



## Microlithography Chemical Corp.

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### MATERIAL SAFETY DATA SHEET

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#### SECTION 1. CHEMICAL IDENTIFICATION -----

CHEMICAL NAME: Tetraethylammonium Hydroxide Solution  
TRADE NAME: NANO™ PMGI 101 DEVELOPER  
PRODUCT #: Positive Radiation Resist Developer  
GD90015

#### SECTION 2. COMPOSITION-----

HAZARDOUS  
INGREDIENTS: Tetraethylammonium Hydroxide (CAS: 77-98-5)

#### SECTION 3. HAZARD DATA-----

INFLAMMABILITY: Flammable liquid.  
SKIN CONTACT: May cause skin irritation.  
EYE CONTACT: May cause moderate to severe damage to the eyes.  
INGESTION: May be harmful if swallowed.  
INHALATION: Irritating to mucous membranes and upper respiratory tract.  
MUTAGENICITY: Not known to be mutagenic.  
CARCINOGENICITY: Not listed in NTP, IARC and OSHA  
TARGET ORGANS: Eyes, Respiratory Tract

#### SECTION 4. FIRST AID MEASURES-----

INHALATION: If inhaled, remove to fresh air. If patient has stopped breathing, give artificial respiration. If breathing is difficult give oxygen. Contact physician immediately.  
INGESTION: Do not induce vomiting. Give patient large amounts of water if conscious. Get medical attention immediately.  
SKIN CONTACT: Rinse with water for 15 minutes while removing contaminated clothing and shoes. Wash affected area with soap and water. Wash contaminated clothing before reuse.  
EYE CONTACT: Rinse immediately with water, flush for 15 min. lifting eyelids frequently. Get emergency medical assistance.

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## SECTION 5. FIRE FIGHTING MEASURES-----

### EXTINGUISHING

#### MEDIA:

Water, dry chemical, carbon dioxide, foam.

### SPECIAL FIRE FIGHTING PRECAUTIONS:

Wear self-contained breathing apparatus (SCBA) and personal protective equipment when exposed to products of combustion.

### UNUSUAL FIRE OR

#### EXPLOSION HAZARDS:

None

## SECTION 6. ACCIDENTAL RELEASE PROCEDURES -----

Spills may be absorbed with appropriate absorbent material for alkaline solutions and placed in a suitable container for disposal. To clean contaminated floors, flush with abundant quantities of water into sewer or waste treatment system if permitted by federal, state and local regulations. If not, collect water and treat.

Dispose of contaminated product and materials used in cleaning in an approved manner.

## SECTION 7. STORAGE AND HANDLING PRECAUTIONS-----

### STORAGE:

Store in tightly closed container in a cool environment away from direct sunlight.

### HANDLING:

Keep away from heat, sparks, and flames.  
Keep away from acids.  
Do not breathe vapors.  
Use only with mechanical exhaust.  
Do not contact with skin, eyes, and clothing.  
Avoid prolonged or repeated exposure.  
Wear impervious gloves and protective clothing.  
Wash with soap and water after handling.  
Have safety shower and eye wash available.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION-----

### RESPIRATORY PROTECTION:

In case of spills, use of self-contained breathing apparatus (SCBA) is recommended.

### VENTILATION:

Local or general mechanical ventilation is sufficient under normal conditions.

### SKIN PROTECTION:

Impervious gloves are required.

### EYE PROTECTION:

Safety goggles are required.



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## SECTION 9. PHYSICAL AND CHEMICAL DATA

APPEARANCE: Clear colorless liquid  
ODOR: No noticeable odor  
BOILING POINT: 100 °C (212 °F)  
SPECIFIC GRAVITY: 0.999  
VAPOR PRESSURE: 0.3 mm @ 20 °C (68 °F)  
VAPOR DENSITY: 2.3 (air=1)  
H<sub>2</sub>O SOLUBILITY: 100% @ 20 °C, by wt.  
% VOLATILES: <1% by wt  
EVAPORATION RATE: 1 (Water=1)  
FLASH POINT: Non-Flammable  
AUTOIGNITION TEMP: Not Determined  
EXPLOSION LIMITS: unk. lower  
unk. upper

## SECTION 10. REACTIVITY DATA

STABILITY: Stable  
INCOMPATIBILITY: Acids  
HAZARDOUS POLYMERIZATION: Will not occur  
HAZARDOUS COMBUSTION OR  
DECOMPOSITION PRODUCTS: Neutralization produces heat. Emits fumes of NO<sub>x</sub>.

## SECTION 11. TOXICITY HAZARDS

ORAL: none established  
IRRITATION: none established  
TLV: none established  
PEL: none established

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## SECTION 12. ECOLOGICAL DATA-----

No data available at this time

## SECTION 13. DISPOSAL CONSIDERATIONS-----

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with a afterburner and scrubber. Disposal should be made in compliance with all federal, state, and local environmental regulations.

## SECTION 14. TRANSPORTATION INFORMATION-----

HAZARD CLASSIFICATION: Non-hazardous  
SHIPPING NAME:  
UN NUMBER:

## SECTION 15. REGULATORY INFORMATION-----

HAZARDOUS LISTINGS: All ingredients appear on the TSCA Inventory of Chemical Substances, EINECS, and the Japan Hazardous Chemical Listing.  
SARA Title III: This product IS NOT subject to SARA Title III, Section 313 Reporting Requirements.

Calif. SCAQMD Rule 443.1 VOC's: 0 g/l; vapor pressure 0.3 mm Hg @ 20 °C

## SECTION 16. ADDITIONAL PRECAUTIONS AND COMMENTS-----

To the best of our knowledge, the above information is believed to be accurate but does not claim to be all inclusive and is intended to be used only as a guide. The supplier makes no warranty of any kind, expressed or implied, concerning the use of this product and shall not be held liable for any damage resulting from handling or from contact with the above product. User assumes all risks incident to its use.