

# SEWON CHEMICAL CO., LTD.

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>PRODUCT NAME</b>	SR825
<b>MANUFACTURER</b>	SEWON CHEMICAL CO., LTD. 115, Daehwa-ro 52beon-gil, Daedeok-gu, Daejeon, R.O KOREA TEL: +(82) 42 623 1800      FAX: +(82) 42 623 1804

### 2. Hazards identification



**SPECIFIC HAZARDS** : Flammable

**ADVERSE HUMAN HEALTH EFFECTS** :

Harmful by inhalation

Irritating to eyes and skin

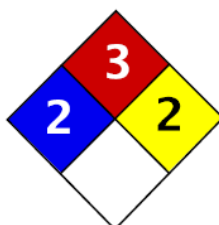
**PHYSICAL AND CHEMICAL HAZARDS** :

The mixture of product vapor and air could be explosive.

Strongly exothermic polymerization may be caused by : Heat

Free radical formers

Peroxides



HEALTH-2, FIRE-3, REACTIVITY-2

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	Trivial name	CONTENT(%)	CAS-No.	EC-No.	Classification
Epoxy acrylate	Vinyl ester(V/E)	63 ~ 67	-	-	-
Styrene Monomer	Vinyl benzene	33 ~ 37	100-42-5	202-851-5	

\* Harmful components are listed according to guideline for safety data sheet.  
Other component, not classified as harmful, are indicated by a hyphen.

### 4. FIRST AID MEASURES

<b>EYE CONTACT</b>	Wash immediately (15minutes) with water, opening eyelids. If irritation continues, see an ophthalmologist.
<b>SKIN CONTACT</b>	Take off all contaminated clothing. Wash in soap and water and rinse with water.
<b>INHALATION</b>	Take person out of the contaminated area. Remove patient to fresh air. Call a doctor in case of doubt or if symptoms persist.
<b>INGESTION</b>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
<b>GENERAL ADVICE</b>	Consult a physician. Show this safety data sheet to the doctor in attendance.

### 5. FIRE-FIGHTING MEASURES

<b>SUITABLE</b>	Powder, foam, carbon dioxide, sand pulverized water.
<b>NOT SUITABLE</b>	Use very large quantities (flooding) of water applied as a mist or spray;solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
<b>SPECIFIC HAZARDS</b>	By combustion, formation of toxic products : carbon monoxide and carbon dioxide..
<b>SPECIFIC METHODS</b>	Cool container with sprayed water to avoid polymerization. Eliminate all sources of combustion.
<b>PROTECTION OF FIRE-FIGHTERS</b>	Wear individual breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

<p><b>PERSONAL PRECAUTIONS</b></p>	<p>Avoid inhaling vapors. Wear protective equipment. Glove - Goggles - Boots. Wear self – contained breathing apparatus.</p>
<p><b>ENVIRONMENTAL PRECAUTIONS</b></p>	<p>Do not discharge in sewers. Do not allow this chemical to enter the environment. If the product contaminates lakes, rivers or sewers, inform appropriate authorities in accordance with local regulations.</p>
<p><b>METHODS FOR CLEANING UP</b></p>	<p><b>RECOVERY :</b> Spread sand. Correct the product in a container pending future destruction. <b>DISPOSAL :</b> Burn in an approved installation for liquids. Polymerized product : discharge authorized. <b>INCOMPATIBLE MATERIALS :</b>Wood sawdust</p>

## 7. HANDLING AND STORAGE

<p><b>HANDLING</b></p>	<p><b>PREVENTION OF WORKER EXPOSURE :</b> Collect vapors at source. When using, workplace ventilation is required – NO SMOKING. <b>PREVENTION OF FIRE AND EXPLOSION :</b> Do not smoke when using. Take precautionary measures against static discharges.</p>
<p><b>STORAGE</b></p>	<p><b>STORAGE CONDITION :</b> <b>-.SUITABLE :</b> Keep at temperature not exceeding 30°C. Keep container tightly closed in a cool, well ventilated place. <b>-.TO AVOID :</b> Sunlight, heat and sources of ignition(NO SMOKING) <b>INCOMPATIBLE MATERIALS :</b> Strong oxidizing agents. Catalysts and accelerator. <b>PACKING MATERIALS :</b></p>

