


According per GB / T 16483 and GB / T 17519

## 1. Chemicals and corporate identification

Chinese name of chemical: high temperature solvent-resistant vinyl ester resin (SWANCOR 977-S)	Chemical English name: High Temperature Solvent Resistance Vinyl Ester Resin (SWANCOR 977-S)
Name name, address and telephone number: Shangwei (Shanghai) Fine Chemical Co., LTD. Address: No.618, Songsheng Road, Songjiang District, Shanghai Tel: 86-21-57746183	
Enterprise emergency telephone / Fax: 400-6267911	
Product recommendation and restricted use: no information	
E-mail : shanghai@swancor.com.cn	Postcode: 201600

## 2. Hazard-based overview

The GHS hazard category	<ul style="list-style-type: none"> <li>● Flammable liquid, category 3;</li> <li>● Skin corrosion / irritation, category 2;</li> <li>● Severe eye injury / eye irritation, category 2;</li> <li>● Germ cells to mutation, category 2;</li> <li>● Carcinogenicity, category 2;                      One contact, category 2;</li> <li>● -specific target organ system toxicity                      Repeated contact, category 2;</li> <li>● -specific target organ system toxicity</li> <li>● Hazard to the water environment — Acute aquatic biological toxicity, category 3;</li> <li>● Hazard to the water environment — Chronic aquatic biological toxicity, category 3;</li> </ul>
Tag elements	<p>figurative graph:</p> <div style="text-align: center;">  </div> <p>Warning words: dangerous</p> <p>Hazard description: flammable liquid and steam Cause skin, skin irritation Cause the eyes, the eye stimulation A heritable defect is suspected Suspected cancer Suspected harm to fertility or the fetus Long-term exposure may affect the liver, kidney, and blood systems Harmful to the aquatic life</p> <p>Prevention Note: Keep the container in a well-ventilated place Do not inhale gas / smoke / vapor / fog Wear appropriate protective clothing Avoid long, period exposure</p> <ul style="list-style-type: none"> <li>● Preventive measures: maintain a ventilated environment, pay attention to wear appropriate protective clothing and breathing masks and gloves</li> <li>● Accident response: Emergency treatment according to different conditions, refer to the fourth part of first aid measures. If you have any doubt, please seek medical advice immediately.</li> <li>● Secure storage: Store in a cool, dry and well-ventilated place, avoid direct sunlight, stay away from heat source and fire source.</li> <li>● Waste disposal: disposal in accordance with the current regulations.</li> </ul>
Physical and chemical hazards	Flammable liquids and vapor, causing skin irritation and eye irritation
health hazard	Long-term exposure may affect the liver, kidney, and blood systems
environment hazards	Harmful to the aquatic life
Overview of the emergency situations	Put the container in a well-ventilated place, do not inhale gas / smoke / steam / fog
Other harm	not have

### 3. Composition / composition information

component	Concentration or concentration range	CAS No	chemical property
Polymer (Polymer)	65%	036425-18-8	

Styrene (Styrene)	35%	00100-42-5	
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### 4. First-aid measures

give first aid treatment	Inhalation: Remove the source or move the patient to fresh air to keep breathing and rest. Seek medical advice immediately if you feel unwell.
	Skin contact: remove excessive contaminated chemicals as soon as possible, use water and non-frictional soap and thoroughly flush the affected area for more than 20 minutes, remove contaminated clothes, shoes and leather products (such as strap, belt) in the flushing water, if skin irritation or rash, seek medical attention immediately.
	Eye contact: remove the excessive contaminated chemicals as soon as possible, open the eyelids, immediately rinse with warm water, remove the contaminated area for more than 20 minutes, be careful not to let the contaminated water affect other eyes or faces, and seek medical treatment immediately.
	Feed: if the patient is about to or has lost consciousness or spasm, do not feed anything through the mouth, do not vomit, let the patient drink 240~300, milliliter of water to dilute the substances in the stomach, if spontaneous vomiting, let the patient lean forward to avoid the harm of inhaling vomit, repeatedly let the patient gargle, and seek medical treatment immediately.
Most important symptoms and harmful effects	
Advice to protect the rescuer	Wear protective gloves to avoid exposure to contaminants.
Special tips for the doctor	

### 5. fire protection

annihilator	Chemical dry powder, carbon dioxide, and water
Especially dangerous	In case of high heat, open fire or contact with oxidant, there is a risk of combustion
Notes for fire fighting	Fire fighters must wear air respirators and full fire suits to put out the fire in the upwind. Cool the storage tank or container exposed to the fire site with water mist, and remove the container from the fire site without endangering the safety of personnel.
preventive measure	Fire personnel must wear air breathing apparatus and full-body fire suits.

