 SECTION 1. CHEMICAL IDENTIFICATION

CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: MMA(8.5)MAA Copolymer Series Resists
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

SECTION 2. COMPOSITION

HAZARDOUS INGREDIENTS: Ethyl Lactate (CAS: 97-64-3); 85-98% (See Table 1 – Section 9)
OTHER INGREDIENTS: Poly(methylmethacrylate/methacrylic acid) (CAS: 25086-15-1)

SECTION 3. HAZARD DATA

INFLAMMABILITY: Flammable liquid.
SKIN CONTACT: May cause irritation.
EYE CONTACT: Irritating to eyes.
INHALATION: Irritating to respiratory system.
MUTAGENICITY: Unknown
CARCINOGENICITY: Not listed in NTP, IARC, or OSHA as a carcinogen.
TARGET ORGANS: Eyes, Skin, Respiratory System, Nervous System.

SECTION 4. FIRST AID MEASURES

INHALATION: If inhaled, remove to fresh air. Contact physician if necessary.
INGESTION: Administer water or milk to dilute. Contact a physician or local poison center immediately. DO NOT induce vomiting.
SKIN CONTACT: Wash with soap and water. Flush with large quantities of water. If irritation persists call a physician.
EYE CONTACT: Rinse immediately with water, flush for 15 min. Contact a physician immediately.

SECTION 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, and foam.
SPECIAL FIRE FIGHTING PRECAUTIONS: Wear self-contained breathing apparatus (SCBA) and personal protective equipment to prevent contact with skin and eyes.
UNUSUAL FIRE OR EXPLOSION HAZARDS: Heat will build pressure and may rupture closed containers. Keep containers cool with water spray.
MATERIAL SAFETY DATA SHEET

CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: MMA(8.5)MAA Copolymer Resists
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

SECTION 6. ACCIDENTAL RELEASE PROCEDURES ----------------------------------

EVACUATION PROCEDURES & SAFETY: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8. Eliminate all sources of ignition. Do not breathe vapors or dust.

CLEANUP & DISPOSAL OF SPILL: Absorb with an inert absorbent. Sweep up and place in an appropriate closed container. Use clean, non-sparkling tools to collect absorbed material.

ENVIRONMENTAL & REGULATORY REPORTING: Do not flush to drain. If required proper authorities should be notified.

SECTION 7. STORAGE AND HANDLING PRECAUTIONS---------------------------------

STORAGE: Store in tightly closed container in a cool, dry, well-ventilated environment away from ignition source.
HANDLING: Use only under yellow light.
Keep away from heat, sparks, and flames.
Use only with mechanical exhaust.
Do not contact with skin, eyes, and clothing.
Avoid prolonged or repeated contact with skin.
Do not breathe vapors or mist.
Wash with soap and water after handling.
Have safety shower and eye wash available.
Store and transfer under a blanket of dry inert gas.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION-----------------------

RESPIRATORY PROTECTION: Under normal conditions, use of air-purifying (half-mask/full-face) respirator with cartridges/canisters approved for use against organic vapors, dust, mists and fumes is recommended.
VENTILATION: Local or general mechanical ventilation is required.
SKIN PROTECTION: Chemical resistant gloves are recommended.
EYE PROTECTION: Safety goggles are recommended.

SECTION 9. PHYSICAL AND CHEMICAL DATA--------------------------------------

APPEARANCE: Clear, colorless liquid
ODOR: Mild, pleasant
BOILING POINT: 153 ºC (308 ºF)
SPECIFIC GRAVITY: See Table 1 below
VAPOR PRESSURE: 2.7 mm @ 20 ºC (68 ºF)
VAPOR DENSITY: 4.1 (air=1)
CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: MMA(8.5)MAA Copolymer Resists Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

H₂O SOLUBILITY: See Table 1 below
% VOLATILES: See Table 1 below
EVAPORATION RATE: <1 (BuAc=1)
FLASH POINT: 61 ºC (141 ºF) CC
EXPLOSION LIMITS: 1.5% lower
11.4% upper
AUTO IGNITION TEMP: 400 ºC (752 ºF)

Table 1

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<th>Product#</th>
<th>Specific Gravity</th>
<th>Volatiles (% by wt.)</th>
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SECTION 10. REACTIVITY DATA

STABILITY: Stable
INCOMPATIBILITY: Oxidizing agents, Bases, Acids
HAZARDOUS POLYMERIZATION: Will not occur
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide

SECTION 11. TOXICITY HAZARDS

ACUTE EFFECTS:
As Ethyl Lactate:

ORAL: LD50 (mouse): 2500 mg/kg
CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: MMA(8.5)MAA Copolymer Resists
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

DERMAL: LD50 (rabbit): 5000 mg/kg
INHALATION: LC50 (rat, 8hr): >5400 mg/m³

SECTION 12. ECOLOGICAL DATA

No data available at this time.

SECTION 13. DISPOSAL CONSIDERATIONS

Comply with applicable local, state or international regulations regarding the proper disposal of this material and/or containers.

SECTION 14. TRANSPORTATION INFORMATION

HAZARD CLASSIFICATION: Flammable Liquid
SHIPPING NAME: Resin Solution
UN NUMBER: UN 1866
PACKING GROUP III

SECTION 15. REGULATORY INFORMATION

EUROPEAN INFORMATION

EINECS LISTED
EC Nos: Ethyl Lactate 202-598-0
RISK & SAFETY PHRASES
R10 Flammable
R37 Irritating to respiratory system.
R41 Risk of serious damage to eyes.
S24 Avoid contact with skin.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S39 Wear eye/face protection.
INDICATIONS OF DANGER
Xi Irritant

US AND INTERNATIONAL INFORMATION

HAZARDOUS LISTINGS: All ingredients appear on the TSCA Inventory of Chemical Substances, EINECS, Canadian DSL and the Japan ENCS Listing.
CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: MMA(8.5)MAA Copolymer Resists
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

SARA Title III: This product IS NOT subject to SARA Title III, Section 313 Reporting Requirements.

Calif. SCAQMD Rule 443.1 VOC's: See Table 1 – Section 9

SECTION 16. ADDITIONAL PRECAUTIONS AND COMMENTS

National Fire Protection Association Hazard Ratings – NFPA:

   2 Health Hazard Rating
   2 Flammability Rating
   0 Reactivity Rating

To the best of our knowledge, the above information is believed to be accurate but does not claim to be all-inclusive and is intended to be used only as a guide. The supplier makes no warranty of any kind, expressed or implied, concerning the use of this product and shall not be held liable for any damage resulting from handling or from contact with the above product. User assumes all risks incident to its use.

MSDS Revision Information:

A) Changed NFPA code from 2 3 0 to 2 2 0.