



# Material Safety Data Sheet


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## Section 1 - Product and Company Identification

Product name : Photo-Resist Thinner/Dilution Agent ( OK-73 )	
Other names : --	
Product use : photoresist thinner, photoresist detergent	
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 :
<ol style="list-style-type: none"><li>1. Inflammable Liquids (Category 3)</li><li>2. Serious Eye Damage/Eye Irritation (Category 2)</li></ol>
The Most Important Hazards and effect
Label element :
<ul style="list-style-type: none"><li>■ Hazard symbol : Flame, Exclamation Mark</li></ul>

<ul style="list-style-type: none"><li>■ Signal word : Danger</li></ul>
Hazard statement :
<ol style="list-style-type: none"><li>1. Inflammable liquid and vapor/mist</li><li>2. May cause eye irritation</li></ol>
Precautionary statement :
<ol style="list-style-type: none"><li>1. Place the containers in well-ventilated area.</li><li>2. Keep away from heat or any source of ignition.</li><li>3. Avoid contacting with eyes.</li></ol>
Others Hazard : --

## Section 3 - Composition/Information On Ingredients

Mixture :

Component or impurities contributing to the hazard	Concentration or concentration range	CAS No.
Propylene Glycol Monomethyl Ether	69~71%	107-98-2
Propylene Glycol Monomethyl Ether Acetate	29~31%	108-65-6

## Section 4 - First Aid Measures

The First-aid Information :
<ul style="list-style-type: none"><li>■ Inhalation : If you experience nauseated, headaches, or dizzy, leave area of exposure to breath fresh air immediately. Give oxygen; keep warm; and artificial respiration if</li></ul>



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<p>necessary. Get medical attention.</p> <ul style="list-style-type: none"><li>■ Skin Contact : Remove contaminated clothing as needed. Wash affected skin thoroughly with soap and water. Flush with water for at least 15 minutes. Seek urgent medical attention.</li><li>■ Eye Contact : Immediately flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower lids. If pain or irritation persists, promptly obtain medical attention. Remove contact lenses, if worn. DO NOT use counteractive to flush eyes.</li><li>■ Ingestion : DO NOT induce vomiting. If conscious, give large quantities of water. Seek immediate medical attention. Never give anything by mouth to an unconscious person.</li></ul>
<p>The Most Important Symptoms and Hazardous Effects :</p> <ol style="list-style-type: none"><li>1. Inter-limb development coordination disorder</li><li>2. Lose of consciousness</li></ol>
<p>Protection of First-aiders :</p> <ol style="list-style-type: none"><li>1. To avoid contacting with the poisonous substance</li><li>2. Wear appropriate chemical protective equipments.</li></ol>
<p>Notes to a Physician :</p> <ol style="list-style-type: none"><li>1. Treat symptomatically.</li><li>2. To avoid contacting with the poisonous substance.</li><li>3. Wear appropriate chemical protective equipments.</li></ol>

## Section 5 - Fire Fighting Measures

<p>Extinguishing Media :</p> <ol style="list-style-type: none"><li>1. Small fire: use carbon dioxide 、 dry chemical 、 foam</li><li>2. Large fire: use water, fog or spray, foam</li></ol>
<p>Specific Hazards when Fire-fight : Vapor or gas may spread to distance ignition sources and flash back. Vapors or gas may accumulate or concentrate along the ground in low areas or in confined area. Indoor or outdoor vapors or gas, or vapors in the sewer may create explosion hazard. Burning may produce oxidant, sparkle, or droplet.</p>
<p>Specific Fire-fighting Procedure :</p> <ol style="list-style-type: none"><li>1. Apply proper extinguishing media.</li><li>2. May cause anoxia in confined space.</li></ol>
<p>Specific Protection of Firefighters : Do not enter fire area without proper protection. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection.</p>

## Section 6 - Accidental Release Measures

<p>Personal Precautions :</p> <ol style="list-style-type: none"><li>1. Evacuate all unnecessary and unprotected personnel.</li><li>2. Keep upwind and keep away from low or confined area.</li><li>3. Wear appropriate personal protective equipment as specified in Section 8.</li></ol>
<p>Environmental Precautions :</p> <ol style="list-style-type: none"><li>1. Remove all sources of ignition.</li><li>2. Stop leak if safe to do so.</li></ol>
<p>Methods for Cleaning up :</p>



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DO NOT touch spilled material. Stop leak if without risk.

■ **Small Spill:**

1. Absorb with dry sand and earth or other non-combustible materials. Collect the spilled material in the proper covered disposal containers with labels. .
2. Use plenty of water to rinse the area.

