



# Safety Data Sheet


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## Section 1 - Product and Company Identification

Product name : Stripper-SBM-31
Other names : --
Product use : Use for TFT-LCD manufacturing process. Remove excess photoresist after etching process was done.
Supplier's name : San Fu Chemical Co., Ltd., Shan Hua Plant
Supplier's address : 1,Sec.1,Huanyuan E..Rd.,Liuying Dist.,Tainan, Taiwan 736.
Supplier's phone : 886-6-6231821                      Emergency phone : 886-6-6231821
FAX. : 886-6-6231822

## Section 2 - Hazards Identification

Classification :
1. Flammable Liquids    Category 4
2. Acute toxicity    Category 4 (Ingestion)
3. Acute toxicity    Category 4 (Skin)
4. Serious eye Damage/eye irritation                              Category 1
The Most Important Hazards and effect
Label element :
■ Hazard symbol : Corrosion 、 Exclamation mark

■ Signal word : Danger
Hazard statement :
1. May corrode metals
2. Harmful in contact with skin
3. Cause serious eye damage
4. May cause respiratory irritation
Precautionary statement :
1. Keep container tightly closed
2. Do not inhale gas/vapor/fog
3. Wear goggles/masks
4. In case of contact with eyes, flush with plenty of water, and seek medical attention immediately.
Others Hazard : /

## Section 3 – Composition /Information On Ingredients

Mixture :

Component or impurities contributing to the hazard	Concentration or concentration range	CAS No.
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Ethanolamine (MEA)	15~25%	141-43-5
Diethylene glycol monobutyl ether for synthesis (BDG)	45~65%	112-34-5
Water	15~25%	--
Additives	≤5%	--

## Section 4 - First Aid Measures

### The First-aid Information :

- Inhalation :
  1. Remove the pollutant, or leave area of exposure to breath fresh air immediately
  2. If not breathing, provide artificial respiration or oxygen by trained personnel. Avoid providing aid to give mouth-to-mouth resuscitation.
  3. Get medical attention immediately.
- Skin Contact :
  1. Avoid direct contact with chemicals, wear impervious gloves if necessary.
  2. In case of contact, immediately flush skin with gentle water for at least 20 minutes till the contamination is removed.
  3. Remove contaminated clothing, shoes, and leather product during flushing.
  4. Seek medical attention immediately.
  5. Wash the contaminated clothing, shoes, and leather product before reuse or dispose.
- Eye Contact :
  1. If necessary, wear impervious gloves to avoid contacting with chemicals.
  2. Immediately flush eyes with warm water for at least 15 minutes, lifting lower and upper eyelids occasionally.
  3. Try to not contaminate unaffected area.
  4. If pain persists or recurs, flush repeatedly and get medical attention immediately.
- Ingestion :
  1. Contact the local toxicology center or physician immediately.
  2. If the patient is unconsciousness, do not induce vomiting or feed anyliquid food.
  3. If the patient spontaneous vomiting, keeps the patient's head lower than the hip in case of inhaling the vomiting materials.
  4. If the patient is unconsciousness, turn the patient's head to the right side.
  5. Refer for medical attention immediately.

### The Most Important Symptoms and Hazardous Effects :

Persons with pre-existing skin disorders or impaired liver, kidney, and pulmonary function may be more susceptible to the effects of this material.

Protection of First-aiders : Dress C Class protective apparatus and take first aid in a safety area.

Notes to a Physician : If the patient swallow, consider gastric lavage.



