



Microlithography Chemical Corp.

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MATERIAL SAFETY DATA SHEET

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SECTION 1. CHEMICAL IDENTIFICATION -----

CHEMICAL NAME: Organic Solvent Mixture
TRADE NAME: NANO™ Remover PG
PRODUCT #: Positive radiation Resist remover
G050200

SECTION 2. COMPOSITION-----

INGREDIENTS: N-Methyl Pyrrolidinone (CAS: 872-50-4); >99%
OTHER
INGREDIANTS: Proprietary Surfactant; <1%

SECTION 3. HAZARD DATA-----

INFLAMMABILITY: Combustible liquid.
SKIN CONTACT: Moderate skin irritation.
EYE CONTACT: Severe eye irritant.
INGESTION: May be harmful if swallowed in large quantities.
INHALATION: No inhalation hazard identified.
MUTAGENICITY: Not known to be mutagenic.
CARCINOGENICITY: Not considered carcinogenic by NTP, IARC and OSHA
OTHER:
TARGET ORGANS: Bone Marrow, Thymus.

SECTION 4. FIRST AID MEASURES-----

INHALATION: If inhaled, remove to fresh air. If patient has stopped breathing, give artificial respiration. If breathing is difficult give oxygen. Obtain emergency medical attention.
INGESTION: Wash out mouth with water if conscious. DO NOT induce vomiting.
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 20-30 min. lifting eyelids frequently. Get emergency medical assistance.

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SECTION 5. FIRE FIGHTING MEASURES-----

EXTINGUISHING

MEDIA: Dry chemical, carbon dioxide, foam, water spray, fog.

SPECIAL FIRE FIGHTING PRECAUTIONS:

Wear self-contained breathing apparatus (SCBA) and personal protective equipment.

UNUSUAL FIRE OR EXPLOSION HAZARDS:

Vapor may travel considerable distance to source of ignition and flash back. 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 after material pickup is complete, rinse with water. All clean-up should be carried out in accordance with federal, state, and local regulations. If required proper authorities should be notified.

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.
Do not breathe vapors.
Possible teratogen.
Use only with mechanical exhaust.
Do not 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.

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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: Rubber gloves are highly recommended.
EYE PROTECTION: Safety goggles are highly recommended.

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

APPEARANCE: Colorless Liquid.
ODOR: Amine like.
BOILING POINT: 202 °C (396 °F)
SPECIFIC GRAVITY: 1.026
VAPOR PRESSURE: 0.3 mm @ 20 °C (68 °F)
H₂O SOLUBILITY: complete
% VOLATILES: 100% by weight
EVAPORATION RATE: 0.06 (BuAc=1)
FLASH POINT: 93 °C (199 °F) TCC
AUTOIGNITION TEMP: 270 °C (518 °F)
EXPLOSION LIMITS: 1.3 lower
9.5 upper

SECTION 10. REACTIVITY DATA -----

STABILITY: Stable
INCOMPATIBILITY: Strong Oxidizing Agents, Strong Acids
HAZARDOUS POLYMERIZATION: Will not occur
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides.

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SECTION 11. TOXICITY HAZARDS**ACCUTE EFFECTS:**

May be harmful if swallowed, inhaled, or absorbed through the skin. Irritating to the eyes and respiratory tract. May cause severe irritation to the eyes. Vapor or mist is irritating to the eyes, mucous membranes and upper respiratory tract. Prolonged exposure can cause stomach pains, nausea, vomiting, and/or diarrhea. Overexposure may cause reproductive disorders affecting pregnancy and/or fetal development

ORAL:	LD50(rat):	3914 mg/kg
IRRITATION:	Eyes:	100 mg moderate
TLV:	ACGIH(TWA)	none established
PEL:	OSHA (8 hr 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:	Combustible Liquid
SHIPPING NAME:	Flammable Liquid, NOS (n-methylpyrrolidinone)
UN NUMBER:	NA 1993
PACKING GROUP	III

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: 1026 g/l; vapor pressure 0.3 mm Hg @ 20 °C

MATERIAL SAFETY DATA SHEET

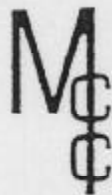
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SECTION 16. ADDITIONAL PRECAUTIONS AND COMMENTS

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.

Su-8 stripper



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NANOTM REMOVER PG

POSITIVE RADIATION SENSITIVE RESIST REMOVER

Product No.
Expiration

G050200
May-98

Lot No.
Manufactured

97013
Apr-97

CERTIFICATE OF ANALYSIS

MICROLITHOGRAPHY CHEMICAL CORP. has completed the analysis of the above lot of material with the results listed below.

Appearance	Clear, colorless	
Solvent by GC	>99%	N-Methyl- pyrrolid-inone
Evaporation Residue	<0.01%	
Filtration Level	0.1 μ m	

Certified by:

Vincent Urdi
Chemist

3-Apr-97