SECTION 1. IDENTIFICATION

Product identifier
Product name : AZ 400K Developer 1:3

Product number : 184433

Recommended use of the chemical and restrictions on use
Recommended use : Intermediate for electronic industry

Details of the supplier of the safety data sheet
Company : EMD Performance Materials Corp., an Affiliate of Merck KGaA,
Darmstadt, Germany, 1200 Intrepid Avenue, Suite 300,

Emergency telephone : 1-800-424-9300 CHEMTREC (USA)
1-703-741-5970 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Corrosive to Metals : Category 1
Eye irritation : Category 2A
Reproductive toxicity : Category 2

GHS label elements
Hazard pictograms : 

Signal Word : Warning

Hazard Statements : H290 May be corrosive to metals.
H319 Causes serious eye irritation.
H361f Suspected of damaging fertility.
Precautionary Statements:

**Prevention:**
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P234 Keep only in original container.
- P264 Wash skin thoroughly after handling.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P390 Absorb spillage to prevent material damage.

**Storage:**
- P405 Store locked up.
- P406 Store in corrosive resistant container with a resistant inner liner.

**Disposal:**
- P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**
None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance / Mixture:** Mixture

<table>
<thead>
<tr>
<th>Hazardous ingredients</th>
<th>Concentration (% w/w)</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium borate</td>
<td>&gt;= 1 - &lt; 5</td>
<td>20786-60-1</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES

**If inhaled:** Fresh air.

**In case of skin contact:** Take off immediately all contaminated clothing. Rinse skin with water/ shower.
In case of eye contact: Rinse out with plenty of water. Remove contact lenses.

If swallowed: Make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Most important symptoms and effects, both acute and delayed: We have no description of any toxic symptoms.

Notes to physician: No information available.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during fire fighting: Not combustible.

Ambient fire may liberate hazardous vapors.

Further information: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Advice for non-emergency personnel:
Do not breathe vapors, aerosols.
Evacuate the danger area, observe emergency procedures, consult an expert.
Advice for emergency responders:
Protective equipment see section 8.
Indications about waste treatment see section 13.

Environmental precautions: No special precautionary measures necessary.

Methods and materials for containment and cleaning up: Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent and neutralizing material (e.g.
Chemizorb® OH⁻, Art. No. 101596). Dispose of properly. Clean up affected area.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling
Advice on safe handling: Observe label precautions. Avoid contact with skin, eyes and clothing.

Conditions for safe storage, including any incompatibilities
Conditions for safe storage: Store in original container. No metal containers.

Storage conditions: Tightly closed.

Risks from decomposition products: see section 10

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium borate</td>
<td>20786-60-1</td>
</tr>
</tbody>
</table>

Engineering measures: Ensure that eye flushing systems and safety showers are located close to the working place. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See section 7.

Personal protective equipment

Respiratory protection: Not required; except in case of aerosol formation.

Hand protection
Additional Protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products.

Eye protection: Safety glasses

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands and face before breaks and immediately after
handling the product.
Keep away from food and drink.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>clear colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available.</td>
</tr>
<tr>
<td>pH</td>
<td>12</td>
</tr>
<tr>
<td>Melting point</td>
<td>No information available.</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>approximately 212 °F (100 °C)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Note: not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Density</td>
<td>1.022 g/cm3</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>miscible in all proportions</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available.</td>
</tr>
</tbody>
</table>
SECTION 10. STABILITY AND REACTIVITY

Reactivity : See below

Chemical stability : The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions : The generally known reaction partners of water.

Conditions to avoid : No information available

Incompatible materials : Metals
                        Acids
                        Bases
                        Oxidizing agents

Hazardous decomposition products : No information available

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Product
Carcinogenicity
IARC : No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA : No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP : No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
Likely route of exposure
Eye contact, Skin contact

Skin irritation
Rabbit
Result: No skin irritation
(in analogy to similar compounds)

Eye irritation
Rabbit
Result: Eye irritation

CMR effects
Teratogenicity / Reproductive toxicity:
Suspected of damaging fertility.

Experience with human exposure
Other Relevant Toxicity Information:
Handle in accordance with good industrial hygiene and safety practice.

Components

Potassium borate (20786-60-1):
CMR effects
Reproductive toxicity:
Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Product

Persistence and degradability
No information available.

Bioaccumulative potential
Partition coefficient: n-octanol/water
No data available

Mobility in soil
No information available.

Additional ecological information
No ecological problems are to be expected when the product is handled and used with due care and attention.
Components

Potassium borate (20786-60-1):

Partition coefficient: n-octanol/water
log Pow: -1.09 (22 °C) (ECHA)

SECTION 13. DISPOSAL CONSIDERATIONS

Product Waste: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14. TRANSPORT INFORMATION

DOT / 49CFR
UN/ID/NA number: UN 1814
Proper shipping name: Potassium hydroxide, solution

Class: 8
Packing group: III
Labels: CORROSIVE
ERG Code: 154
Marine pollutant: no
Remarks: LTD QTY <= 5 L or 5 KG net capacity, as per 49 CFR 173.154

International Regulations

IATA-DGR
UN No.: UN 1814
Proper shipping name: Potassium hydroxide solution
Class: 8
Packing group: III
Labels: Corrosive
Packing instruction (cargo aircraft): 856
Packing instruction (passenger aircraft): 852

IMDG-Code
UN number: UN 1814
Proper shipping name: POTASSIUM HYDROXIDE SOLUTION

Class: 8
Packing group: III
Labels: 8
EmS Code: F-A, S-B
Marine pollutant: no
Remarks: Alkalis

Special precautions for user
Not applicable

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know
CERCLA Reportable Quantity
Potassium hydroxide 1310-58-3 1000lbs

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act
The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
Potassium hydroxide 1310-58-3

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:
Potassium hydroxide 1310-58-3

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know
Potassium hydroxide 1310-58-3

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

TSCA : All substances listed on the TSCA Active Inventory.

SECTION 16. OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.