



1254 Chestnut Street
Newton, MA 02464-1418
Tel: (617) 965-5511
Fax: (617) 965-5818

MATERIAL SAFETY DATA SHEET

PAGE 1
20 February 2002

SECTION 1. CHEMICAL IDENTIFICATION -----

CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: NANO™ 495 PMMA Series Resists in Anisole
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

SECTION 2. COMPOSITION-----

HAZARDOUS
INGREDIENTS: Anisole (CAS: 100-66-3); 84-99% (See Table 1 – Section 9)
OTHER
INGREDIENTS: Poly(methylmethacrylate) (CAS: 9011-14-7)

SECTION 3. HAZARD DATA-----

INFLAMMABILITY: Combustible liquid.
SKIN CONTACT: May cause skin irritation.
EYE CONTACT: Vapor or mist is irritating to the eyes.
INHALATION: Vapor or mist is irritating to mucous membranes and upper respiratory tract.
MUTAGENICITY: Not known to be mutagenic.
CARCINOGENICITY: Anisole – negative in rats (NCI)
TARGET ORGANS: Eyes, Respiratory Tract, and Skin.

SECTION 4. FIRST AID MEASURES-----

FIRST AID:
INHALATION: If inhaled, remove to fresh air. If patient has stopped breathing, give artificial respiration. If breathing is difficult give oxygen. Contact physician immediately.
INGESTION: Wash out mouth with water if conscious. Give two glasses of water and INDUCE VOMITING. Get medical attention immediately.
SKIN CONTACT: Rinse with water for 15 minutes while removing contaminated clothing and shoes. Wash affected area with soap and water. Wash contaminated clothing.
EYE CONTACT: Rinse immediately with water, flush for 15 min. Get emergency medical assistance.

CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: NANO™ 495 PMMA Series Resists in Anisole
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

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.

SECTION 6. ACCIDENTAL RELEASE PROCEDURES -----

Evacuate Area.
Eliminate all ignition sources.
Wear self-contained breathing apparatus (SCBA), rubber boots, and heavy rubber gloves. Avoid eye or skin contact. Cover with dry absorbent material and collect in closed container for disposal using non-sparking tools. Ventilate area and wash spill site with ketonic or acetate type solvent after material pickup is complete, rinse with water. All clean up should be carried out in accordance with federal, state, and local regulations.

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

STORAGE: Store in tightly closed container in a cool environment away from direct sunlight
HANDLING: Keep away from heat, sparks, and flames.
Hydroscopic
Do not breathe vapors
Use only with mechanical exhaust.
Avoid contact with skin, eyes, and clothing.
Avoid prolonged or repeated exposure
Wear heavy rubber gloves.
Wash with soap and water after handling.
Have safety shower and eye wash available.

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

RESPIRATORY PROTECTION: In case of spills, use of self-contained breathing apparatus (SCBA) is recommended
VENTILATION: Local or general mechanical ventilation is required.
SKIN PROTECTION: Heavy rubber gloves are highly recommended.
EYE PROTECTION: Safety goggles are highly recommended.

MATERIAL SAFETY DATA SHEETPAGE 3
20 February 2002

CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: NANO™ 495 PMMA Series Resists in Anisole
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

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

APPEARANCE: Clear to straw colored liquid
ODOR: Aromatic
BOILING POINT: 154 °C (307 °F)
SPECIFIC GRAVITY: See Table 1 below
VAPOR PRESSURE: 10 mm @ 42 °C (108 °F)
VAPOR DENSITY: 3.7 (air=1)
H₂O SOLUBILITY: 0.2% @ 20 °C, by wt.
% VOLATILES: See Table 1 below
EVAPORATION RATE: 0.1 (BuAc=1)
FLASH POINT: 52 °C (125 °F) TCC
AUTOIGNITION TEMP: 475 °C (887 °F)
EXPLOSION LIMITS: unk. Lower
unk. Upper

Table 1

Name	Product #	Specific Gravity	Volatiles (% by wt.)	VOC (g/L)
495A1	M130001	0.995	99	985
495A2	M130002	0.997	98	975
495A3	M130003	0.999	97	970
495A4	M130004	1.001	96	960
495A4.5	M130504	1.002	95.5	957
495A5	M130005	1.003	95	955
495A5.5	M130505	1.004	94.5	950
495A6	M130006	1.005	94	945
495A7	M130007	1.007	93	935
495A7.5	M130507	1.008	92.5	930
495A8	M130008	1.009	92	930
495A8.5	M130508	1.010	91.5	925
495A9	M130009	1.011	91	920
495A10	M130010	1.013	90	910
495A11	M130011	1.014	89	900
495A15	M130015	1.018	85	865
495A15.5	M130515	1.019	84.5	860

MATERIAL SAFETY DATA SHEET

PAGE 4
20 February 2002

CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: NANO™ 495 PMMA Series Resists in Anisole
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

SECTION 10. REACTIVITY DATA -----

STABILITY: Stable
INCOMPATIBILITY: Oxidizing Agents, Strong Acids
HAZARDOUS COMBUSTION OR
DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide

SECTION 11. TOXICITY HAZARDS-----

ACUTE EFFECTS:
May be harmful if swallowed, inhaled, or absorbed through the skin
Vapor or mist is irritating to the eyes, mucous membranes and upper respiratory tract
Inhalation of vapors has caused nausea, discomfort and loss of coordination in humans.
Causes skin irritation. Causes moderate skin irritation in rabbits. Low acute dermal toxicity.
No sensitization observed in humans
The chemical, physical, and toxicological properties have not been thoroughly investigated.

As Anisole

ORAL:	LD50 (rat):	3700 mg/Kg	
	LD50 (mouse):	2800 mg/Kg	
INHALATION:	LC50:	not listed	
TLV:	ACGIH	(TWA)	none established
PEL:	OSHA	(8hr TWA)	none established

SECTION 12. ECOLOGICAL DATA-----

No data available at this time

SECTION 13. DISPOSAL CONSIDERATIONS-----

Burn in an EPA-licensed chemical incinerator equipped with an afterburner and scrubber at an approved waste disposal facility. Observe all federal, state, and local environmental regulations.

SECTION 14. TRANSPORTATION INFORMATION-----

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

CHEMICAL NAME: Organic Polymer Solution
TRADE NAME: NANO™ 495 PMMA Series Resists in Anisole
Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 – Section 9

SECTION 15. REGULATORY INFORMATION-----

HAZARDOUS LISTINGS: All ingredients appear on the TSCA Inventory of Chemical Substances, EINECS, and the Japan Hazardous Chemical Listing.

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-----

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.