SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : AZ P4210 Photoresist
Material No. : 10490923159
Product Use Description : Intermediate for electronic industry

Company : AZ Electronic Materials USA Corp.
70 Meister Ave.
Somerville, NJ 08876

Telephone : 1-908-429-3552
Telefax : 1-908-429-9932

Emergency telephone number : 1-800-424-9300 (CHEMTREC)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards : COMBUSTIBLE LIQUID AND VAPOUR;
IRRITANT

GHS Classification
Signal word : Warning
Hazard category, Hazard class : Flammable liquids, Category 3
Hazard category, Hazard class : Eye irritation, Category 2A
Hazard category, Hazard class : Specific target organ toxicity - single exposure, Category 3

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Methoxy-2-propanol acetate</td>
<td>108-65-6</td>
<td>65 - 70</td>
</tr>
<tr>
<td>Diazonaphthoquinonesulfonic esters</td>
<td>678290000004-6623P</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>
Non-hazardous ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cresol novolak resin</td>
<td>67820000004-5653P</td>
<td>25 - 30</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

First aid procedures

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.

Skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Eye contact: Remove contact lenses. Flush eyes with water at least 15 minutes. Get medical attention if eye irritation develops or persists.

Ingestion: Keep respiratory tract clear. If conscious, drink plenty of water. Never give anything by mouth to an unconscious person. Obtain medical attention.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point: 112 °F (44 °C)
Method: closed cup

Fire fighting

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Further information: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Cool containers / tanks with water spray.

Protective equipment and precautions for firefighters

Specific hazards during fire: As the product contains combustible organic components, fire
will produce dense black smoke containing hazardous products of combustion (see section 10).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Environmental precautions : Do not allow entry to drains, water courses or soil. Prevent spreading by use of suitable barriers. Local authorities should be advised if significant spillages cannot be contained.

Methods for containment / Methods for cleaning up : Wearing appropriate personal protective equipment, contain spill, ventilate area of spill or leak, remove all sparking devices or ignition sources, collect onto inert absorbent, and place in a suitable container.

SECTION 7. HANDLING AND STORAGE

Handling : Do not breathe vapours or spray mist. Do not get on skin or clothing. For personal protection see section 8. Use only in area provided with appropriate exhaust ventilation.

Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Take measures to prevent the build up of electrostatic charge. Avoid shock and friction.

Storage : Keep container tightly closed in a dry and well-ventilated place. May liberate combustible solvent vapors. Store at appropriate temperature. See label for details.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Methoxy-2-propanol acetate</td>
<td>106-65-5</td>
<td>TWA: 50 ppm</td>
<td>US WEEL</td>
</tr>
</tbody>
</table>

Engineering measures
Engineering measures : Handle only in a place equipped with local exhaust (or other appropriate exhaust).

Personal protective equipment
Eye protection : Safety eyewear to protect against splashes.
Hand protection : Solvent-resistant gloves
Skin and body protection : Clothing suitable to prevent skin contact.
Respiratory protection : In the case of vapour formation use a respirator with an approved filter. Respirator with filter for organic vapour. Use NIOSH approved respiratory protection.
Hygiene measures : Observe the usual precautions when handling chemicals.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form : Liquid
Color : Clear, amber-red
Odor : Strong, characteristic odor.

Safety data
Flash point : 112 °F (44 °C)
Method: closed cup
Starts to boil : 293 °F (145 °C)
Vapour pressure : 3.2 Torr
at 68 °F (20 °C)
Density : ca. 1 g/cm³
at 60 °F (20 °C)
Water solubility : The solvent is partially water soluble but the product forms two layers.
VOC : 685 g/l (Calculated value)
Loss on drying : < 70 %
SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid
Avoid contact with oxidizing agents.
Avoid contact with strong acids.
Avoid contact with alkaline materials.

Hazardous decomposition products
Hazardous decomposition products due to incomplete combustion.
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

Hazardous reactions
Hazardous polymerisation does not occur.

Chemical stability
Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Data for AZ P4210 Photoresist
Further information
No toxicological testing was carried out on the preparation.

Data for 1-Methoxy-2-propanol acetate (108-65-6)

Acute oral toxicity
LD50: 8,532 mg/kg
Species: rat

Acute inhalation toxicity
LC50: > 23.8 mg/l
Exposure time: 6 h
Species: rat

Acute dermal toxicity
LD50: > 5,000 mg/kg
Species: rabbit

Skin irritation
Result: non-irritant

Eye irritation
Result: Mild eye irritation

Sensitisation
Species: Guinea pig
Result: non-sensitizing
SAFETY DATA SHEET
AZ P4210 Photoresist
Substance No.: GHSB8G7099
Version 3.2
Revision Date 11/08/2011
Print Date 02/10/2012

Data for Diazonaphthoquinonesulfonic esters (57829000004-5546P)

Acute oral toxicity
LD50 Oral: > 5,000 mg/kg
Species: Rat
By analogy with a similar product.

Skin irritation
Species: Rabbit
Result: No skin irritation

Eye irritation
Species: Rabbit
Result: Slight irritant effect - does not require labelling
Classification: Not irritating

12. ECOLOGICAL INFORMATION

Data for AZ P4210 Photoresist:
Additional ecological information
No ecological testing was carried out on the preparation.

