

MATERIAL SAFETY DATA SHEET

AZ P4620 Photoresist (US)

Substance key: SXR091665
Version : 1 - 1 / USA

Revision Date: 10/31/2002
Date of printing :07/15/2004

Section 01 - Product Information

Identification of the company:	Clariant Corporation 70 Meister Avenue Somerville, NJ 08876 Telephone No.: +1 (800) 515-4164
Information of the substance/preparation:	Electronic Materials Product Safety 1-908-429-3562
Emergency tel. number:	+1 800-424-9300 CHEMTREC

Trade name: AZ P4620 Photoresist (US)
Material number: 105671
Chemical family: A mixture of polymer resins and diazo compounds in halogen free organic solvent.

Section 02 - Composition information on hazardous ingredients

OSHA hazardous ingredients:

Component	CAS-no. (Trade secret no.)	Concentration
1-Methoxy-2-propanol acetate	108-65-6	62 %

Section 03 - Hazards identification

Emergency overview: Amber-red liquid with characteristic odor. Partially dissolves in water leaving a floating viscous mass. OSHA combustible liquid; DOT flammable liquid. Irritating on contact or inhalation.

Expected Route of entry:

Inhalation: yes
Skin contact: yes
Eye contact: Contact with liquid and vapors.
Ingestion: no
Skin absorption: yes

Health effects of exposure:

Eye: Causes eye irritation. Skin: Causes skin irritation. Ingestion: May be harmful if swallowed. Inhalation: Single exposure unlikely to be hazardous. High vapor concentration causes irritation to the nose, throat, and lungs. Systemic Effects: No hazard in normal industrial use. Reproductive & birth defects: Exposures having no adverse effect on the mother should have no effect on the fetus.

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1-Methoxy-2-propanol acetate (108-65-6)
1-Methoxy-2-propanol acetate (PGMEA) can cause skin, eye, and respiratory irritation. Extreme or prolonged exposure may cause gastric and central nervous system effects. Long term, high level exposure to PGMEA has resulted in adverse effects to the livers and kidneys of experimental animals. PGMEA is readily absorbed through intact skin.

Known effects on other illnesses: Preexisting skin, eye, and respiratory conditions may be aggravated.

Listed carcinogen: IARC: NO NTP: NO OSHA: NO

HMIS:

Health: 2	Flammability: 2	Reactivity: 0	Personal protection: X
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Section 04 - First aid measures

After inhalation:

Remove victim to fresh air.
Consult physician if irritation occurs.

After contact with skin:

Immediately remove contaminated clothing. Flush affected area thoroughly with water. After flushing with water, remove residue with soap and water. If necessary, clean area with a cloth or paper towel wetted with acetone. Assure adequate ventilation. Dispose of cloth/towel in a suitable receptacle.
Consult physician if exposure is extensive or if irritation occurs.

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.

Advice to doctor / Treatment:

Administer oxygen if there is difficulty in breathing.

Section 05 - Fire fighting measures

Flashpoint: 100 °F
Method: closed cup

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

Extinguishing media: Carbon dioxide, water, alcohol foam, dry chemical.

Fire-fighting further advice:

Use self-contained breathing apparatus and full protective clothing.
Use water spray to cool drums in fire area.

Hazards during fire-fighting:

Solvent vapors.
Emits toxic fumes under fire conditions.

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Section 06 - Accidental release measures

Steps to be taken in case of spill or leak:

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 07 - Handling and storage

Advice on safe handling:

Keep away from heat and flame.
Avoid breathing vapors and 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.

Further info on storage conditions:

Store at appropriate temperature. See label for details.
Store in original container.
Transport and store under dry conditions tightly closed and protected from heat and light.
Pressure may build up slowly in closed containers due to gradual decomposition. This is accelerated by heat and light. May liberate combustible solvent vapors.

Section 08 - Exposure controls / personal protection

Occupational exposure limits:

Component	CAS number:	Regulatory list	Type of value	Value 1	Value 2
PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE	108-65-6	US WEEL Guides Data	Time Weighted Average (TWA):	100 ppm	541 mg/m ³

Respiratory protection: Chemical cartridge respirator recommended for exposures exceeding TLV.

Hand protection: Rubber gloves.

Eye protection: Safety eyewear to protect against splashes.

Body protection: Clothing suitable to prevent skin contact.

Advice on system design: Use local exhaust ventilation.