### Vi. Emergency treatment of leakage

Protective measures, protection, equipment and emergency handling procedures for operators	Use of personal protective equipment. Keep away from overflow / leaks and at the upper hand to ensure adequate ventilation. The seat belt should be circled in the leakage area to control the entry of non-relevant personnel.
Environmental protection measures	Prevent access into sewers, ditches, or enclosed spaces.
The reception and removal methods of the leaking chemicals and the disposal materials used	Do not touch the leak, try to prevent or reduce the leak under the safety permit. Block the discharge with mud, soil, sand or absorbent that does not react with the drain. In case of major leakage, dike control, and connect fire, safety, environmental protection and emergency treatment units and suppliers for assistance. Attures or collections should be discarded immediately according to appropriate laws and regulations.

### Vii. Operation, disposal and storage

Operation note, meaning matters	<p>1. Consider installing temperature detection and alarm system; for leakage, leakage or ventilation loss, report immediately.2. Remove all ignition sources, stay away from hot and combustible substances, and post non-smoking signs.3. If it is not deployed or packaged in a closed system, be sure to connect the mixing container with the receiving device and the container.4. Do not cut, weld or drill into empty containers, barrels or delivery lines unless it is determined that the vapor or liquid has been completely removed.5. Non-spark ventilation system, qualified explosion-proof device and safe electrical system shall be used in the use area.6. Do not dispose together with incompatible substances, or pour contaminated substances back into the original container.7. The container should be marked with the date of storage, commissioning and abandonment, and should not be kept close at any time and avoid damage.8. Empty containers may contain residues, and they may also have the same harm.9. Use the minimum</p>
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# Technical specification for chemical safety

	<p>amount of use in well-ventilated places as far as possible, and avoid producing steam or fog drops during operation.10. Store it in a cool, dry and well-ventilated place, avoid direct sunlight, and stay away from the heat source and fire source.</p> <p>11. The storage temperature control shall not exceed 32°C.</p>
Store notes, meaning	<p>1. No fireworks or other fire sources are allowed, whether in indoor or outdoor storage areas.2 . Keep away from oxidants, corrosions and other incompatible substances.</p> <p>3. Appropriate warning signs shall be posted in the storage area, to check the leakage or damage regularly, and the fire extinguishing agent and leakage treatment substances available in the device near the storage area.4. Check all storage containers to determine their appropriate marks and no damage.</p> <p>5. Keep the container tight and limited storage.</p> <p>6. Remove all ignition sources and keep away from heat and incompatibilities.7. Wear appropriate personal protective equipment when necessary to avoid contact with this chemical or contaminated equipment.8. Store the chemicals at the storage temperature recommended by the chemical manufacturer or the supplier, and a temperature detection alarm can be installed if necessary to warn whether the temperature is too high or too low.9. Avoid a large amount of storage indoors, as far as possible in isolated fire buildings.</p> <p>10. The storage area shall be isolated from the general operation area and far away from the manufacturing elevator or entrance and exit.</p>

## VIII. Contact control / personal protection

Occupational connection, touch the limit value	Component name	Standard source	type	standard value	remarks
	styrene	Eight hours of daily time volume	PC-TW A	50mg /m 3	
		Short time amount	PC-S TEL	100mg/m 3	
Biological limits	Component name	Standard source	Biological monitoring, measurement indicators	Biological limits	dwel time
engineering control	Use local exhaust device and seal the process if necessary to control droplets and steam without direct contact. Use separate ventilation systems that do not spark and ground. The exhaust port goes directly to the outside area. Provide sufficient fresh air to replenish the air extracted by the exhaust system. Install the shower and eye washer simultaneously.				
Individual protective equipment	<p>Respiratory system protection:, chemical filter tank respiratory protective device containing machine steam filter tank; or air supply respiratory protective device.</p> <p>Hand protection: anti-seepage gloves. For more than 8 hours, it is recommended to use 4H or Barricad e (trade name); for more than 4 hours, polyethylene glycol, ferroflorone, fluorinated elastomer material can be used.</p> <p>Eye protection: splash-safe chemical safety goggles or face shield. Eye washing equipment.</p> <p>Skin and body protection: rubber clothing, apron and work boots.</p>				
health measure	Smoking, eating and drinking are prohibited in the workplace. Wash your hands thoroughly after handling this object. Take off the contaminated clothes as soon as possible after work, and then wear or discard them after washing, and the laundry personnel must be informed of the harm of pollutants. Work work, shower and change clothes. Keep the workplace clean and maintain good hygiene habits.				

