



OCI Company Ltd.

Material Safety Data Sheet

# MSDS

## Ag Etchant

### Section 1 - Chemical Product and Company Identification

TRADE NAMES : Ag Etchant

Recommended use : Not available

Restriction of use : Not available

Company Identification

Company : OCI Company Ltd.

Address : 595 Hakik-dong, Nam-gu, Incheon, KOREA

Tel No. : 82 - 32 - 860 - 6114

### Section 2 - Hazards Identification

- 1) Hazard Classification
- Oxidizing liquid: 1
  - Metals corrosion : 1
  - Acute hazard (Skin) : 4
  - Skin corrosion/irritation : 1
  - Serious eye damage / Eye irritation : 1
  - Respiratory irritation : 1
  - Specific target organ toxicity following single exposure : 1
  - Specific target organ toxicity following single exposure : 3 (Respiratory system)
  - Specific target organ toxicity following repeated exposure : 2

2) Warning signal

Symbol



Signal word

Danger

Hazard statement

H271 May cause fire or explosion; strong oxidizer

H290 May be corrosive to metals

H312 Harmful in contact with skin

H314 May be harmful in contact with skin

H318 May cause an allergic skin reaction

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

H335 May cause respiratory irritation

H370 Causes damage to organs

H373 May cause damage to organs through prolonged or repeated exposure

### Prevention precautionary statements

P220 Keep/Store away from clothing/combustible materials  
P221 Take any precaution to avoid mixing with combustibles  
P233 Keep container tightly closed  
P234 Keep only in original container  
P260 Do not breathe dust/fume/gas/mist/vapours/spray  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray  
P264 Wash thoroughly after handling  
P270 Do not eat, drink or smoke when using this product  
P271 Use only outdoors or in a well-ventilated area  
P280 Wear protective gloves/protective clothing/eye protection/face protection  
P284 Wear respiratory protection  
P285 In case of inadequate ventilation wear respiratory protection  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
P302+P352 IF ON SKIN: Gently wash with plenty of soap and water  
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P306+P360 IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.  
P307+P311 IF exposed: Call a POISON CENTER or doctor/physician  
P310 Immediately call a POISON CENTER or doctor/physician  
P312 Call a POISON CENTER or doctor/physician if you feel unwell  
P314 Get medical advice/attention if you feel unwell  
P320 Specific treatment is urgent  
P321 Specific treatment  
P322 Specific measures  
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician  
P363 Wash contaminated clothing before reuse  
P370+P378 In case of fire: Evacuate area.  
P390 Absorb spillage to prevent material damage  
P403+P233 Store in a well-ventilated place. Keep container tightly closed  
P403+P235 Store in a well-ventilated place. Keep cool  
P405 Store locked up  
P406 Store in corrosive resistant/container with a resistant inner liner  
P501 Dispose of contents/container to the related laws  
Not available

3) NFPA

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### Section 3 - Composition, Information on Ingredients

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COMPONENT: Phosphoric acid

CAS No.: 7664-38-2

PERCENTAGE: 40 – 50

COMPONENT: Nitric acid

CAS No.: 7697-37-2

PERCENTAGE: < 3

COMPONENT: Acetic acid

CAS No.: 64-19-7

PERCENTAGE: 30 - 40

COMPONENT: Water

CAS No.: 7732-18-5

PERCENTAGE: 15 - 20

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### Section 4 - First Aid Measures

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**Eyes:** If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.

**Skin:** Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

**Ingestion:** Seek immediate medical attention. Do not induce vomiting. Vomiting will cause further damage to the mouth and throat. If individual is conscious and alert, immediately rinse mouth with water and give milk or water to drink. If possible, do not leave individual unattended.

**Inhalation:** If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

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### Section 5 - Fire Fighting Measures

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#### Flammable properties

The product is not flammable. No unusual fire or explosion hazards noted.

#### Extinguishing media

Suitable extinguishing media : Water. Carbon dioxide (CO<sub>2</sub>). Dry chemical powder. Foam.

Unsuitable extinguishing media : None known.

#### Protection of firefighters

Fire may produce irritating, corrosive and/or toxic gases.

Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Cool containers exposed to flames with water until well after the fire is out.

#### Special protective equipment for fire-fighters

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing

apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

#### **Specific methods**

In the event of fire and/or explosion do not breathe fumes.

#### **Hazardous combustion products**

Carbon monoxide and carbon dioxide. Nitrogen Oxides (NO<sub>x</sub>). Phosphorus Oxides (P<sub>x</sub>O<sub>y</sub>).

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### **Section 6 - Accidental Release Measures**

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#### **Small Spill**

Cover the contaminated surface with sodium bicarbonate or a soda ash/flaked lime mixture (50-50). Mix and add water if necessary to form a slurry. Scoop up slurry and wash site with soda ash solution. Proper mixing procedures are essential. Trained personnel should conduct this procedure. Untrained personnel should be removed from the spill area.

#### **Large Spill**

Persons not wearing protective equipment should be excluded from area of spill until clean-up is completed. Stop spill at source. Dike to prevent spreading. Pump to salvage tank.

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### **Section 7 - Handling and Storage**

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Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using the product. Use caution when combining with water; DO NOT add water to acid, ALWAYS add acid to water while stirring to prevent release of heat, steam and fumes. See Section 8 of the MSDS for Personal Protective Equipment.

Do not store in metal containers. Keep tightly closed in a dry, cool and well-ventilated place.

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### **Section 8 - Exposure Controls, Personal Protection**

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#### **Eye / face protection**

Wear safety glasses with side shields (or goggles) and a face shield.

#### **Skin protection**

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

#### **Respiratory protection**

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with specific cartridge and full facepiece providing protection against the compound of concern.

#### **General hygiene**

##### Considerations

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

Routinely wash work clothing and protective equipment to remove contaminants.

##### General

Wear chemical protective equipment that is specifically recommended by the manufacturer.

Laundry contaminated clothing before reuse.

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**Section 9 - Physical and Chemical Properties**

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Appearance: Clear liquid

Odor: Vinegar-like

pH: Not available

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Specific Gravity/Density: Not available

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**Section 10 - Stability and Reactivity**

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Hazardous Polymerization : Product will not undergo hazardous polymerization.

Hazardous Decomposition : May form: carbon dioxide and carbon monoxide, nitrogen compounds, phosphorous compounds.

Chemical Stability : Stable.

Incompatibility : Avoid contact with: strong alkalis, Acid reacts with most metals to release hydrogen gas which can form explosive mixtures with air.

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**Section 11 - Toxicological Information**

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Not available

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**Section 12 - Ecological Information**

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The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

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**Section 13 - Disposal Considerations**

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Dispose of in accordance with all applicable local, state and federal regulations.

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**Section 14 - Transport Information**

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Proper Shipping Name: Ag Etchant (Mixed acid)

Hazard Class: Class 8

UN No. 3264

Packing Group: II

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**Section 15 - Regulatory Information**

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Not available

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**Section 16 - Other Information**

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Sources : KOSHA, National Emergency Management Agency

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