

MICRO • CHEM
SAFETY DATA SHEET

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Rev. Date: 06 November 2008

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION -----

PRODUCT USE: Organic Polymer Solution
TRADE NAME: 950 PMMA Series Resists in Anisole
 Positive Radiation Sensitive Resists
PRODUCT #: See Table 1 - Section 9

SUPPLIER: MicroChem Corporation
 90 Oak Street, PO Box 426
 Newton, MA 02464-0002

TELEPHONE: (617) 965-5511
FAX: (617) 965-5818
CHEMTREC USA
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MSDS DATE: 06 November 2008

SECTION 2. HAZARDS IDENTIFICATION -----

Hazardous Classification

Aquatic hazards aquatic env – Category 3
Acute toxicity (inhalation – gas/vapour) – Category 3
Flammable liquids - Category 3
Serious eye damage/eye irritation - Category 2B
Skin corrosion/irritation - Category 3
Target organ systemic toxicant single exp - Category 3



Signal Word: **DANGER!**

Hazards

Flammable liquid and vapour.
Toxic if inhaled.
Causes eye irritation.
Causes mild skin irritation.
Harmful to aquatic life.
May cause drowsiness and dizziness.
May cause respiratory irritation.

Precautions

Avoid release to the environment.
Use only outdoors or in a well-ventilated area.
Do not breathe mist or vapors.
Keep away from heat, sparks and open flame. - No smoking.
Use explosion-proof equipment.
Wear protective gloves and eye/face protection.

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Take precautionary measures against static discharge.
If skin irritation occurs, get medical advice/attention.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
Call a POISON CENTRE or doctor/physician if you feel unwell.
Use extinguishing measures that are appropriate to local circumstances

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS: Anisole (CAS: 100-66-3); 85-99% (See Table 1 – Section 9)
Poly(methylmethacrylate) (CAS: 9011-14-7); 1-15%

SECTION 4. FIRST AID MEASURES

INHALATION: If respiratory irritation or distress occurs remove victim to fresh air and seek medical attention.
INGESTION: Do not induce vomiting unless instructed to do so by a physician. Wash out mouth with water and keep at rest. Seek immediate medical attention.
SKIN CONTACT: In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.
EYE CONTACT: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

SECTION 5. FIRE-FIGHTING MEASURES

EXTINGUISHING

MEDIA: Dry chemical, carbon dioxide

SPECIAL FIRE FIGHTING PRECAUTIONS:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Remove all ignition sources if it can be done safely.

UNUSUAL FIRE OR EXPLOSION HAZARDS:

Product will burn under fire conditions. Containers may explode (due to build-up of pressure) when exposed to extreme heat. Vapors may travel a considerable distance to a source of ignition and flash back along vapor trail.

SECTION 6. ACCIDENTAL RELEASE MEASURES

EVACUATION

PROCEDURES & SAFETY: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

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CLEANUP & DISPOSAL OF SPILL:

Absorb with an inert absorbent. Sweep up and place in an appropriate closed container (see Section 7). Clean up residual material by washing area with water. Collect washings for disposal.

ENVIRONMENTAL &

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

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS: Store locked up. Store container tightly closed in well-ventilated place.

STORAGE: Store in tightly closed container in a cool, dry, well-ventilated environment away from ignition sources.

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/PERSONAL PROTECTION

OCCUPATIONAL

EXPOSURE LIMITS: Anisole: None Established

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: General area dilution/exhaust ventilation.

SKIN PROTECTION: PVC protective gloves are highly recommended.

EYE PROTECTION: Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear to straw colored liquid

ODOR: Strong

BOILING POINT: 154 °C (309 °F)

SPECIFIC GRAVITY: See Table 1 below

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VAPOR PRESSURE: 13 mm @ 42 °C (108 °F)
VAPOR DENSITY: 3.7 (air=1)
H₂O SOLUBILITY: Slightly soluble.
% VOLATILES: See Table 1 below
EVAPORATION RATE: 0.1 (BuAc=1)
FLASH POINT: 44 °C (111 °F) CC
AUTOIGNITION TEMP: 475 °C (887 °F)
EXPLOSION LIMITS: unk. Lower, unk. Upper

