AZ PHOTORESIST

(Applicable to all positive photoresists)

Composition

- 2-Ethoxyethyl Acetate 48%
- N-Butyl Acetate 5%
- Xylene 5%
- + others

Synonyms

- positive photoresist.

Physical Data

- Boiling point: 124°C
- Solubility in H2O: forms 2 layers
- Viscosity: 375 CST
- % Volatile: 58
- Specific Gravity (H2O=1): 1.08
- Evaporation Rate: < ether
- Appearance: amber red liquid
- Odour: characteristic odour

Hazardous Decomposition

- Thermal decomposition may generate:
  1. Carbon Dioxide
  2. Carbon Monoxide
  3. Oxides of Nitrogen
  4. Oxides of Sulfur
  5. Volatile Organic Residues

Incompatibles

- Oxidizing Agents
- Alkaline Materials
- Strong Acids

Protective Equipment
Eyes

- Wear safety eyewear to protect against splashes.
- Contact lenses should not be worn.

Skin

- Wear rubber gloves and clothing suitable to prevent skin contact.

Respiratory

- Concentrations above TLV, a chemical cartridge respirator recommended.

Special Precautions

- Ventilation:
  1. Use local exhaust ventilation

- Storage:
  1. Store at 30°F-70°F in original containers
  2. Transport and store under dry conditions tightly closed containers and protected from heat and light.
  3. Pressure may build up slowly in closed containers due to gradual decomposition of this product.
  4. This process is accelerated by heat and light with possible liberation of combustible solvent vapours.
  5. Keep away from heat, sparks, and flame.

Toxicity

- Toxicity Data
  1. 2-Ethoxyethyl Acetate LD50 5.1 g/kg
  2. N-Butyl Acetate LD50 14.0 g/kg
  3. Xylene LD50 5.0 g/kg

- Health Hazards:
  1. Blood toxin
  2. Eye hazard
  3. Irritant
  4. Kidney toxin
  5. Liver toxin
  6. Lung toxin
  7. Nerve system toxin
  8. Reproductive toxin
  9. Skin Hazard

- 2,3,4-trihydroxybenzophenone (TOB) is an irritant and an invivo and invito mutagen.
Health

Effects:

- **Inhalation**: This substance is a mucus membrane irritant. It may cause kidney or liver damage. Inhalation of vapours may cause birth defects, increased foetal death, delayed foetal development, blood effects, testicular damage and male infertility, also dizziness, excitement, drowsiness, in co-ordination, staggering gait, eye, nose, and throat irritation, anorexia, headaches, impaired memory, weakness, & narcosis.

* Aerosol of n-butyl acetate (one of the solvents) is highly toxic but not vapours. Special care must be taken to avoid generation of or exposure to aerosols or mists of n-butyl acetate. *

- **Eyes**: May cause irritation or corneal vacuolization.

- **Skin**: Readily absorbed through skin, may cause irritation, dermatitis.

- **Ingestion**: May cause severe gastrointestinal distress, nausea, vomiting, abdominal pains, headaches, impaired memory, liver and kidney damage and weakness.

First Aid:

- **Inhalation**: Remove victim to fresh air. Consult physician if irritation occurs. Administer oxygen if difficulty in breathing.

- **Eyes**: Immediately flush thoroughly with water for at least 15 minutes. Consult a physician, if irritation persists.

- **Skin**: immediately remove contaminated clothing and wash affected area thoroughly with soap and water. consult a physician if exposure is extensive or irritation occurs.

- **Ingestion**: If person is conscious, give milk or water to dilute stomach contents. Consult a physician immediately.

PEL/ TWA

PEL

- ** STEL (Short term exposure limit):**

  1. 2-Ethoxyethyl Acetate 100ppm
  2. N-Butyl Acetate 200ppm
  3. Xylene, Xylol 150ppm

TWA

- **TWA (Time waited average):**
1. 2-Ethoxyethyl Acetate  5ppm
2. N-Butyl Acetate       150 ppm
3. Xylene, Xylol          100ppm

**Fire Hazard Data**

- **Flash point:** 111°F TAG CC
- **Extinguishing Media:** carbon dioxide, water, alcohol foam or dry chemical.
- **Special Fire-Fighting Procedures:** Use self-contained breathing apparatus and full protective clothing. Use water spray to cool drums in fire area.
- **Unusual Fire Hazards:** solvent vapours. emits toxic fumes under fire conditions.

**Disposal**

**Spill Procedures:**

- Wear protective clothing.
- remove ignition sources.
- provide ventilation
- collect onto inert absorbent
- Place in suitable container.
- Suggested cleanup is with aqueous basic photoresist developer followed by thorough rinse.
- Caution:
  1. 2,3,4-trihydroxybenzophenone (TOB) may sublime to surfaces within heating equipment under conditions of high temperature, minimal venting, and large throughput.
  2. Avoid skin contact or inhalation of dust and vapours.
  3. TOB is not listed as a hazardous waste.
  4. It is an irritant and an invitro and invivo mutagen.

**Disposal:**

- Store as a nonchlorinated waste and dispose as chemical waste in accordance with all local regulations.