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MATERIAL SAFETY DATA SHEET

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SECTION 1. CHEMICAL IDENTIFICATION -----

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

SECTION 2. COMPOSITION-----

HAZARDOUS
INGREDIENTS: Tetraethylammonium Hydroxide (CAS: 77-98-5); <5.0%

OTHER
INGREDIENTS: Water (CAS: 7732-18-5); >95.0%
Nonionic Surfactant; <1.0%
Quaternary Ammonium Compound; <1.0%

SECTION 3. HAZARD DATA-----

INFLAMMABILITY: Nonflammable liquid.
SKIN CONTACT: May cause skin irritation.
EYE CONTACT: May cause pain, transient irritation and superficial corneal effects.
INGESTION: May cause irritation of the mouth, throat and digestive tract.
INHALATION: May cause irritation of nose, throat and respiratory tract.
MUTAGENICITY: Not known to be mutagenic.
CARCINOGENICITY: Not listed in NTP, IARC and OSHA.
TARGET ORGANS: Eyes, Respiratory System, Skin

SECTION 4. FIRST AID MEASURES-----

INHALATION: Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.
INGESTION: Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Induce vomiting. Obtain medical attention immediately. Never administer anything by mouth if a victim is losing consciousness, is unconscious or is convulsing.
SKIN CONTACT: Wash skin with plenty of water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.
EYE CONTACT: Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

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SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Not readily combustible. Select extinguishing media appropriate to other materials involved.

SPECIAL FIRE FIGHTING PRECAUTIONS: Wear self-contained breathing apparatus (SCBA) and full protective equipment.

UNUSUAL FIRE OR EXPLOSION HAZARDS: This product may give rise to hazardous vapors in a fire.

SECTION 6. ACCIDENTAL RELEASE PROCEDURES

EVACUATION PROCEDURES & SAFETY: Wear appropriate protective clothing. Wear respiratory protection. Material can create slippery conditions underfoot.

CLEANUP & DISPOSAL OF SPILL: Spills may be absorbed with appropriate absorbent material for alkaline materials. Transfer into suitable containers for recovery or disposal.

ENVIRONMENTAL & REGULATORY REPORTING: Do not flush to drain. If required proper authorities should be notified.

SECTION 7. STORAGE AND HANDLING PRECAUTIONS

STORAGE: Store in tightly closed container in a cool, dry, well - ventilated environment away from direct sunlight.

HANDLING: Use in well ventilated area. Avoid inhaling vapor. Avoid contact with eyes, skin and clothing. Keep container tightly closed when not in use.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION: Respiratory protection not normally required. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

VENTILATION: Local or general mechanical ventilation is sufficient under normal conditions.

SKIN PROTECTION: Nitrile rubber gloves are recommended. Normal work wear.

EYE PROTECTION: Chemical safety goggles are recommended.

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SECTION 9. PHYSICAL AND CHEMICAL DATA

APPEARANCE: Clear colorless liquid
 ODOR: Amine
 BOILING POINT: 100 °C (212 °F)
 SPECIFIC GRAVITY: 1.00
 VAPOR PRESSURE: Data not available
 VAPOR DENSITY: Data not available
 H₂O SOLUBILITY: 100% @ 20 °C, by wt.
 % VOLATILES: <1% by wt
 EVAPORATION RATE: Slower than ether
 FLASH POINT: Nonflammable
 AUTOIGNITION TEMP: Not Determined
 EXPLOSION LIMITS: unk. lower
 unk. upper

SECTION 10. REACTIVITY DATA

STABILITY: Stable under normal conditions
 INCOMPATIBILITY: Acids, strong oxidizing agents
 HAZARDOUS POLYMERIZATION: Will not occur
 HAZARDOUS COMBUSTION OR
 DECOMPOSITION PRODUCTS: Carbon monoxide, triethylamine, oxides of nitrogen,
 methanol

SECTION 11. TOXICITY HAZARDS

As Nonionic surfactant:

ORAL: LD50, rat: > 10,000 mg/kg
 DERMAL: >5,000 mg/kg
 TLV: none established
 PEL: none established

SECTION 12. ECOLOGICAL DATA

No data available at this time.

SECTION 13. DISPOSAL CONSIDERATIONS

Comply with applicable local, state or international regulations regarding the proper disposal of this material and/or containers.

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SECTION 14. TRANSPORTATION INFORMATION

HAZARD CLASSIFICATION: Non-hazardous
SHIPPING NAME: Not Regulated
UN NUMBER: Not Regulated

SECTION 15. REGULATORY INFORMATION

EUROPEAN INFORMATION

EINECS LISTED

EC Nos: Tetraethylammonium Hydroxide 201-073-3

RISK & SAFETY PHRASES

R34 Causes burns
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or you feel unwell, seek medical advice immediately.

INDICATIONS OF DANGER

C Corrosive

US AND INTERNATIONAL INFORMATION

HAZARDOUS LISTINGS: All ingredients appear on the TSCA Inventory of Chemical Substances.

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

SECTION 16. ADDITIONAL PRECAUTIONS AND COMMENTS

National Fire Protection Association Hazard Ratings – NFPA:

- 2 Health Hazard Rating
- 0 Flammability Rating
- 0 Reactivity Rating

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.

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MSDS Revision Information:

- A) Removed "NANO" from Trade Name.
- B) Section 15: Added European regulatory information.