Table 1

Name	Product #	Specific Gravity	Volatiles (% by wt.)	VOC (g/L)
950A1	M230001	0.994	99	985
950A2	M230002	0.996	98	975
950A3	M230003	0.998	97	970
950A4	M230004	1.000	96	960
950A4.5	M230504	1.001	95.5	958
950A5	M230005	1.004	95	955
950A5.5	M230505	1.004	94.5	950
950A6	M230006	1.005	94	945
950A7	M230007	1.007	93	935
950A8	M230008	1.009	92	930
950A9	M230009	1.010	91	920
950A10	M230010	1.012	90	910
950A11	M230011	1.014	89	900
950A12	M230012	1.016	88	895
950A13	M230013	1.018	87	885
950A15	M230015	1.022	85	870

SECTION 10. STABILITY AND REACTIVITY

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

SECTION 11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, ingestion, eye and skin contact

Symptoms of Exposure: Causes eye irritation. Causes mild skin irritation. May cause upper respiratory tract irritation, central nervous system depression, shortness of breath, drowsiness and confusion.

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Acute Toxicity**Acute Oral Toxicity**

Component: Anisole
LD50 rat 3700 mg/kg

Acute Dermal Toxicity

Component: Anisole
LD50 rabbit >5000 mg/kg

Acute Inhalation Toxicity

Component: Anisole
LC50 rat 5 mg/l

Specific Concentration Limits

The values listed below represent the percentages of ingredients of unknown toxicity:

15% Acute oral toxicity
15% Acute dermal toxicity
15% Acute inhalation toxicity

Skin corrosion/irritation

Component: Anisole
Acute Skin Irritation: Mildly irritating

Serious eye damage/eye irritation

Component: Anisole
Acute Eye Irritation: eye irritation

Respiratory or Skin Sensitisation

Component: Anisole
Skin sensitization - Did not induce skin sensitization in guinea pigs.

Carcinogenicity

Component: Anisole
Studies in laboratory animals indicate that this substance is not carcinogenic.

Germ Cell Mutagenicity

Component: Anisole
No evidence of genotoxicity in standard bacterial and mammalian test systems in vitro.

Specific Target Organ Systemic Toxicity (single exposure)

Component: Anisole
Central Nervous system

Specific Target Organ Systemic Toxicity (repeated exposure)

Component: Anisole
Central Nervous System

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Toxicity to Reproduction

Component: Anisole

No adverse effects to reproduction or adverse developmental effects known.

Aspiration Hazards

No data found.

SECTION 12. ECOLOGICAL INFORMATION

Acute aquatic toxicity**Acute toxicity to fish**

Component: Anisole

48 hr LC50 Cyprinus Carpio 120 mg/L

Acute toxicity to aquatic invertebrates

Component: Anisole

24 hr EC50 Daphnia magna: 40 mg/L

Acute toxicity to algae

Component: Anisole

96 hr EC50 Green Algae 162 mg/l

Specific concentration limits

The values listed below represent the percentages of ingredients of unknown toxicity.

15% Acute aquatic toxicity – fish

15% Acute aquatic toxicity – aquatic invertebrates

15% Acute aquatic toxicity - algae

Chronic aquatic toxicity**Chronic toxicity to fish**

No data found

Chronic toxicity to aquatic invertebrates

No data found

Chronic toxicity to algae

No data found

Persistence/Degradability

Component: Anisole

Inherently biodegradable

Bioaccumulation

Component: Anisole

Not expected to bioaccumulate

Mobility

Component: Anisole

No data found

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SECTION 13. DISPOSAL CONSIDERATIONS

Precautions

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied. Dispose of contents/container in accordance with local regulation.

Disposal

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

US AND INTERNATIONAL INFORMATION

Chemical Inventories: TSCA (US) – Components are listed or comply with TSCA regulations.
EINECS/ELINCS/NLP (EU) – Components are listed or exempt.
China – Components are listed.
Japan – Components are listed.
DSL/NDSL (Canada) – Components are listed.
AICS (Australia) – Components are listed.
Korea - Components are listed
Philippines – Components are listed.

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. OTHER INFORMATION

National Fire Protection Association Hazard Ratings – NFPA:

- 1 Health Hazard Rating
- 2 Flammability Rating
- 0 Reactivity Rating

For additional information contact: productsafety@microchem.com

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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: NEW