Section 09 - Physical and chemical properties

Form: Liquid
Color: Clear, amber-red
Odor: Strong, characteristic odor.
pH: Not applicable

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Solubility in water:	The solvent is water soluble but the product forms two layers.
Density:	approx. 1.07 g/cm ³ (20 °C)
Starts to boil :	from 273.2 °F
Evaporation number:	0.33 (PGMEA)
Vapor pressure:	2.2 Torr Method: calculated
Viscosity / (dynamic):	486 mPa.s (20 °C)
Loss on drying:	62 %

Section 10 - Stability and reactivity

Chemical stability:	Stable.
Hazardous Polymerization:	no
Conditions to avoid:	Avoid contact with oxidizing agents. Avoid contact with strong acids. Avoid contact with alkaline materials.

Section 11 - Toxicological information

Product information:

Acute oral toxicity:	Based on data from components this material is considered, not harmful (rat acute oral LD50 >5000 mg/kg).
Acute inhalation toxicity:	Based on data from components, this material is considered, not harmful (LC50 greater than 10,000 ppm or 200 mg/L), Based on component data, material is considered irritating to the respiratory tract.
Acute dermal toxicity:	The acute toxicity via the dermal route of exposure, based on component data, suggest that this material should be considered, not harmful (rabbit or rat dermal LD50 greater than 2000 mg/kg)
Skin irritation:	Based on data from components, this material is considered a non-irritant; however, the product is considered to be a human skin irritant.
Eye irritation:	Based on data from components, this material is considered to be a mild eye irritant.

Component information:

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

Acute oral toxicity:	LD50 8,500 mg/kg (rat)
Acute oral toxicity:	LD50 10,000 mg/kg (rat)
Acute inhalation toxicity:	LC50 >4350 ppm (rat)
Acute dermal toxicity:	LD50 >5.0 g/kg (rabbit)

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Other relevant toxicity information:

Long term, high level exposure to PGMEA has resulted in adverse effects to the livers and kidneys of experimental animals.

Testing of components suggest no genotoxic hazard.

Section 12 - Ecological information

Product information:

Biodegradation: No information.

Fish toxicity: Based on data from components, this material is classified as:,
Not Harmful (LC50 >100 mg/L).

Daphnia toxicity: Based on data from components, this material is classified as:,
Not Harmful (EC50 greater than 100 mg/L).

Algae toxicity: No data available.

Component information:

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

Fish toxicity: 161 mg/l (Fathead minnow)

Daphnia toxicity: 400 mg/l (Daphnia magna)

Section 13 - Disposal considerations

Waste disposal information:

Consult local, state, and federal regulations.

For disposal, this material is a flammable hazardous waste under RCRA.

RCRA hazardous waste:

RCRA number: D001

Section 14 - Transport information

DOT Regulation:

Proper shipping name: Combustible liquid, n.o.s.
Hazard class: C
Packing group: III
UN/NA-number: NA 1993
Primary hazard class: NON
Technical Name: 1-Methoxy-2-propanol acetate
Emergency Response: 129
Guide:

IATA

Proper shipping name: Flammable liquid, n.o.s.
Class: 3
Packing group: III
UN/ID number: UN 1993

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Primary risk: 3
Hazard inducer(s): 1-Methoxy-2-propanol acetate

IMDG

Proper shipping name: Flammable liquid, n.o.s.
Class: 3
Packing group: III
UN no.: UN 1993
Primary risk: 3
Hazard inducer(s): 1-Methoxy-2-propanol acetate
EmS: 3-06

Further information:

Not regulated for surface transportation in non-bulk containers under 119 gallons.

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: yes
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.

Volatile organic compounds VOC:

Content VOC (g/l): 620 g/l
Method: calculated

Section 16 - Other information

Label information:

CAUTION!

COMBUSTIBLE LIQUID AND VAPOR HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN Contains material that, based on animal data, can cause skin, eye, and respiratory irritation. Prolonged or repeated overexposure may cause gastric and central nervous system effects.

Keep away from heat and flame. Avoid breathing vapor. 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

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is difficult, give oxygen. If ingested, give water or milk to dilute stomach contents. Never give anything by mouth to an unconscious person. Get medical attention immediately for ingestion or breathing problems or if skin contact is extensive.

In case of fire, use water, "alcohol" foam, dry chemical, or CO₂.

If spilled, wear protective clothing, remove ignition sources, prevent sparks, and ventilate area. Absorb with inert material, collect, and place in a chemical waste container.

Keep sealed in original container. Product must be kept refrigerated until use. Temperature range for refrigeration is 30 to 55 F (- 1 to 13 C). Allow product to reach ambient temperature prior to use. 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:

Health: 2

Flammability: 2

Reactivity: 0

Special Notice: NONE

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. (R) and TM indicate trademarks of Clariant AG, its business partners or suppliers.