)(Closed Cup):** 35**Evaporation Rate:** No information available**Flammability:** Not applicable**Upper/lower explosive limits[% (v/v)]:** Upper limit: No information available; Lower limit: No information available**Vapor Pressure (KPa):** No information available**Relative Vapour Density(Air = 1):** No information available**Relative Density(Water=1):** No information available**Solubility:** No information available**n-Octanol/Water Partition Coefficient:** No information available**Auto-Ignition Temperature(°C):** No information available**Decomposition Temperature (°C):** No information available**Kinematic Viscosity (mm²/s):** No information available**Particle characteristics:** Not applicable

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Section 10 Stability and Reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical Stability	Stable under proper operation and storage conditions.
Possibility of Hazardous Reactions	In contact with halides may cause an active reaction.
Conditions to Avoid	Incompatible materials, heat, flame and spark.
Incompatible Materials	Halides, Oxidantss and halogen.
Hazardous Decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11 Toxicological Information

> Acute Toxicity

Component	CAS No.	LD ₅₀ (Oral)	LD ₅₀ (Dermal)	LC ₅₀ (Inhalation, 4h)
Styrene	100-42-5	2650mg/kg(Rat)	No information available	12mg/L(Rat)

> Skin Corrosion/Irritation

Causes skin irritation(Category 2)

> Serious Eye Damage/Irritation

Causes serious eye irritation(Category 2A)

> Skin Sensitization

No information available

> Respiratory Sensitization

No information available

> Germ Cell Mutagenicity

No information available

> Carcinogenicity

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ID	CAS No.	Component	IARC	NTP
1	100-42-5	Styrene	Category 2B	Not Listed
2	-	Unsaturated polyester	Not Listed	Not Listed

> Reproductive Toxicity

Suspected of damaging fertility or the unborn child(Category 2)

> Reproductive Toxicity (Additional)

No information available

> STOT-Single Exposure

No information available

> STOT-Repeated Exposure

Causes damage to organs through prolonged or repeated exposure(Category 1)

> Aspiration Hazard

No information available

Section 12 Ecological Information

> Acute Aquatic Toxicity

Component	CAS No.	Fish	Crustaceans	Algae
Styrene	100-42-5	LC ₅₀ : 25mg/L (96h)(Fish)	EC ₅₀ : 4.7mg/L (48h)	ErC ₅₀ : 0.72mg/L (96h)

> Chronic Aquatic Toxicity

No information available

> Others

Persistence and Degradability
Bioaccumulative Potential

No information available

No information available

Mobility in Soil

No information available

Results of PBT and vPvB Assessment

Styrene does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Section 13 Disposal Considerations

Waste Chemicals

Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.

Contaminated**Packaging****Disposal****Recommendations**

Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible. Refer to Waste chemicals and Contaminated packaging.

Section 14 Transport Information

Transporting Label**Marine pollutant**

None

UN Number

1866

UN Proper Shipping Name

RESIN SOLUTION, flammable

Transport Hazard Class

3

Transport Subsidiary Hazard Class

NONE

Packing Group

III

Section 15 Regulatory Information

> International Chemical Inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Styrene	√	√	√	√	√	√	√	√	√
Unsaturated polyester	×	×	×	×	×	×	×	×	×

[EINECS] European Inventory of Existing Commercial Chemical Substances.

[TSCA] United States Toxic Substances Control Act Inventory.

[DSL] Canadian Domestic Substances List.

[IECSC] China Inventory of Existing Chemical Substances.

[NZIoC] New Zealand Inventory of Chemicals.

[PICCS] Philippines Inventory of Chemicals and Chemical Substances.

[KECI] Existing and Evaluated Chemical Substances.

[AICS] Australia Inventory of Chemical Substances.

[ENCS] Existing And New Chemical Substances.

Note

"√" Indicates that the substance included in the regulations

"×" That no data or included in the regulations

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Section 16 Additional Information

Creation Date	2021/04/09
Revision Date	2021/04/09
Reason for Revision	-

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 8th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user' s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.