Safety Data Sheet

Section 1 - Product and Company Identification

Product name：Stripper FA-10
Other names：--
Product use：Removing photoresist residual used in TFT-LCD manufacturing processes.
Supplier's name：San Fu Chemical Co., Ltd.
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. Acute toxicity — Category 5 (ingestion)
2. Serious eye Damage/eye irritation — Category 2A
3. Specific target organ toxicity - single exposure — Category 3
4. Reproductive toxicity Category — Category 1B

The Most Important Hazards and effect

Label element：

- Hazard symbol：Exclamation mark Health Hazard

- Signal word：Danger

Hazard statement：

1. Flammable liquid
2. Harmful if contact with skin
3. Cause serious eye damage
4. Suspected of fertility or fetal harm

Precautionary statement：

1. Do not inhale gas/smoke/steam/fog
2. Wear goggles/masks
3. Only use in well-ventilated areas.

Others Hazard：/

Section 3 – Composition /Information on Ingredients

Mixture：

Component or impurities contributing to the hazard	CAS No.	Concentration or concentration range
Monomethyl formamide	123-39-7	>80 %
Monoethanolamine	141-43-5	5~20 %

Section 4 - First Aid Measures

The First-aid Information：

- Inhalation：Remove pollution sources or move patient to area with plenty of fresh air. If there is difficulty in breathing, let trained personnel provide oxygen supply. If the person is not conscious give artificial respiration. Do not use mouth-to-mouth resuscitation. Seek immediate medical attention.
- Skin Contact：Wear leak-proof gloves to prevent contact with this chemical substance. In case of contact, immediately flush skin with plenty of water for at least 20 to 30 minutes. Get medical aid immediately.
- Eye Contact：In case of contact, immediately flush eyes with plenty of water for at least 20 minutes, lifting eyelids occasionally. Try not to contaminate the unaffected area. If still feel irritation, flush repeatedly and get medical attention immediately.
- Ingestion：If unconscious, do not feed anything through the mouth. If conscious, let the patient rinse his/her mouth completely with water. Call a physician immediately.

The Most Important Symptoms and Hazardous Effects：

1. burn

Protection of First-aiders：

1. Wear Class A protective equipment to enter the disaster area carry out patients.
2. Wear Class C protection equipment and apply first-aid in safe areas.
3. Do not use mouth-to-mouth resuscitation.

Notes to a Physician：--

Section 5 - Fire Fighting Measures

Extinguishing media：dry sand, dry chemical, alcohol foam, or carbon dioxide.

Specific hazard： --

Specific methods：

1. Retreat and extinguish the fire from a safe distance or protected area.
2. Place at upwind position to avoid hazardous vapor and toxic resolvent.
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. Use water mist to cool the storage tanks and containers exposed in the fire site.
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 spill is not burning, spray water mist to disperse the vapor and protect the personnel attempting to contain the spill.
9. It may be 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. Only allow personnel wearing special protective gear to enter.

The protection of firefighters： 1. Firemen require wearing full protective clothing and NIOSH-approved self-contained breathing apparatus. (if necessary, add flash-proof aluminum cover coats)

Section 6 - Accidental Release Measures

Personal precautions： 1. Restrict personnel from entering the polluted area until completely cleaned. 2. Make sure that only trained personnel are allow to clean up. 3. Wear appropriate personal protection equipment. 4. Evacuate the downwind personnel.
Environmental precautions： 1. Ventilate area of leak or spill. 2. Extinguish or remove all fire sources.
Methods for cleaning up： 1. Do not touch the leaking substance. 2. Prevent the spilled substances from entering the drainage, canals, or closed spaces. 3. If safe to do so, try to stop or reduce the spillage. 4. Surround the leakage with sand, soil, or other adsorbing substances that will not react with the leaking substance. 5. Small spill: Absorb with non-combustible material. Contaminated absorbents are as dangerous as the spillage and must be kept in properly covered and labeled containers. Small amount of leakage can be diluted with large amount of water. 6. Large Spill: Contact the fire fighting unit, emergency control unit and supplier for help.

