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## MATERIAL SAFETY DATA SHEET

Emergency phone number: +86-532-8388-9090  
Creation date: JAN.7, 2013  
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### 1. Identification of the substance/Preparation and of the supplier

Product Name: VINYL ESTER RESIN ( STYRENE TYPE ) RIPOXY FC-63EX  
MANUFACTURER : Shanghai Showa Highpolymer Co., Ltd.  
8333, Songze Road, Qingpu Industrial Zone  
Qingpu Shanghai 201707 China

### 2. Hazards Identification

GHS CLASSIFICATION

PHYSICAL HAZARDS: Flammable Liquids Category 3

HEALTH HAZARDS: Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 2A

Carcinogenic Category 2

ENVIRONMENTAL HAZARDS: [Acute(short-term) hazard] Category 3

LABEL ELEMENTS

SIGNAL WORDS: Warning

PICTOGRAMS:



HAZARD STATEMENTS: Flammable liquid and vapour  
Cause skin irritation  
Cause serious eye irritation  
Suspected of causing cancer  
Harmful to aquatic life

### 3. Composition / Information on Ingredients

Chemical name: RIPOXY FC-63EX is mixture.

A. Vinyl ester resin	:	35-45 %
B. Styrene monomer (CAS No. 100-42-5)	:	25-30%
C. Glass flake	:	25-35%
D. Silicon dioxide	:	2-3%

Hazard substance: B

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#### 4. First-Aid Measures

##### Eye contact

Immediately wash the eye(s) with clean running water for at least 15 minutes and take a medical treatment by ophthalmologist.

##### Skin Contact

Remove all contaminated clothing, shoes and socks from the affected areas as soon as possible and wipe the resin out by a cloth.

Wash the affected area under tepid running water using a mild soap.

If irritation persists, transport to the nearest medical facility for examination as soon as possible.

##### Inhalation

Remove the victim from the contamination immediately to fresh air and keep the victim warm and quiet.

If there is something wrong, transport to the nearest medical facility for examination and treatment.

##### Ingestion

Don't induce vomiting.

Transport to the nearest medical facility for examination as soon as possible.

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#### 5. Fire-Fighting Measures

##### Specific hazards with regard to fire-fighting measures

Dry chemical powder, carbon dioxide or dry sand should be used for small fires.

In case of large fire, it is effective to shut off an air by form. Straight water may spread a fire.

If the fire may be spread, cool surrounded equipment by water spray. Move container from fire areas if it can be done without risk.

Firefighters should wear proper protective equipment and keep personnel removed from and upwind of fire.

##### Extinguishing media

Dry chemical powder, carbon dioxide, form or dry sand

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#### 6. Accidental Release Measures

For small spills, absorb spill with cloths or dry sand, then place in waste containers.

For large spills, dike for prevention of outflow. Eliminate all sources of ignition and prepare fire extinguish equipment. Wear protective equipment and place in waste containers as much as possible. For residual spill, take off by cloth and place in waste containers.

Do not wash away into shower or waterway.

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## 7. Handling & Storage

### Handling

Keep away all igniters (fires, electrostatic charges and sparks).

Use only in the well-ventilated areas. Wear protective equipment (safety glasses, rubber gloves). Avoid rough handling or dropping.

### Storage

Inside storage should be in a cool well-ventilated, noncombustible location, away from all possible source of ignition.

Separate from oxidizing materials.

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## 8. Exposure Control / Personal Protection

### Control parameters

ACGIH TLV (1999) : TWA 20ppm, STEL 40ppm (Styrene)

### Engineering measures

Use with local exhaust ventilation.

Make available emergency shower, hand wash and eye wash in the work area.

### Personal protective equipment

Chemical cartridge respirator with an organic vapor cartridge, Airline respirator, Safety goggles, Gloves, Boots, Full-body suit (Taking measure against static electricity is recommended).

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## 9. Physical & Chemical Properties

Appearance and odor	: Viscous yellowish brown liquid with aromatic smell
Density	: 1.3 – 1.4 (at 25°C)
Solubility in water	: Insoluble
Solubility in organic solvent	: Soluble in acetone or other organic solvent.
Vapor pressure	: 600Pa (at 20°C) (Styrene)
Vapor density (Air=1.0)	: 3.6 (Styrene)
Boiling point	: 145°C (Styrene)
Flash point	: 33°C
Ignition point	: 490°C (Styrene)
Explosion limit	: Lower 1.1Vol%, Upper 6.1Vol% (Styrene)
Reactivity with water	: This substance is not reactivity with water.
Oxidizibility	: This substance is not oxidizibility.
Flammability	: This substance is flammability.
Stability	: Stable in the dark at below room temperature (25°C).
Reactivity	: High temperature and light (especially direct sunlight) make the stability gets worse

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## 10. Physical Hazard (Stability & Reactivity)

The product is stable when it is stored below at room temperature(25°C).

High temperature and light (especially direct sunlight) make the stability get worse.

Incompatibility: Amines, free radical initiators and oxidizing agents.

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## 11. Toxicological Information

Irritant properties : Contact with skin causes an inflammation.  
Styrene vapor is irritating to eyes, skin and cough.

Acute toxicity : Ingestion (Styrene) \*1

LC <sub>50</sub> for mouse	9,500	mg/m <sup>3</sup> /4h
LC <sub>50</sub> for rat	24	g/m <sup>3</sup> /4h
LD <sub>50</sub> for mouse	316	mg/kg
LD <sub>50</sub> for rat	5,000	mg/kg
LCL <sub>0</sub> for human	10,000	ppm/30min
LCL <sub>0</sub> for human	600	ppm

Carcinogenic effects : IARC group 2B (Styrene) \*2  
Other group (NTP, EPA, EU, ACGIH) Unknown to be carcinogenic.

Mutagenic Effects : Styrene is negative in the Ames test. \*3

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## 12. Ecological Information

Biodegradability : Styrene is biodegradable in Japanese test.

Fish toxicity : Ingestion (Styrene)

TLm for dace	51 ppm *4
TLm for guppy	68 ppm *4
TLm for shrimp	52 ppm *5

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## 13. Disposal consideration

Extra care to burn in the chemical incinerator equipped

Any disposal practice must be in compliance with all federal, state / provincial and local laws and regulation. Do not allow into any sewers, on the ground or into any body of water.

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## 14. Transport Information

UN classification : Class-3, PG-3

UN number : 1866

When transporting the product, avoid rough handling such as given impact, knocking down and dropping.  
Confirm each vessel to seal and no leakage.

In the case of transportation with vessel and air, use container of UN mark.

Follow all regulations in your country.

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## 15. Regulatory Information

Follow all regulations in your country.

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## 16. Other Information

### References

“VINYL ESTER RESIN”

Edited by Vinyl ester resin research society( Japan)

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