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## Section 5 - Fire Fighting Measures

Extinguishing media : Water spray 、 dry chemical 、 alcohol foam 、 or carbon dioxide.
Specific hazard : 1. The steam will accumulate in the lower-lying areas. 2. Airtight container in the fire heat may rupture.
Specific Fire-fighting Procedure : 1. Evacuate to the safety place or protective place to put out of fire. 2. Stay in the upwind area to avoid the dangerous vapor and poisonous decomposed substance. 3. Before fire fighting, stop the leakage of the substance. If there's no danger and unable to stop leaking, let the fire burn. If fire fighting before stopping the leakage, the vapor and the air may generate into the explosive mixture and ignite again. 4. Separate the non-burning substance and protect the staffs. 5. If safe to do so, move the undamaged containers from fire area. 6. Cool tanks or containers with water spray. 7. May be useless using water spray to put out a fire, but dilute the leakage and flush away from the ignition. 8. If the leakage doesn't get burn, use water spray to disperse the vapor and protect the staffs who are attempting to stop leaking. 9. Useless to put out a fire with water stream. 10. Large fire within a large area, use unmanned operating spray controller or self swinging fire water monitor. 11. Try to evacuate from the fire area and let the fire burn out. 12. Away from the storage tank. 13. Evacuate immediately if the alarm of the Safety valve starts or changes colors due to fire. 14. Wear no special protective equipments personnel are not allowed to enter.
The protection of firefighters : Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

## Section 6 - Accidental Release Measures

Personal Precautions : 1. Isolate the disaster area and prohibit the unauthorized members from entering. 2. Members should stay at the upper hand area and keep away from the low-lying areas.
Environmental Precautions : 1. Avoid the heat, flame, sparks and other ignition. 2. Remove ignition sources.
Methods for Cleaning up : 1. Wash the contaminated materials and area. 2. Use liquid as the absorbent to absorb the contaminated material. 3. Small spill: Use the sand, Vermiculite or other inert material to absorb the leakage. 4. Large spill: Collected by embanking surrounds or digging. Use pump to transfer waste disposal to the tank or specific collector for recycle or manage by disposal sites.

## Section 7 - Handling and Storage

Handling : 1. Operate in the well-ventilated place.
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2. Prevent the materials accumulated at depression or drainage holes.
3. Do not enter the confined space.
4. Avoid smoking, expose to naked light or ignition sources.
5. Avoid not contacting incompatible substances.
6. While operating, do not smoke or diet.
7. Seal the vessels tightly after the task.
8. Avoid making the physics damage of the container.

#### Precautions :

1. The substance will accumulate per oxidant, which will make damage if volatile, distillation or enrichment processing.
2. Make sure to finish the chemical substances before it be oxidized when adopt this kind of per oxidant substances.
3. The authorized person has to manage the substances and label the per oxidation chemical compounds and its expiration date. The chemical substances have to be deoxidized or discarded.
4. Label the receiving date on the bottle; note the date every time when open it.
5. The safety storage duration of unopened product is 18 months; the opened product is limited not to use over 12 months.
6. Avoid personal contact, inhalation included.
7. Wear personal protective apparatus if situated in over exposed risk.
8. Wash hands with soaps and water each time finished the work.
9. Work suits should be washed separately.
10. Keep good professional habits.
11. Detect the air quality periodically to make sure the working environment safety.

#### Storage :

##### Adequate containers :

1. Stored in metal cans or drums.
2. Check the containers if labeled clearly and without leakage.

##### Store incompatible substances :

1. In some cases, glycol ethers may form peroxides.
2. In the presence of alkali or alkali salt, temperature increasing may enhance the potential out-of-control reaction.
3. Avoid contacting aluminum, it may release hydrogen.
4. Avoid reacting with oxidants.

##### Storage demands:

1. Store in the original vessels.
2. Keep the vessels sealed tightly.
3. Abandon smoking, exposed to naked light, heating sources, or ignition Sources.
4. Stored in cool, dry and well ventilated places.
5. Store away from incompatible substances and the food containers.
6. Avoid physical damage and check the leakage periodically.

## Section 8 - Exposure Controls & Personal Protection

#### Engineering measures :

1. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
2. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.