## Ix. Physical and chemical characteristics

Appearance and traits	Light yellow, clear liquid	Octanol-Water Distribution coefficient (lgP)	insignificance
pH price		critical temperatures (°C)	
melting point (°C)	-30.6°C	Critical Pressure (MPa)	
boiling point (°C)	145°C.2	autogenous ignition temperature (°C)	490°C
flash point (°C)	31°C (Test method: closed cup)	decomposition temperature (°C)	
upper explosive limit	1.1%-6.1%	Heat of combustion (kJ / mol)	
smell		evaporation rate	
Saturated vapor pressure (kPa)	4.5mmHg@20°C	Flammability (solid, gas)	inflammable
Relative density (water as in 1)	1.08 ± 0.02 (water =1)	Viscosity (mPa · s)	750±150@25°C
Relative steam density (air as in 1)	3.6g/l	Odor threshold (mg / m <sup>3</sup> )	
solubility	Insoluble in water, soluble in organic solvents such as acetone.		

## X, Stability and reactivity

stability	Generally stable
Dangerous reaction	<ol style="list-style-type: none"> <li>1. Metal salts, peroxides, oxidants or strong acids may trigger their polymerization.</li> <li>2. Oxygen and oxidant: increase the harm of fire and explosion, and form explosive peroxides.</li> <li>3. alkali metals, graphite compounds, peroxides, metal brine, azoisobutyl; starting their polymerization reaction.</li> <li>4. Strong acid (sulfuric acid, oil, chlorosulfonic acid): it will increase the temperature, pressure, and increase the fire and explosion hazards.</li> </ol>

Conditions that should be avoided	<ol style="list-style-type: none"> <li>1. The boycott concentration is too low or ineffective.</li> <li>1. Light or heat, especially above 65°C.</li> <li>2. Metal salts, peroxides, oxidants, or strong acids may cause their polymerization.</li> <li>3. Heat, spark, open fire, lead fire source.</li> </ol>
Ban the match	<ol style="list-style-type: none"> <li>1. Oxygen and oxidants.</li> <li>2. Alkine metals, graphite compounds, peroxides, metal halines, azoisobutyl.</li> <li>3. Strong acid (sulfuric acid, oil, chlorosulfonic acid).</li> <li>4. Dingji lithium.</li> <li>5. Halogenin.</li> </ol>
The breakdown product of the hazard	Phenyl ethylene dilute oxide.

## Xi. Toxicology information

acute toxicity	LD50: 5000mg / kg (rat, devoured)
	LC50: 24,000 mg / kg (rat, inhalation)
route of exposure	

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symptom	Skin irritation or corrosion	No human associations were reported. With a moderate irritation to the skin of the experimental animals.
	Eye irritation or corrosion	Spilsplash into the eyes caused moderate to severe irritation but recovered within 48 hours.
	Breathing or skin allergy	It can skim the skin and be absorbed by the skin, and long-term contact may cause dermatitis.
	Germ-cell mutability	non-avaible
	carcinogenicity	IARC oncogenicity Comment: Positive animals, no reliable human compliance data.
	genotoxicity	
	Specific target organ system toxicity in primary contact	May cause dermatitis, cause red or dry skin.
	Specific target organ system toxicity by repeated exposure	May affect the liver, kidney, and blood system. It may affect the hearing, balance, color new knowledge, nerve conduction and mental state.
inhalation hazard	Stimulation of the respiratory tract is the most common one. High concentrations can resist the central nervous system, causing lethargy, headache, confusion, loss of coordination and unconsciousness. Due to low volatilization, no fatal reported.	
Slow toxicity or long-term toxicity		