	<p><b>-.RECOMMENDED :</b> Metal packing expect aluminum, copper or copper alloy.</p> <p><b>-.NOT SUITABLE :</b> Aluminum. Copper or copper alloy and plastics.</p>
--	--

## 8. EXPOSURE CONTENTS / PERSONAL PROTECTION

### PERSONAL PROTECTIVE EQUIPMENT

<b>RESPIRATORY PROTECTIVE EQUIPMENT</b>	Do not breathe vapors. In case of insufficient ventilation, wear suitable respiratory equipment.
<b>HAND PROTECTION</b>	Wear solvent-proof gloves.
<b>EYE PROTECTION</b>	Wear glasses.
<b>SKIN AND BODY PROTECTION</b>	Wear suitable protective clothing. Remove working clothed after work.
<b>SPECIFIC HYGIENE MEASURES</b>	When using d not eat, drink or smoke.

### OCCUPATIONAL EXPOSURE LIMITS

<b>T W A</b>	Epoxy acrylate	no data available
	Styrene	20 ppm , 85mg/m <sup>3</sup>
<b>S T E L</b>	Epoxy acrylate	no data available
	Styrene	40 ppm, 170mg/m <sup>3</sup>
<b>CEILING</b>	Epoxy acrylate	no data available
	Styrene	

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Form	Liquid	Colour	Light yellow
------	--------	--------	--------------

### SAFETY DATA

P H	no data available	Water solubility	insoluble
-----	-------------------	------------------	-----------

Boiling point	Styrene	146 °C	Melting point	Styrene	-31 °C
Flash point	Styrene	31 °C	Ignition temperature	Styrene	490 °C
explosion limit	Styrene	Upper 6.8 % Lower 0.9 %	Vapor pressure	Styrene	16,5 hPa at 37,7 °C 5,7 hPa at 15,0 °C
Density		1.03 ~ 1.07 (25°C/25°C)	Vapor density	Styrene	3.6 (air=1)
Viscosity		380 ~ 430 cps	molecular weight		Mn=3,000 ↓

## 10. STABILITY AND REACTIVITY

Storage stability	Stable under normal storage condition	
Conditions to avoid	May polymerize on exposure to light. Heat, flames and sparks.	
Materials to avoid	Oxidizing agents, Copper	
Hazardous	Epoxy acrylate	no data available
Decomposition products	Styrene	By thermal composition, formation of CO, CO <sub>2</sub> .

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity - General Material Information

<b>INHALATION</b>	Epoxy acrylate	no data available
	Styrene	causing headache, dizziness, nausea, loss of coordination, unconsciousness, and in extreme conditions coma and possibly death.
<b>ORAL</b>	Epoxy acrylate	no data available
	Styrene	no data available
<b>SKIN IRRITATION</b>	Epoxy acrylate	no data available
	Styrene	Moderate skin irritant.
<b>EYE IRRITATION</b>	Epoxy acrylate	no data available
	Styrene	Moderate eye irritant.

<b>Acute Toxicity - LD50/LC50</b>		
Oral	Epoxy acrylate	no data available
	Styrene	LD50 2650mg/kg Rat
Inhalation	Epoxy acrylate	no data available
	Styrene	LC50 Rat: 11.8 mg/L/4H;

### Chronic Toxicity - General Material Information

<Styrene>

Prolonged and repeated high exposure may cause impairment of lung, kidney, liver, and brain functions and possibly death. Chronic exposure may result in neurological defects known as "styrene sickness". Prolonged skin contact may produce irritation and defatting dermatitis. Styrene has been classified by IARC as Group 2B (possibly carcinogenic to humans) based on "inadequate evidence" in humans, "limited evidence" in animals, and "other relevant data". Styrene has been shown to be mutagenic in several "in vitro" assays.

### Chronic Toxicity

<b>Carcinogenic Effects</b>	Epoxy acrylate	no data available
	Styrene	IARC – 2B ACGIH – A4 NTP,OSHA,WISHA- no data available
<b>Mutagenic Effects</b>	Epoxy acrylate	no data available
	Styrene	Styrene has been shown to be mutagenic in several "in vitro" assays.

