SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : AZ LExp.KDB087F 42
Product Use Description : Intermediate for electronic industry
Company : AZ Electronic Materials USA Corp.
70 Meister Ave.
Somerville, NJ 08876
Telephone : 1-908-429-3562
Telefax : 1-908-429-5982
Emergency telephone number : 1-800-424-9300 (CHEMTREC)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards : FLAMMABLE LIQUID
IRRITANT

GHS Classification
Signal word : Warning
Hazard category, Hazard class : Flammable liquids, Category 3
Skin Irritation, Category 3
Eye irritation, Category 2B
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</td>
<td>107-98-2</td>
<td>55 - 65</td>
</tr>
<tr>
<td>1-Methoxy-2-propanol acetate</td>
<td>108-65-6</td>
<td>25 - 35</td>
</tr>
<tr>
<td>Ethyl lactate</td>
<td>97-64-3</td>
<td>5 - 15</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>Modified methacrylate polymer</td>
<td>67829000004-6631P</td>
<td>&lt; 2</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. If symptoms persist, call a physician.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point: 91.4 °F (33.0 °C)
Propylene glycol monomethyl ether

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 fighting: 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.

Storage:
Further information on storage conditions:
- 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</td>
<td>107-98-2</td>
<td>TWA: 100 ppm</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 150 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 100 ppm (360 mg/m3)</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 150 ppm (540 mg/m3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 100 ppm (360 mg/m3)</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST: 150 ppm (540 mg/m3)</td>
<td></td>
</tr>
<tr>
<td>1-Methoxy-2-propanol acetate</td>
<td>108-65-6</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 : colourless to brownish
Odor : Characteristic odor.

Safety data
Flash point : 91.4 °F (33.0 °C)
Propylene glycol monomethyl ether
Vapour pressure : ca. 8.5 Torr
Density : 0.95 g/cm³
Water solubility : The solvent is partially water soluble but the product forms two layers.
VOC : 932 g/l (Calculated value)
Loss on drying : <= 98 %
SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid: Avoid contact with strong oxidizing agents. Contact with strong acids and bases may cause hydrolysis of product.

Hazardous decomposition products: Thermal decomposition may generate carbon dioxide and carbon monoxide, oxides of sulfur and nitrogen, and hydrogen fluoride.

Hazardous reactions: Hazardous polymerisation does not occur.

Chemical stability: Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Data for AZ LExp.KDB087F 42

Further information: No toxicological testing was carried out on the preparation.

Data for 1-Methoxy-2-propanol (107-98-2)

Acute oral toxicity: LD50: > 5,000 mg/kg
Species: rat

Acute inhalation toxicity: LC50: > 7559 ppm
Exposure time: 6 h
Species: rat

Acute dermal toxicity: LD50: 13,000 mg/kg
Species: rabbit

Skin irritation: Result: slight irritant effect - does not require labelling

Eye irritation: Result: slight irritant effect - does not require labelling

Sensitisation: Result: No evidence of sensitizing properties.
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

Data for ETHYL (S) LACTATE (687-47-8)

- **Acute oral toxicity**: LD50 Oral: 2,500 mg/kg
  Species: mouse
  Source: HSDB

- **Acute inhalation toxicity**: LC50: > 5.4 mg/l
  > 5400 mg/m3
  Exposure time: 8 h
  Species: rat

- **Acute dermal toxicity**: LD50 Dermal: > 5,000 mg/kg
  Species: rabbit
  Source: HSDB

- **Skin irritation**: Species: guinea pig
  Result: Irritating to skin.
  Method: Intradermal injection.
  Source: HSDB
Eye irritation : Species: rabbit  
Result: Severe eye irritation  
Classification: Risk of serious damage to eyes.  
Source: Supplier MSDS

Repeated dose toxicity : Species: Rats  
Application Route: Inhalation  
Exposure time: (28 d)  
Number of exposures: Daily  
NOEL: 0.6 mg/l

12. ECOLOGICAL INFORMATION

Data for AZ LExp.KDB087F 42

Additional ecological information : No ecological testing was carried out on the preparation.

