



Material Safety Data Sheet


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Section 1 - Product and Company Identification

Product name : Photo-Resist Detergent (EZ-300)
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. Serious Eye Damage/Eye Irritation Category 2
The Most Important Hazards and effect
Label element :
■ Hazard symbol : Flame, Exclamation Mark

■ Signal word : Warning
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. Keep away from sources of ignition-No smoking.
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	10 - 40%	108-94-1
Propylene Glycol mono-methyl ether	30 - 20%	107-98-2
Additives	< 2%	--



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Section 4 - First Aid Measures

The First-aid Information :
<ul style="list-style-type: none">■ inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen. Get medical help.■ skin contact : Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Clean thoroughly before re-wear the contaminated clothing.■ eye contact : Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.■ Ingestion : If swallowed, drink water, and seek medical attention. Do not induce vomiting if patient is unconscious.
The Most Important Symptoms and Hazardous Effects : may cause headaches, nausea, unconsciousness and other central nervous system effects.
Protection of First-aiders : wear Level C protective clothing.
Notes to a Physician : consider gastric lavage if swallowed

Section 5 - Fire Fighting Measures

Extinguishing Media : carbon dioxide, chemical powder, alcohol foam
Specific Hazards when Fire-fight : For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.
Specific Fire-fighting Procedure : <ol style="list-style-type: none">1. Keep people away.2. Isolate fire and deny unnecessary entry.3. Stay upwind. Keep out of low areas where gases (fumes) can accumulate.4. Water may not be effective in extinguishing fire.5. Stay away from both end of the containers.6. Use water spray to cool fire exposed containers and fire-affected zone until fire is out.7. Fight fire from protected location or safe distance.8. Consider the use of unmanned hose holders or monitor nozzles.9. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container.10. Burning liquids may be extinguished by dilution with water.11. Do not use direct water stream. May spread fire.12. Eliminate ignition sources.13. Move container from fire area if this is possible without hazard.14. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.15. Evacuation radius: 800 meters (1/2 mile).
Specific Protection of Firefighters : <ol style="list-style-type: none">1. Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).



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2. If protective equipment is not available or not used, fight fire from a protected location or safe distance.
3. Appropriate warning to the cleaners.

Section 6 - Accidental Release Measures

Personal Precautions :

1. Changing into street clothing after work is desirable.
2. Use appropriate safety equipments.
3. Wash hands and clothing thoroughly after handling.

Environmental Precautions :

1. Isolate area. Keep well ventilation.
2. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard.
3. Keep out of sewers. Check area with combustible gas detector before reentering area.
4. Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

Methods for Cleaning up :

1. Small spills: Absorb with materials such as sand vermiculite. Collect in suitable and properly labeled containers.
2. Large spills: Dike for later disposal.
3. Pump with explosion-proof equipment.
4. If available, use foam to smother or suppress.
5. Pump into suitable and properly labeled containers.

Section 7 - Handling and Storage

Handling :

1. Avoid contact with eyes, skin, and clothing.
2. Keep away from heat, sparks and flame.
3. Avoid breathing vapor or mist.
4. Operate in a well-ventilated place.
5. Do not use plastic containers.
6. Use only spark-proof tools.
7. While handling, do not eat, drink or smoke.
8. Avoid electro-static discharge.

Storage :

1. Keep away from heat, sparks, and flame.
2. Keep away from sources of ignition.
3. Prevent vapor accumulation.
4. Store in a cool, dry place.
5. Keep container closed when not in use.
6. Protect from physical damage.

Section 8 - Exposure Controls & Personal Protection

Engineering measures :

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.



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Control parameters			
TWA	STEL	Ceiling	Biological standards
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<p>Personal protective equipment :</p> <ul style="list-style-type: none"> ■ Respiratory Protection : <ol style="list-style-type: none"> 1. Atmospheric levels should be maintained below the exposure guideline. 2. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. 3. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge. ■ Hand Protection : <ol style="list-style-type: none"> 1. Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Chlorinated polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). 2. Examples of acceptable glove barrier materials include: Viton. 3. Natural rubber ("latex"). 4. Polyvinyl chloride ("PVC" or "vinyl"). 5. Nitrile/butadiene rubber ("nitrile" or "NBR"). ■ Eye Protection : <ol style="list-style-type: none"> 1. Use safety glasses. ■ Skin and Body Protection : <ol style="list-style-type: none"> 1. When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. 2. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. 			
<p>Hygiene measures :</p> <p>Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. No smoking and drinking in work area.</p>			

Section 9 - Physical & Chemical Properties

Appearance : clear liquid	Odor : acetate -like
Color : colorless	Melting Point: --
pH value : 4	Boiling point/boiling range : 146°C
Flammability: --	Flash point : 47°C
Decomposition temp : --	Test method : Closed cup
Auto ignition temp : 272°C	Explosion properties : 1.5%~10%
Vapor pressure : 3.8 mmHg @25°C	Vapor density : 4.6



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Density : 0.966 @25°C	Solubility : 220g/100g water@20°C
log Kow : /	Evaporation Rate : 0.4

Section 10 - Stability & Reactivity Data

Stability : Thermally stable at typical use temperatures.
Possible hazardous reactions under specific conditions : May react with oxidants causing fire and explosion hazard
Conditions to avoid : 1. Keep away from heat, static electricity, sparks, sunlight and moisture. 2. Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.
Materials to avoid : Strong acids, strong bases, or strong oxidizers.
Hazardous decomposition products : --

Section 11 - Toxicological Information

Route of exposure : Skin, inhalation, ingestion, eyes
Symptoms : --
Immediate Toxicity : 1. Inhalation : 1.1 The vapor will cause uncomfortable to the upper respiratory tract and lungs. 1.2 The danger of inhalation will increase if temperature is high. 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, unconsciousness, 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.



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- 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.
 - LD₅₀: 8532 mg/kg (Oral, Rat)
 - LC₅₀: 4345 ppm/6H (Inhalation, Rat)

Specific effects : --

Section 12 - Ecological Information

Ecotoxicology : --

- LC₅₀(fish) : 5000µg/L/24 yr (Petromyzon marinus)
- 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. Contact a licensed professional waste disposal service to dispose of this material.
2. Burn in a chemical incinerator equipped with an afterburner and scrubber.
3. Observe all federal, state, and local Environmental regulations.

Section 14 - MSDS Transport Information

UN classification number : 1993

Proper D.O.T Shipping Name : Flammable liquids

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



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| 6. Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations. |
| 7. Ordinance on Prevention of Organic Solvent Poisoning |
| 8. Facility Standards |

Section 16 - Other Information

Literature references	1. CHEMINFO Database, CCINFO CD-ROM, 2005-2 2. RTECS Database, TOMES PLUS CD-ROM, Vol. 63-2005, Vol. 71-2007 3. HSDB Database, TOMES PLUS CD-ROM, Vol. 63-2005, Vol. 71-2007 4. CHEMWATCH Database, 2007-1 5. GHS MSDS Database, 2007		
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