■ **Large Spill:**

1. Dike and disposal according to the regulations.

## Section 7 - Handling and Storage

### Handling :

1. Keep away from heat or any source of ignition.
2. Keep away from any incompatibles such as oxidizing agents.
3. Bond and ground transfer containers and equipment to avoid static electricity.
4. Well ventilation.
5. Store in proper covered containers with labels.

### Storage :

1. Keep away from sunshine.
2. Keep temperature below 35°C.
3. Keep in a well-ventilated area.
4. Keep away from any sources of ignition.
5. Separated storage, outdoor is recommended.

## Section 8 - Exposure Controls & Personal Protection

### Engineering measures :

1. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

### Control parameters

TWA	STEL	Ceiling	Biological standards
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### Personal protective equipment :

■ **Respiratory Protection :**

If repeated overexposure, appropriate personal respiratory protective equipment is highly recommended.

Different equipments are required when expose in different concentration.

Wear a full-face organic vapor respirator or chemical cartridge respirator.

For emergency and other conditions where the exposure limit may be greatly exceeded, use an approved positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

■ **Hand Protection :** Wear chemical protective gloves.

■ **Eye Protection :** Safety glasses should be worn whenever working with chemicals.

Goggles or a face shield are required if there is a chance of splashing. Emergency shower and eyewash facility nearby.

■ **Skin and Body Protection :** Protective equipment (Level C).

### Hygiene measures :

1. Immediately change contaminated clothing after work. Appropriate warning before cleaning.
2. Wash hands thoroughly after handling.



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|--|
| 3. Smoking and eating are prohibited in the work places. |
| 4. Maintain cleanness in the work places.                |

## Section 9 - Physical & Chemical Properties

Appearance : Liquid	Odor : Ester odor
Color : Transparent	Melting Point: --
pH value : --	Boiling point/boiling range : 120°C
Flammability: --	Flash point : 34.5°C
Decomposition temp : --	Test method : closed
Auto ignition temp : --	Explosion properties : --
Vapor pressure : 14.7psi	Vapor density : --
Density : 0.930±0.010(25/25°C)	Solubility : Soluble in cold water.
log Kow : /	Evaporation Rate : --

## Section 10 - Stability & Reactivity Data

Stability : Stable under normal temperature and pressure
Possible hazardous reactions under specific conditions : Oxidizer (strong): may cause fire or explosion.
Conditions to avoid : Static electricity, spark, air, sunshine, moisture
Materials to avoid : Oxidizers
Hazardous decomposition products : --

## Section 11 - Toxicological Information

Route of exposure : Inhalation 、 Skin 、 Eye 、 Ingestion
Symptoms : irritation, headache, vomiting, dizzy
Immediate Toxicity : <ol style="list-style-type: none"><li>1. Skin: May be absorbed through skin rapidly.</li><li>2. Inhalation: Irritation to eye, nose and throat. Suppression of the nerves system, may cause headaches, nausea, dizziness, fatigue, body dysfunction, or even unconsciousness.</li><li>3. Eye: cause severe irritation, and tear production.</li><li>4. Ingestion: Irritation to eye, nose and throat. Suppression of the nerves system may cause headaches, nausea, dizziness, fatigue, body dysfunction, or even unconsciousness.</li></ol> <ul style="list-style-type: none"><li>● Propylene glycol monomethyl ether acetate LD<sub>50</sub>: 8500 mg/kg (Oral 、 rat)</li><li>● Propylene glycol monomethyl ether LD<sub>50</sub>: 5660 mg/kg (Oral 、 rat)</li></ul>
Specific effects : --



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## 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. Incineration</li><li>2. Sanitary Landfill</li><li>3. Follow ROC Environmental Laws and Regulations.</li></ol>
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## Section 14 - MSDS Transport Information

UN classification number : 1993
Proper D.O.T Shipping Name : --
Hazard Class : --
Packing Group : --
Marine pollution : --
Specific precautionary transport measures and conditions : --

## Section 15 - Regulatory Information

Regulations : <ol style="list-style-type: none"><li>1. Regulations for Labor Safety and Health Installations</li><li>2. Regulations for Chemical Hazard Communication</li><li>3. Road Traffic Safety Regulations</li><li>4. Industrial Waste Storage and Disposal Regulations</li><li>5. Facility Standards</li></ol>
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## Section 16 - Other Information

Literature references	1. MSDS from manufacturers or suppliers 2. Chemistry Dictionary , Gau Lih Book Co., Ltd. 1993-05 3. 1996 North American Emergency Response Guidebook , CLA 2000-05 4. MSDS Database , ITRI 2000-07 5. Class Materials from the Advanced Chemical Hazard Communication for Executors , CLA 2000-08 6. 62000 TLVs and BEIs , ACGIH		
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