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 preparation:** Photoresist

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** MicroChem Corp
    90 Oak Street, PO Box 426
    Newton, MA 02464-0002
  - **Information department:**
    Product Safety
    Email: productsafety@microchem.com
  - **Emergency telephone number:**
    MicroChem Corp: 617-965-5511
    Chemtrec USA Emergency: 800-424-9300
    Chemtrec International Emergency: 703-527-3887

2 Composition/information on ingredients

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

- **Dangerous components:**
  - 77-98-5 tetraethylammonium hydroxide
  - H314; H318 1-5%

- **Additional Components:**
  - Water 75-100%

3 Hazards identification

- **Classification of the substance or mixture**
  - GHS05 Corrosion
    - H314 Causes severe skin burns and eye damage.
  - **Label elements**
    - **GHS label elements:** The product is classified and labelled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS05

- **Signal word:** Danger
  - **Hazard-determining components of labelling:**
    - Tetraethylammonium hydroxide
  - **Hazard statements**
    - H314 Causes severe skin burns and eye damage.
  - **Precautionary statements**
    - P101 If medical advice is needed, have product container or label at hand.

(Contd. on page 2)
Trade name: PMGI 101A Developer

P102 Keep out of reach of children.
P103 Read label before use.
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.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:
  · NFPA ratings (scale 0 - 4)
    Health = 2
    Fire = 0
    Reactivity = 0
  · HMIS-ratings (scale 0 - 4)
    HEALTH Health = 2
    FIRE Fire = 0
    REACTIVITY Reactivity = 0

4 First aid measures

· After inhalation:
  Supply fresh air.
  Seek medical treatment in case of complaints.
· After skin contact:
  Immediately wash with water and soap and rinse thoroughly.
  Seek medical treatment.
· After eye contact:
  Rinse opened eye for several minutes under running water and then consult a doctor.
· After swallowing:
  Seek immediate medical advice.

5 Firefighting measures

· Suitable extinguishing agents:
  CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· Special hazards arising from the substance or mixture: No further relevant information available.
· Protective equipment: Wear SCBA.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
· Environmental precautions: Do not allow to enter sewers/surface or ground water.
· Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Ensure adequate ventilation.
· Reference to other sections
  See Section 7 for information on safe handling.
Trade name: PMGI 101A Developer

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:** No special measures required.
- **Storage:**
  - **Requirements to be met by storerooms and containers:** No special requirements.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **Personal protective equipment:**
  - **General protective and hygienic measures:**
    Keep away from food and beverages.
    Immediately remove all soiled and contaminated clothing.
    Wash hands before breaks and at the end of work.
    Avoid contact with the eyes and skin.
  - **Respiratory equipment:**
    In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
  - **Protection of hands:**
    - **Material of gloves**
      The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
      - **Penetration time of glove material** Contact glove manufacture for break-through time.
  - **Eye protection:**
    - **Tightly sealed goggles**
### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Fluid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Amine-like</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>pH-value</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range</td>
<td>Undetermined.</td>
</tr>
<tr>
<td>Boiling point/Boiling range</td>
<td>100°C (212 °F)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gaseous)</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Ignition temperature</strong></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>Danger of explosion</strong></td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td><strong>Explosion limits</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Upper</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Vapor pressure at 20°C (68 °F):</strong></td>
<td>23 hPa (17 mm Hg)</td>
</tr>
<tr>
<td><strong>Density at 20°C (68 °F):</strong></td>
<td>1.0005 g/cm³ (8.349 lbs/gal)</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with Water:</strong></td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td><strong>Segregation coefficient (n-octanol/water):</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td></td>
</tr>
<tr>
<td>No further relevant information available.</td>
<td></td>
</tr>
</tbody>
</table>

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 04/19/2012
Reviewed on 04/19/2012

Trade name: PMGI 101A Developer

(Contd. of page 4)

34.1.12

12 Ecological information

- **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.
- **Additional ecological information:**
- **General notes:**
  Water hazard class 1 (Self-assessment): slightly hazardous for water
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

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

14 Transport information

- **UN-Number**
  DOT, ADR, ADN, IMDG, IATA Void

- **UN proper shipping name**
  DOT, ADR, ADN, IMDG, IATA Void

- **Transport hazard class(es)**
  DOT, ADR, ADN, IMDG, IATA Void

- **Packing group**
  DOT, ADR, IMDG, IATA Void

- **Environmental hazards:**
  Marine pollutant: No

- **Special precautions for user**
  Not applicable.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  Not applicable.

- **Transport/Additional information:**
  Not Regulated

- **UN "Model Regulation":** -

(Contd. on page 6)
### 15 Regulatory information

- **Sara**
  - **Section 355 (extremely hazardous substances):** None of the ingredients is 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 is listed.
  - **Chemicals known to cause reproductive toxicity for males:** None of the ingredients is listed.
  - **Chemicals known to cause developmental toxicity:** None of the ingredients is listed.

- **Carcinogenic categories**
  - **EPA (Environmental Protection Agency)** None of the ingredients is listed.
  - **IARC (International Agency for Research on Cancer)** None of the ingredients is listed.
  - **NTP (National Toxicology Program)** None of the ingredients is listed.
  - **TLV (Threshold Limit Value established by ACGIH)** None of the ingredients is listed.
  - **NIOSH-Ca (National Institute for Occupational Safety and Health)** None of the ingredients is listed.
  - **OSHA-Ca (Occupational Safety & Health Administration)** None of the ingredients is listed.

- **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**
  - GHS05

- **Signal word** Danger
- **Hazard-determining components of labelling:** tetraethylammonium hydroxide
- **Hazard statements**
  - **H314** Causes severe skin burns and eye damage.
- **Precautionary statements**
  - **P101** If medical advice is needed, have product container or label at hand.
34.1.12

P102 Keep out of reach of children.
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P310 Immediately call a POISON CENTER or doctor/physician.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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. Bedet
- **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
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)