Section 7 - Handling and Storage

Handling： 1. Staffs should under the training in hazardous info and safety use of the related substance. 2. Remove all the sources of ignition and away from the heat or other incompatible substance. 3. Place “Smoking Prohibited” signs. 4. This substance will accumulate electrostatic charges. Precautions must be taken to avoid possible hazards. Proper grounding of ALL processing equipments (i.e. tanks, containers, or pipes) is required. 5. While transferring the substance, operate in low flow rate, longer operation-time, and maintain low temperature if possible. 6. Transferring materials in an open system, make sure that delivering and receiving containers are either grounded or at same potential. 7. Use of anti-sparkle and anti-explosion mechanical ventilation system. 8. Avoid producing vapor or mist. Operate in well-ventilated area. Handling amount of usage should be kept to a minimum. Separate the working area and storage place. 9. Wear the proper personal protective gears to avoid contacting with the chemical. 10. Do not use with incompatible material, e.g. strong oxidizer, deoxidizer. 11. An eyewash and/or emergency shower should be available in working area.
Storage： 1. Unblock the exit routes. 2. Consider installing the spill detection and warming system. 3. Should have the leaking emergency equipments and appropriated fire equipments.

4. Store in the compatible containers. Do not spill while dispensing the substances.
5. The container should be labeled. Keep containers closed when not in used. Avoid physical damage to containers.
6. Keep container in a cool, dry, well-ventilated area.
7. Avoid all possible sources of ignition (spark or flame).
8. Keep away from sunshine.
9. Ensure the storage in an isolated fireproof building.
10. The flooring should be impermeable to the product.
11. Make a threshold at the door and build a slope or a groove in front of the door to enable the fluid leakage to be emitted to a safe place.
12. Clearly labeled in the entrance of the storage place, no obstacle. Only allowed trained personnel access.
13. Separate the working area and storage place. Away from the elevator and main entrance of the building/room.
14. Keep MSDS, a fire extinguisher and cleaning equipment nearby.
15. All equipment should be regularly checked and maintained.
16. All containers should be regularly checked and maintained for the label and damage.
17. Control the storage in a limited amount.
18. Ground barrels that store the liquids.
19. The barrels that store the flammable liquids should install the pressure reducing valve and vacuum relief valve.
20. Store in the suggested temperature. If necessary, install temperature alarm.
21. Avoid store indoor in large quantities.
22. Anti-flame device should be installed in the exhaust pipe of the tanks.
23. The storing basin shall be based on the ground with its base completely sealed from leakage, and shall be surrounded by a fluid-protective dike capable of carrying the entire volume of storage.
24. Do not store with acidic compounds.

Section 8 - Exposure Controls & Personal Protection

Engineering measures：

1. Whenever possible, the use of local exhaust ventilation or other engineering controls (e.g. isolating operation place) is the preferred method of controlling exposure to airborne particulate.
2. Emergency shower/eyewash should be nearby.

Control parameters			
TWA	STEL	Ceiling	Biological standards
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Personal protective equipment：

■ Respiratory Protection：

1. Under 30ppm: Anti-ethanolamine filter type, powered air-purifying type, air-supplying, type and self-contained breathing apparatus.
2. Unknown concentration: Positive pressure self-contained breathing apparatus, positive pressure full-face air-supplying respirator supplemented by positive pressure self-contained breathing apparatus.
3. Escape: Anti-ethanolamine filter type gas mask, escape-type self-contained breathing apparatus.

■ Hand Protection：

Wear leak-proof gloves made of butyl rubber, neoprene rubber, nitrile rubber, Viton and 4H. ■ Eye Protection：Wear chemical safety goggles and masks. Eyewash should be nearby. ■ Skin and Body Protection：Wear appropriate protective clothing, protective boots. Emergency shower should be nearby.
Hygiene measures： 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. 2. Smoking or eating is strictly prohibited in the work site. 3. Wash hands thoroughly after handling this substance. 4. Keep the work area clean.

