MATERIAL SAFETY DATA SHEET
AZ® 300 MIF Developer

Substance key: BBG70N4  
Version: 1 - 4 / USA  
Revision Date: 01/11/2005  
Date of printing: 05/06/2005

Section 01 - Product Information

Identification of the company: AZ Electronic Materials USA Corp.
70 Meister Ave  
Somerville, NJ 08876.  
Telephone No.: +1 908-429-3562

Information of the substance/preparation:  
Product Safety: +1 908-429-3562

Emergency tel. number: +1 800-424-9300 CHEMTREC

Trade name: AZ® 300 MIF Developer
Material number: 184411
Chemical family: Aqueous Basic Developer

Section 02 - Composition information on hazardous ingredients

Hazardous ingredients:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-no. (Trade secret no.)</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetramethylammonium hydroxide</td>
<td>75-59-2</td>
<td>2 %</td>
</tr>
</tbody>
</table>

Non-hazardous ingredients:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-no. (Trade secret no.)</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>98 %</td>
</tr>
</tbody>
</table>

Section 03 - Hazards identification


Expected Route of entry:
- Inhalation: No hazard in normal industrial use.
- Skin contact: Causes moderate skin irritation.
- Eye contact: Causes moderate eye irritation.
- Ingestion: May be harmful if swallowed.

Health effects of exposure:
Section 04 - First aid measures

After inhalation:
Remove victim to fresh air.
Consult physician if irritation occurs.

After contact with skin:
Consult physician if exposure is extensive or if irritation occurs.
Immediately remove contaminated clothing and wash affected area thoroughly with soap and water.

After contact with eyes:
Flush thoroughly with water for 15 minutes. Get immediate medical help.

After ingestion:
If person is conscious, give water or milk to dilute stomach contents.
Never give anything by mouth to an unconscious person.
Consult physician.
Do not induce vomiting.

Advice to doctor / Treatment:
A component of this material causes severe acute toxicity in experimental animals by the oral or dermal route of exposure. Exposed individuals should be carefully observed and treated according to symptoms.

Section 05 - Fire fighting measures

Flashpoint: 
Water-based material with low organic content, Compatible with extinguishing agents.

Section 06 - Accidental release measures

Steps to be taken in case of spill or leak:
Wearing appropriate personal protective equipment, contain spill, collect onto inert absorbent, and place in a suitable container.
Rinse residual with water.

Section 07 - Handling and storage
Advice on safe handling:
Use only with adequate ventilation and proper protective eyewear, gloves, and clothing.

Further info on storage conditions:
Store at appropriate temperature. See label for details.
Store in original container.
Keep from freezing.

Section 08 - Exposure controls / personal protection
Other protective equipment: Clothing suitable to prevent skin contact.
Advice on system design: Where mist is present, provide local exhaust ventilation or a respirator certified for mist by NIOSH.

Section 09 - Physical and chemical properties
Form: Liquid
Color: Clear, colorless
Odor: Slight amine odor
pH: 13.3
Solubility in water: soluble
Density: 1 g/cm³
Boiling point: 212 °F
Loss on drying: 97.6 %

Section 10 - Stability and reactivity
Chemical stability: Stable
Hazardous Polymerization: Will not occur.
Conditions to avoid: Avoid contact with strong acids. This product is expected, by test or analogy, to slowly attack aluminum and perhaps other nonferrous metals, releasing hydrogen gas.

Section 11 - Toxicological information
Product information:
Acute oral toxicity: Testing in animals shows that this material is, harmful (rat acute oral LD50 between 500 and 5000mg/kg).

Component Information:
Tetramethylammonium hydroxide (75-59-2)
Acute oral toxicity: LD50 50 mg/kg as chloride salt (rat)
Acute inhalation toxicity: No data.
Acute dermal toxicity: LD50 25 mg/kg (Guinea pig) not determined

Section 12 - Ecological information

Component information:
Tetramethylammonium hydroxide (75-59-2)
Fish toxicity: LC50 35.1 mg/l
Daphnia toxicity: EC50 0.21 mg/l
Algae toxicity: No data available.

Section 13 - Disposal considerations

Waste disposal information:
Consult local, state, and federal regulations.
This product would be considered a hazardous waste under RCRA due to high pH unless neutralized prior to disposal.

Section 14 - Transport information

DOT not restricted

IATA
Proper shipping name: Caustic alkali liquid, n.o.s
Class: 8
Packing group: III
UN/ID number: UN 1719
Primary risk: 8
Hazard inducer(s): Tetramethylammonium hydroxide

IMDG
Proper shipping name: Caustic alkali liquid, n.o.s
Class: 8
Packing group: III
UN no.: UN 1719
Primary risk: 8
Hazard inducer(s): Tetramethylammonium hydroxide
EmS: F-A S-B

Further information:
Classification due to corrosivity of aluminum.
This product is not regulated for surface transportation, based on 49 CFR 173.154(d)(1).
Section 15 - Regulatory information

TSCA Status:
All components of this product are listed on the TSCA inventory.

SARA (section 311/312):
- Reactive hazard: no
- Pressure hazard: no
- Fire hazard: no
- Immediate/acute: yes
- Delayed/chronic: no

SARA 313 information:
This product is not subject to SARA Title III Section 313 reporting requirements under 40 CFR 372.
Section 16 - Other information

Other precautions:
The tetramethylammonium ion (TMA), as TMAH, in this developer is toxic at low levels to the
water flea cerodaphnia dubia (CD) used in the whole effluent toxicity (WET) biomonitoring test.
Data from the supplier suggests that continuous input of 60-100 ppm TMA to a small POTW
should not cause WET toxicity. It is expected that discharges to a sizable POTW will not affect
the ability to pass the WET tests. However, discharges to a small POTW or direct discharges to
surface waters should be carefully reviewed. Contact AZ Electronic Materials Product Safety
for additional information (908-429-3593 or 908-429-3562).

Label information:

DANGER!

Alkaline solution. Contains material that may be highly toxic. May cause severe skin and
eye irritation. May cause corneal damage. Dry or concentrated residue may be
corrosive.

Avoid breathing mist, and avoid contact with skin, eyes, and clothing. Use only with
adequate ventilation, and proper protective eyewear, gloves, and clothing. Wash
thoroughly after handling. Keep container closed.

In case of contact, flush eyes with plenty of water for 15 minutes. Get medical attention
immediately. Flush affected skin areas with water, and wash with mild soap and water.
Remove contaminated clothing. If INHALED, remove individual to fresh air. If breathing
is difficult, give oxygen. If ingested, give water or milk to dilute stomach contents. Do not
induce vomiting. Never give anything by mouth to an unconscious person. Get medical
attention immediately for ingestion or breathing problems or if skin contact is extensive.

If spilled, wear protective clothing, absorb with inert material, collect and place in a
chemical waste container. Rinse residue with water.

Keep sealed in original container. Avoid freezing and direct sunlight. Product should be
stored > 32 F (0 C). Empty container may contain harmful residue.

The solvent in this product is not photochemically reactive per Rule 102 of the California
South Coast Air Quality Management District.

NFPA:

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Special Notice</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>NONE</td>
</tr>
</tbody>
</table>

This information is supplied under the OSHA Hazard Communication Standard, 29 CFR
1910.1200, and is offered in good faith based on data available to us that we believe to be
true and accurate. The recommended industrial hygiene and safe handling procedures are
believed to be generally applicable to the material. However, each user should review these
recommendations in the specific context of the intended use and determine whether they are
appropriate for that use. No warranty, express or implied, is made regarding the accuracy of
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