Data for 1-Methoxy-2-propanol (107-98-2)

Ecotoxicity effects
Toxicity to fish : LC50: 6,812 mg/l Exposure time: 96 h  
Species: golden orfe  
LC50: 20,800 mg/l Exposure time: 96 h  
Species: Fathead minnow  
LC50: > 1,000 mg/l Exposure time: 96 h  
Species: rainbow trout

Toxicity to daphnia and other aquatic invertebrates. : EC50: > 500 mg/l  
Exposure time: 48 h  
Species: Daphnia magna

Toxicity to algae : EC50: > 1,000 mg/l  
Exposure time: 96 h  
Species: Green algae

Toxicity to bacteria : IC50: > 1,000 mg/l  
Exposure time: 3 h  
Species: activated sludge

Elimination information (persistence and degradability)

Biodegradability : 98 %
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 (rainbow trout)
- LC50: 161 mg/l Exposure time: 96 h
  Species: Fish general (Pisces)
- NOEC: 100 mg/l Exposure time: 96 h
  Species: Fish general (Pisces)

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 ETHYL (S) LACTATE (687-47-8)

Ecotoxicity effects

Toxicity to fish
- LC50: 320 mg/l Exposure time: 48 h
  Species: Fish
  Source: Supplier MSDS

Toxicity to daphnia and other aquatic invertebrates.
- EC50: 683 mg/l
  Exposure time: 48 h
  Species: Daphnia magna
  Source: Supplier MSDS
Toxicity to algae: EC50: 2,200 mg/l
Species: Selenastrum sp.
Source: Supplier MSDS

Elimination information (persistence and degradability)
Bioaccumulation: Bioaccumulation is unlikely.
Biodegradability: Readily biodegradable, according to appropriate OECD test.
Source: Supplier MSDS

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 local recyclers for disposal.
RCRA hazardous waste: RCRA number: D001
Yes -- If it becomes a waste as sold.

SECTION 14. TRANSPORT INFORMATION

DOT
UN number: 1993
Description of the goods: Flammable liquids, n.o.s.
(1-Methoxy-2-propanol, 1-Methoxy-2-propanol acetate)
Class: 3
Packing group: III
Labels: 3
Emergency Response: 128
Guidebook Number
Environmentally hazardous: no
SECTION 15. REGULATORY INFORMATION

Notification status

US.TSCA : One or more of the components of this product is not listed on the Toxic Substances Control Act (TSCA) Inventory. The product is thus sold under the restriction that it is only for use in research and development. This product must be used under the supervision of a technically qualified individual capable of understanding its potential hazards.

DSL : This product contains one or several components that are not on the Canadian DSL nor NDSL lists.

WHMIS Classification : B2: Flammable liquid

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 (De 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).

**US. Clean Air Act Section 112(r); Regulated toxic and flammable substances for Accidental Release Prevention**
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)**
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. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

US State Regulations

Massachusetts Right To Know Components:
- Ethyl lactate: 97-64-3

Pennsylvania Right To Know Components:
- 1-Methoxy-2-propanol acetate: 108-65-6
- Ethyl lactate: 97-64-3

New Jersey Right To Know Components:
- 1-Methoxy-2-propanol acetate: 108-65-6
- Ethyl lactate: 97-64-3
- Modified methacrylate polymer: 67829000004-6631P

SECTION 16. OTHER INFORMATION

Further information

HMIS Classification:
- Health hazard: 2
- Flammability: 3
- Reactivity: 0
- PPE:X

NFPA Classification:
- Health hazard: 2
- Fire Hazard: 3
- Reactivity Hazard: 0
- Special Hazards: NONE
GHS-Labelling

Symbol(s):  
![Flammable Symbol](image) ![Warning Symbol](image)

Signal word: Warning

Hazard statements: Flammable liquid and vapour. Causes mild skin irritation. Causes eye 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.
- Use only outdoors or in a well-ventilated area.
- 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: 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.
- Call a POISON CENTER or doctor/physician if you feel unwell.
- If skin irritation occurs: Get medical advice/attention.
- If eye irritation persists: 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 container tightly closed.
- Store in a well-ventilated place. Keep cool.
- Store locked up.

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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