



Material Safety Data Sheet


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Section 1 - Product and Company Identification

Product name : Photo-Resist Detergent (EZ-100)	
Other names : --	
Product use : Photo-Resist Clean Solvent	
Supplier's name : San Fu Chemical Co., Ltd., Shan Hua Plant	
Supplier's address : 340 Hsiao Hsin Li, Shan Hua Town, Tainan Hsien, Taiwan, R.O.C.	
Supplier's phone : 06-5837608	Emergency phone : 06-5837608
FAX. : 06-5839498	

Section 2 - Hazards Identification

Classification :	
1. Flammable liquids	Category 3
2. Acute toxicity	Category 4 (ingestion)
3. Acute toxicity	Category 4 (Skin)
4. Serious Eye Damage/Eye Irritation	Category 2
The Most Important Hazards and effect	
Label element :	
■ Hazard symbol : Flame, Skull and Crossbones, Exclamation Mark	
	
■ Signal word : Danger	
Hazard statement :	
1. Flammable liquid and vapor	
2. Harmful while contacting with skin	
3. Cause eye irritation	
Precautionary statement :	
1. Place in the well ventilated area.	
2. Away from ignition-strictly no fireworks.	
3. Avoid contact with eye.	
4. Do not inhale the gas/ smoke/vapor/fog.	
5. Wear proper protective clothing, gloves, goggles/ face shield.	
Others Hazard : --	

Section 3 - Composition/Information On Ingredients

Mixture :

Component or impurities contributing to the hazard	Concentration or concentration range (%)	CAS No.
Propylene Glycol mono-methyl ether Acetate, PGMEA	55~75%	108-65-6
Cyclohexanone	25~45%	108-94-1



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Section 4 - First Aid Measures

The First-aid Information :

■ Inhalation :

1. Before rescue, required proper and safety protective equipments to ensure the self safety.
2. Remove the contaminated origin or move the patient to an air-circulated place.
3. If the person is not breathing, give Artificial Respiration or CPR immediately by the trained personnel.
4. Seek 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. Avoid direct contact with chemicals, wear impervious gloves if necessary.
2. In case of contact, immediately flush eyes with gentle water for at least 20 minutes till the contamination is removed. Keep eyelid apart and away from eyeballs during irrigation.
3. If the irritation occurs, repeated flushing.
4. Seek medical attention immediately.

■ Ingestion :

1. If the patient lost of consciousness or cramp, don't give any food.
2. Rinse the mouth with water thoroughly.
3. Do not induce vomit.
4. Give 240-300ml water to the patient.
5. Seek medical attention immediately.

The Most Important Symptoms and Hazardous Effects : Inhibition of the nervous system, headache, nausea, or lost of consciousness.

Protection of First-aiders : Wear category C protective equipments to practice the first aid in the safety area.

Notes to a Physician : If swallowed, consider Gastric lavage, Activated Carbon, should be monitored in the hospital.

Section 5 - Fire Fighting Measures

Extinguishing Media : CO₂, Chemical powder, Alcohol foam

Specific Hazards when Fire-fight :

1. Vapor / air mixture are the peroxides.
2. Accumulation in the low lying place will increase the danger of burning and poisoning.
3. Vapor is heavier than air may spread far. Once the substance meet the source of fire, may cause tempering.

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.



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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.

Specific Protection of Firefighters : Fireman required wearing respirator, protective gloves, and fire cloth.

Section 6 - Accidental Release Measures

Personal Precautions :

1. Restrict access the area until completion of clean up.
2. Ensure clean up is conducted by trained personnel only.
3. Wear proper personal protective equipments.

Environmental Precautions :

1. Process aeration in the area.
2. Extinguish or eliminate all the source of ignition.
3. Refer to the government safety and environmental protection unit.

Methods for Cleaning up :

1. Do not touch spilled material.
2. If safe to do so, try to prevent or reduce leakage.
3. If safe to do so, try to move the spilled container outdoor or well ventilated area. Pack the residual to the other container properly.
4. Avoid spilled drain into the sewer or airtight room.
5. Small spill: Use the inert material to absorb the leakage and store in the proper container with cover and label. Then wash the contaminated place with water.
6. Large spill: Use the sand, soil or other inert material to collect by embanking surrounds. Use pump or vacuum to transfer liquid to the container properly. The residual stores in the proper container with cover and label. Wash the contaminated place with water and refer the government safety hygiene and environment protective administration.
7. Precaution: the contaminated absorber and leakage are dangerous.