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Control parameters			
TWA	STEL	Ceiling	Biological standards
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<b>Personal protective equipment :</b> <ul style="list-style-type: none"> <li>■ <b>Respiratory Protection :</b> <ol style="list-style-type: none"> <li>1. Below 50ppm: Wear continuous-flow mode respirator with oxygen contained breathing apparatus, a full-face organic vapor respirator or chemical cartridge respirator. Wear a NIOSH approved full-face piece self-contained breathing apparatus.</li> <li>2. Unknown concentration: Portable pressured gas mask, Portable pressured gas mask with air provider.</li> <li>3. Escape: mask with organic filter can, portable protective breathing gear.</li> </ol> </li> <li>■ <b>Hand Protection :</b> Wear impermeable rubber gloves made of butyl rubber, chloroprene rubber, nitrile rubber, Saranex, Viton, 4H.</li> <li>■ <b>Eye Protection :</b> Wear chemical splash goggles and face shield. Eyewash should be nearby.</li> <li>■ <b>Skin and Body Protection :</b> Wear appropriate protective clothing, protective boots. Emergency shower should be nearby.</li> </ul>			
<b>Hygiene measures :</b> <ol style="list-style-type: none"> <li>1. After work, remove the contaminated clothes as quickly as possible. Throw away or wash clothes thoroughly before wearing again. Notify the laundry personnel of the danger of the contaminated clothes.</li> <li>2. Smoking and eating is strictly prohibited in the work site.</li> <li>3. Wash hands thoroughly after handling this substance.</li> <li>4. Keep the work area clean.</li> </ol>			

## Section 9 - Physical & Chemical Properties

Appearance : Liquid. Colorless. Clear	Odor : Ammonia odor. Olfactory Threshold : --
Colour : --	Melting Point:--
pH value : >12	Boiling point/boiling range : 165°C ~199°C
Flammability: --	Flash point : >95°C
Decomposition temp : --	Test method : ASTM D 3828 ; close
Autoignition temp : --	Explosion properties : --
Vapor pressure : 4 mmHg @20°C	Vapor density : --
Density : 0.97±0.05 ( at 25°C )	Solubility : Soluble in cold water.
log Kow : --	Evaporation Rate : <1

## Section 10 - Stability & Reactivity Data

Stability : Stable
<b>Possible hazardous reactions under specific conditions :</b> <ol style="list-style-type: none"> <li>1. Acid ( Strong ) ,Base ( Strong ) : incompatible.</li> <li>2. Oxidants ( Strong ) : Fire or explosion disaster.</li> </ol>



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Conditions to avoid :

1. Heat Flame, Sparks or other ignition.
2. Heating the vessels may cause the explosion.

Materials to avoid : Acid, Base, Oxidants

Hazardous decomposition products : Heat decomposition will produce Carbon oxides.

## Section 11 - Toxicological Information

Route of exposure : Skin, inhalation, ingestion, eyes

Symptoms : Irritation, sore throat, cough, sneezing, headache, nausea, dizziness, drowsiness, loss of consciousness, pulmonary edema, red or rough skin, skin, eyes red and sore, vomiting, diarrhea, seizure, cyanosis, rapid breathing, tachycardia, low blood pressure, muscle pain, bone marrow suppression, unconsciousness, coma, liver and kidney damage.

Immediate Toxicity :

### ■ Skin Contact :

1. Direct contact may cause slightly stimulation, and lead to skin red, rough, and skin.
2. Long-term exposed to the substances may cause temporarily uncomfortable.
3. Contact to skin will damage health. If absorbed through skin may cause Systemic effect.
4. If the chemical compounds intrude through open wounds, scratches or wear and tear of the skin into the blood flow, which may result in systemic injury.
5. Check the skin before using the materials and make sure all traumatic metropolises already have appropriate protection.

### ■ Inhalation :

1. Because of the low vapor pressure, the material does not have inhalation hazard, if inhaled, it may be irritant to the chest and lungs, and cause coughing, sneezing, headache, sore throat, and even disgusting.
2. High concentrations may cause central nervous system suppression, headache, dizziness, dizzy, lethargy, loss of consciousness and pulmonary edema.
3. The material may cause by intravascular hemolysis, bone marrow suppression and delayed renal injury.
4. The material may cause respiratory irritant to specific people whose body will react to the irritation and damage the lung.
5. High temperature will increase the inhalation hazard of the material.
6. It had been published that two members proceed the tasks with Diethylene glycol monobutyl ether, took alcoholic drinking when painting, which lead to the damage of kidney and liver.