## Xii. Ecological information

Ecological toxicity	LC 50 (Fish): 25.1-74.8mg / 1 / 96H EC 50 (Aquatic invertebrates): - Complex coefficient of biological enrichment (BCF): 13.5
Persistence and degradability	1. 95% of the styrene in the landfill soil decomposes within 16 weeks, and 87% of the sandy soil decomposes. The amount of decomposition is determined by the amount of carbon dioxide produced. 2. When released into the water, it will be biodecomposed, and it is also possible to adsorb on small particles or precipitates in the water.3. When released into the atmosphere, it will quickly react with hydrogen free radical and ozone, with the half-life of 3.5 and 9 hours, respectively. Half-life (air): 0.9~7.3 hours Half-life (water surface): 336~672 hours Half-life (groundwater): 672~5040 hours Half-life (soil): 336~672 hours
Biological enrichment or bioaccumulability	About 80% to 97% of the styrene will be excreted in the urine, and the styrene absorbed within 4 days will be removed.
Mobility in the soil	When released into the soil, it is biodecomposed.
Other environmental harmful effects	----

## Xiii. Waste disposal

Abandoned, placement method	1. Handling in accordance with the current laws and regulations. 2. Store the waste to be treated according to the storage conditions. 3. Consider using a specific incineration method.
Waste chemicals	Handle in accordance with current regulations
Pollution packaging	Handle in accordance with current regulations
Waste notes, meaning matters	

## Xiv. Transportation information

UN Dangerous Goods Number (UN Number)	1866
The United Nations transport name	flammable liquid
The United Nations risk, risk	III

classification	
Packaging category	III
packing mark	
packing method	
Marine Pollutants (Yes / No)	deny
Transportation note, meaning matters	During railway transportation, it shall be installed strictly in accordance with the dangerous goods loading table in the Dangerous Goods Transport Rules of the Ministry of Railways. Transport vehicles should be equipped with the corresponding variety and quantity of fire-fighting equipment and leakage emergency treatment equipment. It is best to be transported in the morning and evening in the summer. The tank (tank) car used in transportation should have a grounding chain, and a hole partition can be set in the tank to reduce the static electricity generated by shock. It is strictly prohibited to mix and transport with oxidants, acids and edible chemicals. Transportation should be exposed, rain, prevent high temperature. The stopover should be far away from the fire, heat source and high temperature area. The exhaust pipe of the vehicle carrying the article must be equipped with a fire resistance device, and the use of mechanical equipment and tools easy to generate sparks is prohibited. Highway transport should be driven according to the prescribed route,

	Do not stay in residential areas and densely populated areas. Sliding shall be prohibited during railway transportation. It is strictly prohibited to transport with wooden ships and cement ships in bulk.
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### Xv. Regulatory information

Laws, regulations, rules, and standards, and the corresponding provisions on the management of the chemicals	<p>The following laws, regulations and standards have made corresponding provisions on the safe use, storage, transportation, loading and unloading, classification and marking of chemicals:</p> <ol style="list-style-type: none"> <li>1. Production Safety Law of the People's Republic of China;</li> <li>2. The Law of the People's Republic of China on the Prevention and Control of Occupational Diseases;</li> <li>3. Environmental Protection Law of the People's Republic of China;</li> <li>4. Regulations on safety Management of Hazardous Chemicals;</li> <li>5. Safety production License regulations;</li> <li>6. Classification and marking of commonly used hazardous chemicals;</li> <li>7. Catalogue of hazardous chemicals.</li> </ol>
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### 16. Other information

Writing and revised information	This revised SDS has revised the full text format according to the requirements of GB / T 16483-2008 and GB / T 17519-2013.	
Abbreviations and acronyms	PC-TWA: Time-weighted average allowable concentration, with the average allowable contact concentration of 8h working days and 40h working weeks. PC-STEL: Short exposure allowable concentration allowing a short (15min) exposure following PC-TWA. ACGIH: The US Government Conference of Industrial Hygienists	
reference documentation	Environmental Data Manual of Chemical Toxicity Regulations, China Environmental Science Press China Chemicals Safety Planning Agency, EC, International Chemical Safety Card Manual	
disclaimer	The information in this SDS applies only to the products specified, not, except as specified, for the mixture of the product with other substances. This SDS provides only information on the applicable safety of the product for those with appropriate professional training for the product. The user of this SDS must make an independent judgment on the applicability of the SDS under special applicable conditions. In special applicable occasions, the writer of this SDS is not responsible for any injury caused by the application of this SDS.	
Window position	Name: Shangwei (Shanghai) Fine Chemical Co., LTD	
	Address / Tel: 86-21-5774618 3, No.618, Songsheng Road, Songjiang Industrial Zone, Shanghai	
lister	Professional Title: Synthetic engineer	Tabator: Zhang Keshao
Tab date	2017-01-03	