Section 7 - Handling and Storage

Handling :

1. While processing, the engineering control should be operated and make good use of personal



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- protective equipments. Staffs should under the training in hazardous info and safety use of the related substance.
2. Extinguish all the ignition sources and away from heat and incompatibles.
 3. Non-Smoking mark should be posted in the working area.
 4. Empty tank, container, tube may have danger residue. Must not do the welding, cutting, drilling or other heat producing work without cleaning.
 5. Keep a fire extinguisher and cleaning equipment nearby.
 6. Avoid generating the droplet or vapor. Operate in the specific well ventilated area and use the minimum amount. Operating area must separate with storage area.
 7. Wear proper personal protective equipment to avoid contact with the chemical or contaminated equipments if necessary.
 8. Do not use with incompatibles. (strong oxidizers)
 9. Use the compatibles made containers. Pay attention during dispensing the substances. Don't spill from the container.
 10. While opening, toppling and mixing the substance stay in the upwind position.
 11. Don't pour the contaminated liquid to the original storage tank.
 12. The container should be labeled. Keep tight without using and avoid damage.
 13. Away from spark, ignition source and avoid generating the vapor or droplet.

Storage :

1. Store in a cool, dry, well ventilated and indirect to sunlight location. Away from heat, ignition and incompatibles.
2. Storing equipments should be built by fire resistance material.
3. The floor should be made by impermeable material to prevent absorbing by the floor.
4. 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.
5. Clearly labeled in the entrance of the storage place, no obstacle. Only allowed trained personnel access.
6. Separate the storage place with the working area, the dinning area and protective equipment area.
7. Keep a fire extinguisher and cleaning equipment nearby the storage area.
8. Store in the compatibles made containers. Non-use or empty container should keep closed. Avoid damaging and accumulating the containers.
9. Checking the damage or spill of the container regularly.
10. Checking the brand new containers and see if they are properly label and without damage.
11. Use the compatibles made containers to store the leakage.
12. Store in the suggested temperature from the chemical manufacturer or supplier. If necessary, install the temperature alarm.
13. Using non-sparkling, grounded ventilation system, anti explosive equipments and safety electronics in the storage area.
14. Store in the approved fire resistant cabinet or storage room.
15. 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.

Section 8 - Exposure Controls & Personal Protection

Engineering measures :

1. Provide locally exhausted device.
2. While the explosive concentration exists, the ventilation equipment could prevent explosion.



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3. Confirm the exposure limit approval.			
Control parameters			
TWA	STEL	Ceiling	Biological standards
--	--	--	--
Personal protective equipment : <ul style="list-style-type: none"> ■ Respiratory Protection : <ol style="list-style-type: none"> 1. If repeated overexposure, appropriate personal respiratory protective equipment is highly recommended. 2. Different equipments are required when exposure in different concentration. 3. Confirm the warning notice before using. 4. Wear any NIOSH approved full-face piece oxygen-contained breathing apparatus and positive pressure demand. 5. Wear any NIOSH approved full-face piece self-contained breathing apparatus and positive pressure demand. 6. Unknown concentration or under condition of endanger to healthy and life: Wear any NIOSH approved full-face piece self-contained breathing apparatus and positive pressure demand. ■ Hand Protection : Wear impervious gloves made of Butyl rubber, rubber like, Viton, 4H, CPF3, Reponder. ■ Eye Protection : Wear chemical splash goggles and face shield. ■ Skin and Body Protection : Wear protective clothing, Overalls, working boots made by rubber materials mention above and safety shower equipments. 			
Hygiene measures : <ol style="list-style-type: none"> 1. Announce and Post danger symbol. 2. Keep ventilating in the area. 3. Controlling staff should be nearby the working area. 4. Install the emergency eye washing and showering equipments in the working area. 			