Data for 1-Methoxy-2-propanol acetate (108-65-6)

Ecotoxicity effects

Toxicity to fish
LC50: 100 - 180 mg/l Exposure time: 96 h
Species: Oncorhynchus mykiss

LC50: 161 mg/l Exposure time: 96 h
Species: Fish general (Pikes)

NOEC: 100 mg/l Exposure time: 96 h
Species: Fish general (Pikes)

Toxicity to daphnia and other aquatic invertebrates.
EC50: > 500 mg/l
Species: Daphnia magna

Toxicity to bacteria
EC20: 1,000 mg/l
Exposure time: 30 min
Species: Activated sludge
Elimination information (persistence and degradability)

Biodegradability
- Method: OECD 302 B
- The product is biodegradable.

Data for Diazonaphthoquinonesulfonic esters (67829000004-5546P)

Ecotoxicity effects
- Toxicity to fish: LC50: 20 - 50 mg/l Exposure time: 96 h
  Species: Danio rerio (zebra fish)
  By analogy with a similar product.
- Toxicity to bacteria: EC50: > 1,000 mg/l
  Method: OECD 209

Elimination information (persistence and degradability)

Biodegradability: Result: not degradable
- Method: OECD 301 D

Further information on ecology
- Chemical Oxygen Demand (COD): 1,716 mg/g

SECTION 13. DISPOSAL CONSIDERATIONS

Further information: Dispose of as hazardous waste in compliance with local and national regulations.
For disposal, this material is a flammable hazardous waste under RCRA.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

RCRA hazardous waste: RCRA number: D001
Yes -- If it becomes a waste as sold.
SECTION 14. TRANSPORT INFORMATION

DOT
Not restricted

IATA
UN number : 1993
Description of the goods : Flammable liquid, n.o.s.
(2-Methoxy-1-methylethyl acetate)
Class : 3
Packing group : III
Labels : 3
Environmentally hazardous : no
Additional data for transport : PASSENGER AIRCRAFT SHIPMENT OF GLASS CONTAINERS >2.5L NOT PERMITTED. CARGO AIRCRAFT ONLY!

IMDG
UN number : 1993
Description of the goods : FLAMMABLE LIQUID, N.O.S.
(2-Methoxy-1-methylethyl acetate)
Class : 3
Packing group : III
Labels : 3
EmS Number 1 : F-E
EmS Number 2 : S-E
Marine pollutant : no
Environmentally hazardous : no

SECTION 15. REGULATORY INFORMATION

Notification status

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

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

WHMIS Classification : B3: Combustible Liquid
Canadian PBT Chemicals: This product does not contain any components on the DSL that are classified as Persistent, Bioaccumulative and Toxic (PBT) under CEPA.

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

Carcinogenicity
IARC No component 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 identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

EPCRA - Emergency Planning and Community Right-to-Know Act
SARA 302 Reportable Quantity: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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

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

Clean Air Act
Ozone-Depletion Potential: 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).

US. Clean Air Act - Hazardous Air Pollutants (HAP)
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).
SAFETY DATA SHEET
AZ P4210 Photoresist
Substance No.: GHBBG7099
Version 3.2
Revision Date 11/08/2011
Print Date 02/10/2012

US. Clean Air Act Section 112(r): Regulated toxic and flammable substances 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 112(r) for
Accidental Release Prevention (40 CFR 68.130, Subpart F).

US. Clean Air Act Section 111 SOCMI Intermediate or Final Volatile Organic Compounds (VOC) -
40 CFR part 60.489
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
This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act,
Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act,
Section 311, Table 117.3.

US State Regulations

| Massachusetts Right To Know Components | : No components are subject to the Massachusetts Right to Know Act. |
| Pennsylvania Right To Know Components | : 1-Methoxy-2-propanol acetate 108-65-6 |
|                                         | Cresol novolak resin 67829000004-5653P |
|                                         | Diazonaphthoquinonesulfonic esters 67829000004-5623P |
| New Jersey Right To Know Components     | : 1-Methoxy-2-propanol acetate 108-65-6 |
|                                         | Cresol novolak resin 67829000004-5653P |
|                                         | Diazonaphthoquinonesulfonic esters 67829000004-6623P |
| California Prop. 65 Components          | : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm. |
SECTION 16. OTHER INFORMATION

Further information

HMIS Classification: Health hazard: 2
Flammability: 2
Reactivity: 0
PPE: X

NFPA Classification: Health hazard: 2
Fire Hazard: 2
Reactivity Hazard: 0
Special Hazards: NONE

GHS-Labeling

Symbol(s): Flammable liquid and vapour.

Signal word: Warning

Hazard statements: Causes eye irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.

Precautionary statements: Prevention:
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or if you feel unwell:
Get medical advice/attention.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:
Store in a well-ventilated place. Keep cool.
Store in a closed container.
Disposal:
Dispose of contents/container to an approved waste disposal plant.

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 this data, the hazards connected with the use of the material, or the results to be obtained from the use thereof. We assume no responsibility for damage or injury from the use of the product described herein. Data provided here are typical and not intended for use as product specifications.

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