Section 9 - Physical & Chemical Properties

Appearance：Liquid.	Odor：ammonia-like odor.
Colour：Clear.	Melting Point: -4 ℃
pH value：>10.00	Boiling point/boiling range：198～199℃
Flammability: --	Flash point：105℃
Decomposition temp：--	Test method：ASTM D 3828
Autoignition temp：--	Explosion properties：--
Vapor pressure：0.2 mmHg@20℃	Vapor density：--
Density：1.01±0.05（at 25℃ ）	Solubility：Soluble in water.
log Kow：--	Evaporation Rate：< 1

Section 10 - Stability & Reactivity Data

Stability：stable under ordinary conditions of use and storage.
Possible hazardous reactions under specific conditions： May produce carbon monoxide when incomplete combustion occur
Conditions to avoid：temperature over 85℃, air, sunlight, other sources of ignition.
Materials to avoid：strong acid, hydrogen chloride, acid anhydride, strong oxidizer, monomer, strong deoxidizer, nitrocellulose
Hazardous decomposition products：--

Section 11 - Toxicological Information

Route of exposure：Eye、Skin、Ingestion、Inhalation
Symptoms：burning, coughing, asthma, laryngitis, shortness of breath, headache, nausea, rash, pain
Immediate Toxicity： ■ Skin: 1. may cause serious irritation, discomfort, pain, chemical burn, swelling, blain, or tissue damage.

- Eyes:
  1. Liquid may cause serious irritation, red eyes, swelling, and chemical burns.
  2. Diluted solution will cause serious corneal damage.
  3. May cause severe eye damage followed by loss of sight.
- Inhalation:
  1. When expose to high concentration, it will cause irritation to nose, pharynx, and respiratory tract. It may cause burning, coughing, asthma, laryngitis, shortness of breath, headache, nausea, vomiting, pain in chest, and other symptoms.
  2. If expose to higher concentration, it may cause serious damage to lung (e.g. chemical pneumonia, pulmonary edema) liver and kidney.
- Ingestion:
  1. It may cause serious irritation, mouth burn, throat, alimentary canal, stomach
  2. Other symptoms may include stomachache, chest pain, nausea, vomiting, diarrhea, dizziness, thirst, weakness, or exhaustion.
  3. It may cause shock, low blood pressure, pulse down, cyanosis, coma.
- LD_{50}:--
- LC_{50}:--

Specific effects：Chronic Effects on Humans:

1. Repeated or prolonged skin contact may cause chronic dermatitis.
2. If overtime inhaled, may cause asthma, bronchitis and upper respiratory tract infection.

Section 12 - Ecological Information

Ecotoxicology：

- LC_{C50}(fish)：--
- EC_{50}(Aquatic Invertebrates)：--
- Bioconcentration factor (BCF)：--

Persistence and degradability：

- Half-Life (Air)：--
- Half-Life (Water surface)：--
- Half-Life (Groundwater)：--
- Half-Life (Soil)：--

Bioaccumulative potential：

1. Ethanolamine will decompose into different compounds inside the body.
2. Some of the ethanolamine will be exhaled and urinated but some will remain in the liver and kidneys, showing that portions may still accumulate inside the body.

Mobility in soil：--

Other adverse effects：--

Section 13 - Disposal Considerations

Methods of disposal：

1. Refer to the relevant laws and regulations for handling.
2. Follow the ware house conditions in storing waste substances waiting for disposal.

Section 14 - SDS Transport Information

UN classification number：--
Proper D.O.T Shipping Name: --
Hazard Class: --
Packing Group： --
Marine pollution：--
Specific precautionary transport measures and conditions： 1. Store away from incompatible materials. 2. The outer package of dangerous goods must be non-reactive materials. 3. Must fix the dangerous goods with or without package by using binding belt in transportation container. 4. No stacking unless the package designed for stacking. 5. Protect the outer package of dangerous goods against physical damage during loading or unloading.

Section 15 - Regulatory Information

Regulations： 1. Occupational Safety and Health Act 2. Regulations for the Labelling and Hazard Communication of Hazardous Chemicals 3. Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace 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	Suppler：San Fu Chemical Co., Ltd.	
	Address：1,Sec.1,Huanyuan E..Rd.,Liuying Dist.,Tainan, Taiwan 736.	
	Supplier’s phone：886-6-6231821	FAX.：886-6-6231822
	Name：X.Z.Lin	
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Remarks	Symbols Explanations: “--” No information is available at this time. “/” Not applicable to this substance.	
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