Section 9 - Physical & Chemical Properties

Appearance : colorless liquid	Odor : light ester flavor
Color : Transparent	Melting Point: --
pH value : 5-7	Boiling point/boiling range : 120°C
Flammability: --	Flash point : 32 °C
Decomposition temp : --	Test method : Closed cup
Auto ignition temp : 272 °C	Explosion properties : 1.1% –13.8%
Vapor pressure : 4 mmHg @20°C	Vapor density : 4.6
Density : 0.95	Solubility : tiny soluble (2.3g/100g water@20°C)
log Kow : /	Evaporation Rate : 0.4 (Butyl acetate=1)

Section 10 - Stability & Reactivity Data

Stability : <ol style="list-style-type: none"> 1. Could form explosive peroxides



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2. Avoid store in a long period or contact with air, light or use above the room temperature.
Possible hazardous reactions under specific conditions : Oxidizers: react or increase the danger of the fire and explosion.
Conditions to avoid :
1. Heat, spark, static electricity, source of fire.
2. May cause break or explosion of the containers while heating the containers.
Materials to avoid : Oxidizers
Hazardous decomposition products : --

Section 11 - Toxicological Information

Route of exposure : Skin, inhalation, ingestion, eyes
Symptoms : Sore throat, coughing, Shortness of breath, dyspnea, cyanosis, rapid breathing, skin and eye irritation, stomachache, vomit, kidney injury, nausea, headache, Drowsiness, mental confusion, lost of consciousness, death.
Immediate Toxicity :
1. Inhalation :
1.1 The vapor will cause uncomfortable to the upper respiratory tract and lungs.
1.2 In the high temperature, will increase the danger of inhalation.
1.3 The acute effects of inhalation under the high concentration are chest and nose irritation, coughing, sneezing, headache and nausea.
1.4 Expose in the high humiliated environment may cause coma, lost of consciousness even shock or death.
1.5 CNS depression include general uncomfortable, dizziness, headache, anesthesia, slow response, slurred speech and loss of consciousness.
1.6 Severe poisoning may cause respiratory depression and death.
2. Skin :
2.1 Long term exposure may cause skin gently illness, and may cause skin reaction and dryness.
2.2 Will aggressive the symptoms of the skin illness.
2.3 Repeat exposure for 2 weeks will cause skin inflammation and peel off.
3. Eye :
3.1 Dust and the water of the eye will react and generate into hydrochloric acid. It will cause redness, pain, tearing and blurred vision to the eyes.
3.2 Severe irritation to the rabbit eyes with 50µg of this substance.
3.3 This substance cause highly uncomforted to the eyes with tearing, pain and severe conjunctivitis.
3.4 If no proper and immediately manage, cornea damage may develop into permanent vision injury.
3.5 May cause severe irritation and inflammation to the eyes.
4. Ingestion :
4.1 Cause uncomforted and harmful while swallowed.
4.2 Cause nausea, stomach irritation, pain and vomit.
4.3 Reverse inhalation to the lungs may cause deathly waste swollen, Respiratory failure and even cardiac arrest and death.
● LD ₅₀ : 1535 mg/kg (Oral, Rat)
● LC ₅₀ : 4345 ppm/6H (Inhalation, Rat)



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Specific effects :

1. Over and repeated exposure could cause upper respiratory irritation and liver and kidney effects.
2. Cause mild temporally movement disorder, dizziness, CNS depression, hypothermia, increases weight of the male liver, mild poisoning of the fetus.

Section 12 - Ecological Information

Ecotoxicology : --

- LC₅₀(fish) : --
- EC₅₀(Aquatic Invertebrates) : --
- Bioconcentration factor (BCF) : --

Persistence and degradability : --

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

Bioaccumulative potential : --

Mobility in soil : --

Other adverse effects : --

Section 13 - Disposal Considerations

Methods of disposal :

1. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier.
2. Incinerate in the certified incineration furnace or volatile the disposal.
3. If possible, recycle the containers or dispose in the certified landfill.

Section 14 - MSDS Transport Information

UN classification number : 3092, 1915, 3272,1993

Proper D.O.T Shipping Name : /

Hazard Class : Flammable liquid Category 3

Packing Group : III

Marine pollution : none

Specific precautionary transport measures and conditions : --

Section 15 - Regulatory Information

Regulations :

1. Regulations for Labor Safety and Health Installations
2. Regulations for Chemical Hazard Communication
3. Permissible Exposure Limits of Hazardous Substances in the Work Environment
4. Road Traffic Safety Regulations
5. Industrial Waste Storage and Disposal Regulations and Facility Standards



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| 6. Organic Solvent Poisoning Prevention Regulations |
| 7. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations. |

Section 16 - Other Information

Literature references	1. CHEMINFO Database , CCINFO Disc , 2005-2 2. RTECS Database , TOMES PLUS Disc , Vol.63 , 2005 , Vol.71 , 2007 3. HSDB Database , TOMES PLUS Disc , Vol.63 , 2005 , Vol.71 , 2007 4. ChemWatch Database , 2007-1 5. OHS MSDS Database , 2007		
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