## 12. ECOLOGICAL INFORMATION

<b>AQUATIC/ TERRESTRIAL TOXICITY</b>	Epoxy acrylate	no data available
	Styrene	96 Hr LC50 Pimephales promelas: 4.02 mg/L 96 Hr LC50 Lepomis macrochirus: 25.05 mg/L 96 Hr EC50 Selenastrum capricornutum: 0.72 mg/L
<b>PERISTENCE/ DEGRADABILITY</b>	Epoxy acrylate	no data available
	Styrene	The BOD for styrene is 1.29 (5 days)g/g 2.45 (20 days)g/g
<b>BIO ACCUMULATION</b>	Epoxy acrylate	no data available
	Styrene	Styrene will partition from water to organisms,

		depositing in fatty tissues. Elimination is rapid and not likely to bioconcentrate through the food chain.
<b>ENVIRONMENTAL FATE/MOBILITY</b>	Epoxy acrylate	no data available
	Styrene	The atmospheric half-life for styrene vapor is estimated between 0.5 and 17 hours. Styrene is primarily removed by photochemical reactions in air and evaporation in water. The half-life in moving water has been estimated at approximately 6 hours and in ponds and lakes it ranges from 3 to 13 days. In soils with high organic content, styrene moves slowly. It will volatilize from surface soil at a much slower rate than from water.

### 13. DISPOSAL CONSIDERATIONS

<b>MEASURES FR DISPOSAL</b>	Incineration in approved installation.
<b>NEUTRALIZING OR DESTROYING PROCEDURE OF PRODUCT</b>	Incineration for liquid resins. Curing then incineration for solid resins.
<b>DESTROYING PROCEDURE OF CONTAMINATED PACKING</b>	Cleaned packaging may be recycled.

### 14. TRANSPORT INFORMATION

<b>SEA(IMDG)</b>			
<b>PROPER SHIPPING NAME</b>	RESIN SOLUTION	<b>UN NO.</b>	1866
<b>HAZARD CLASS</b>	3	<b>PACKAGING GROUP</b>	3
<b>LABEL</b>	3	<b>EMS NO</b>	3-05
<b>AIR(ICAO / IATA)</b>			
<b>UN NO.</b>	1866	<b>LABEL</b>	3
<b>CLASS</b>	3	<b>PACKAGING GROUP</b>	3
<b>LAND(RID/ADR, RTMDR/RTMDF)</b>			
<b>PROPER SHIPPING</b>	RESIN SOLUTION	<b>UN NO.</b>	1866

<b>NAME</b>			
<b>CLASS</b>	3/31 DEGREE BY CELSIUS	<b>PACKAGING GROUP</b>	3
<b>LABEL</b>	3	<b>SUBSTANCE IDENTIFICATION NO.</b>	1866

<b>15. REGULATORY INFORMATION</b>	
<b>Federal and State Regulations</b>	
Epoxy acrylate	no data available
Styrene	Pennsylvania RTK: Styrene (monomer) Florida: Styrene (monomer) Minnesota: Styrene (monomer) Massachusetts RTK: Styrene (monomer) New Jersey: Styrene (monomer) TSCA 8(b) inventory: Styrene (monomer) SARA 313 toxic chemical notification and release reporting: Styrene (monomer) CERCLA: Hazardous substances.: Styrene (monomer)
<b>Other Regulations</b>	
Epoxy acrylate	no data available
Styrene	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
<b>Other Classifications</b>	
Epoxy acrylate	no data available
Styrene	<b>WHMIS (Canada):</b> CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). <b>DSCL (EEC):</b> R10- Flammable. R38- Irritating to skin. R41- Risk of serious damage to eyes. R45- May cause cancer.



## 16. OTHER INFORMATION

This information is given in good faith and based on our current knowledge of the product.

We make no guarantee that the health and safety precautions we have suggested will be adequate for all individuals and/or situations involving its handling and use.

This information only describes safety measures and no liability may arise from the use of application of the product described herein.

Created:	2015.09.01	REVISION NO.	3
		Last Updated:	2019.03.07