

Printing date 10/20/2014

Reviewed on 10/20/2014

**1 Identification of the substance/mixture and of the company**

- **Product identifier**
- **Trade name:** PMGI 101A Developer
- **Product number:** G090015
- **Application of the substance / the mixture** Photoresist developer
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MicroChem Corp.  
200 Flanders Road  
Westborough, MA 01581 USA
- **Information department:**  
Product Safety  
Email: [productsafety@microchem.com](mailto:productsafety@microchem.com)
- **Emergency telephone number:**  
MicroChem Corp : 617-965-5511  
Chemtec USA Emergency : 800-424-9300  
Chemtec International Emergency : 703-527-3887

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS05 Corrosion

Met. Corr.1 H290 May be corrosive to metals.  
Skin Corr. 1B H314 Causes severe skin burns and eye damage.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
tetraethylammonium hydroxide
- **Hazard statements**  
H290 May be corrosive to metals.  
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P390 Absorb spillage to prevent material damage.

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**P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**  
5 % of the mixture consists of component(s) of unknown toxicity.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

77-98-5	tetraethylammonium hydroxide	⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318	1-5%
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- **Additional Components:**

7732-18-5	water		75-100%
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### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.
- **After eye contact:**  
Rinse opened eye for several minutes under running water.  
Call a doctor immediately.
- **After swallowing:**  
Do not induce vomiting; immediately call for medical help.  
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

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**5 Fire-fighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**  
Wear SCBA.  
Wear fully protective suit.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation
- **Environmental precautions:**  
Do not allow product to reach sewage system or any drains.  
Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of the collected material according to regulations.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

**7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaust at the workplace.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** The product is not flammable.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:**  
Store in a cool location.  
Unsuitable material for receptacle: aluminium.  
Use polyolefine receptacles.  
Use receptacles with fluoroplastic lining.
- **Information about storage in one common storage facility:**  
Do not store together with oxidizing and acidic materials.
- **Further information about storage conditions:**  
Keep container well-sealed in cool, dry location.  
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Specific end use(s)** No further relevant information available.

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**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from food and beverages.  
Do not inhale gases / fumes / aerosols.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.  
Ensure that washing facilities are available at the work place.
- **Respiratory equipment:**  
In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
- **Protection of hands:**



Protective gloves

- **Material of gloves**  
Nitrile rubber, NBR  
Rubber gloves
- **Penetration time of glove material** Contact glove manufacture for break-through time.
- **Eye protection:**



Tightly sealed goggles

**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Liquid
Color:	Colorless
Odor:	Amine-like
Odour threshold:	Not determined.

- **pH-value:** Alkaline

- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)

- **Flash point:** Not applicable.

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· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
· <b>Auto igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Vapor pressure at 20 °C (68 °F):</b>	23 hPa (17 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	1.0005 g/cm <sup>3</sup> (8.349 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Other information</b>	No further relevant information available.

**10 Stability and reactivity**

- **Reactivity**
- **Chemical stability** Stable under normal use conditions
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions**  
Reacts with various metals.  
Strong exothermic reaction with acids.  
Reacts with alkaline metals.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**  
Strong oxidizing agents  
Strong acids
- **Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Nitrogen oxides (NO<sub>x</sub>)  
triethylamine

**11 Toxicological information**

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**  
· **on the skin:** Strong caustic effect on skin and mucous membranes.  
· **on the eye:** Strong irritant with the danger of severe eye injury.

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- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Corrosive  
Irritant
- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

- **NTP (National Toxicology Program)**

None of the ingredients are listed.

**12 Ecological information**

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.  
Disposal must be made in accordance with Federal, State, and Local regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made in accordance with Federal, State, and Local regulations.

**14 Transport information**

- |                                  |   |
|----------------------------------|---|
| • <b>UN-Number</b>               |   |
| • <b>DOT, ADR, IMDG, IATA</b>    | UN3267  |
| • <b>UN proper shipping name</b> |   |
| • <b>DOT, IMDG, IATA</b>         | CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.<br>(tetraethylammonium hydroxide)      |
| • <b>ADR</b>                     | 3267 CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.<br>(tetraethylammonium hydroxide) |

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• Transport hazard class(es)

• DOT



• Class 8 Corrosive substances.  
• Label 8

• ADR, IMDG, IATA



• Class 8 Corrosive substances  
• Label 8

• Packing group

• DOT, ADR, IMDG, IATA II

• Environmental hazards:

• Marine pollutant: No

• Special precautions for user

Warning: Corrosive substances

• Danger code (Kemler):

80

• EMS Number:

F-A,S-B

• Segregation groups

Alkalis

• Transport in bulk according to Annex II of  
MARPOL 73/78 and the IBC Code

Not applicable.

• UN "Model Regulation":

UN3267, CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.  
(tetraethylammonium hydroxide), 8, II

## 15 Regulatory information

• Safety, health and environmental regulations/legislation specific for the substance or mixture

• Sara

• Section 355 (extremely hazardous substances):

None of the ingredients are listed.

• Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

• TSCA (Toxic Substances Control Act):

All ingredients are listed or comply with TSCA regulations.

• Proposition 65

• Chemicals known to cause cancer:

None of the ingredients are listed.

• Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

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• **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

• **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

• **Carcinogenic categories**

• **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

• **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

• **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

• **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

• **New Jersey State Right To Know List**

77-98-5 tetraethylammonium hydroxide

7732-18-5 water

• **Pennsylvania Hazardous Substances List**

77-98-5 tetraethylammonium hydroxide

7732-18-5 water

• **California SCAQMD Rule 443.1 VOC's: Not applicable**

• **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

• **Hazard pictograms**



GHS05

• **Signal word** Danger

• **Hazard-determining components of labeling:**

tetraethylammonium hydroxide

• **Hazard statements**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

• **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P390 Absorb spillage to prevent material damage.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Department issuing MSDS:** Product safety department
- **Contact:** Mr. Cole

- **Revision History:**

*The business address of the manufacturer in Section 1 was updated. The contact person in Section 16 was updated.*

- **Date of preparation / last revision** 10/20/2014 / 4

- **Abbreviations and acronyms:**

*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*

*ICAO: International Civil Aviation Organization*

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*ELINCS: European List of Notified Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*