### ■ Ingestion :

1. Ingest the material is harmful to personal health. Ingest the material may cause nausea, vomiting, diarrhea, and Central nervous system inhibition which will lead to headache, dizziness, sleepiness, seizure.
2. Large amount of intake the material may cause toxic, which lead to kidney damage, and influence the blood flow, thus make cyanosis, rapidly breathing and hear beating, low blood pressure, muscle pain, bone marrow suppression, unconsciousness, coma, even death.

### ■ Eye:

1. May cause irritant, causing red eyes, pain, and transient corneal injury.
2. There is evidence shows that the material may be irritated to specific people, and is harmful after drop into eyes for over 24 hours.
3. May cause serious inflammation, corneal injury.



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4. To the progressive corneal injury, if not timely and properly treated may cause permanent vision damage. <ul style="list-style-type: none"><li>● LD<sub>50</sub>:--</li><li>● LC<sub>50</sub>: --</li></ul>
Specific effects : <ol style="list-style-type: none"><li>1. Excessive and repeat expose to the material may damage the liver and kidney.</li><li>2. Repeat or long-term expose skin or eyes to the substance may cause dermatitis or conjunctivitis.</li></ol>

## Section 12 - Ecological Information

Ecotoxicology : <ul style="list-style-type: none"><li>■ LC<sub>50</sub>(fish) : --</li><li>■ EC<sub>50</sub>(Aquatic Invertebrates) : --</li><li>■ Bioconcentration factor (BCF) : --</li></ul>
Persistence and degradability : <ul style="list-style-type: none"><li>■ Half-Life (Air) : --</li><li>■ Half-Life (Water surface) : --</li><li>■ Half-Life (Groundwater) : --</li><li>■ Half-Life (Soil) : --</li></ul>
Bioaccumulative potential : --
Mobility in soil : --
Other adverse effects : --

## Section 13 - Disposal Considerations

Methods of disposal : <ol style="list-style-type: none"><li>1. Consult the relevant regulation to deal with.</li><li>2. Evaluate the possibility of reduction, re-use, recycling, waste (if all methods do not work). If the material is not used or pollutant, recycle it; if contaminated, recycle it by filtration, distillation or other methods. Check the expiration date and notice that if the properties had been changed, do not recycle it.</li><li>3. Do not let washed water or processed equipment to enter drain system.</li><li>4. The washed water should be collected and processed and then discard.</li><li>5. If want to discharge the discarded materials into the sewer, must follow the relevant laws. If any questions, query the local authority units.</li><li>6. Retrieve as much as possible or consult manufacturers, if no suitable processing company, ask the local waste processing unit.</li><li>7. Buried or incinerated residual material in qualified places.</li><li>8. If possible, recycle the vessels or discard the vessels in qualified landfill.</li></ol>
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## Section 14 - SDS Transport Information

UN classification number : 2491
Proper D.O.T Shipping Name: --
Hazard Class: Category 8 Corrosive substances
Packing Group : --



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Marine pollution : --

Specific precautionary transport measures and conditions : --

## Section 15 - Regulatory Information

Regulations :

1. Occupational Safety and Health Act
2. Regulations for the Labelling and Hazard Communication of Hazardous Chemicals
3. Organic solvent poisoning prevention rules.
4. Road Traffic Safety Regulations
5. Industrial Waste Storage and Disposal Regulations
6. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations.
7. Assessment and Classification Administration of Hazardous Chemicals

## Section 16 - Other Information

Literature references	GHS SDS Database	
Prepared by	Supplier : San Fu Chemical Co., Ltd. Shan Hua Plant	
	Address : 1,Sec.1,Huanyuan E..Rd.,Liuying Dist.,Tainan, Taiwan 736.	
	TEL : 886-6-6231821	FAX : 886-6-6231822
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Remarks	Symbols Explanations: "--" No information is available at this time. "/" Not applicable to this substance.	
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