MATERIAL SAFETY DATA SHEET

Identity (As Used on Label and List): RISOGRAPH RA INK (black/red/blue/brown/green/yellow/
Riso-purple/bright-red/medium-blue/federal-blue)

SECTION I

Manufacturer's Name: RISO INC.

Emergency Telephone Number: 508-777-7377 Telephone Number for Information: 508-777-7377

Address: 320 Rosewood Drive, Suite 210, Danvers, MA 01923

Date Prepared: June 6, 1994 Signature of Preparer:

Trade Name and Synonyms: RISOGRAPH RA INK (Item Code)
- black (S-569), red (S-574), blue (S-576),
- brown (S-576), green (S-577), yellow (S-578),
- Riso-purple (S-563), bright-red (S-564),
- medium-blue (S-569), federal-blue (S-527)

Chemical Name Synonyms: Water/Oil-type Emulsion Ink for Duplicator

SECTION II - Hazardous Ingredients/Identity Information

Hazardous Components
(Specific Identity; Common Name(s)); CAS No. OSHA(PEL) ACGIH(TWA) Other Limits

- Petroleum Solvent, CAS No. 64742-55-8, 64742-18-8 5 mg/m³ 5 mg/m³ Not applicable ca. 15%
- Glycerol, CAS No. 55-20-5 15 mg/m³ 10 mg/m³ Not applicable
- Carbon black, CAS No. 1333-86-4 3.5 mg/m³ 3.5 mg/m³ Not applicable
- Aliphatic hydrocarbon, CAS No. 64742-47-8 None None (Combustible)
- Non-hazardous components
  - Water, CAS No. 7732-18-5
  - Others

SECTION III - Physical / Chemical Characteristics

Boiling Point: 212 °F/ 100° C Specific Gravity (H₂O = 1): 1.00-1.02

Vapor Pressure (mm Hg): Not determined Melting Point: < 0° C

Vapor Density (AIR = 1): Not applicable Evaporation Rate:
- (Butyl Acetate = 1)

Solubility in Water: Negligible pH Value: Not applicable

Appearance and Odor: Extremely viscous colored liquid with slight odor
SECTION IV - Fire and Explosion Hazard Data

Flash Point: Not established
(Pensky-Martens Closed Tester)  Flammable Limits: LEL NA UEL NA

Extinguishing Media: Carbon dioxide, dry chemical foam or water spray

Special Fire Fighting Procedures: Not in particular. RISOGRAPH RA INK is not combustible.

Unusual Fire and Explosion Hazards: No unusual fire and explosion hazards.

SECTION V - Reactivity Data

Stability Unstable Stable x

Conditions to Avoid: Not applicable

Incompatibility(Materials to Avoid): Strong oxidizing agents

Hazardous Decomposition or Byproducts: None

Hazardous Polymerization Will Not Occur x

Conditions to Avoid: Not applicable

SECTION VI - Health Hazard Data

Route(s) of Entry: Inhalation? Yes Skin? Yes Ingestion? Yes

Health Hazards(Acute and Chronic):
Acute oral lethal dose lowest on rats is greater than 2000mg/kg. (LDLo > 2000mg/kg)
Skin irritation test on rabbits shows that RA is not irritant.
Eye irritation test on rabbits shows that RA is minimally irritating.

Mutagenicity(Arma): Non-mutagenic

Carcinogenicity: NTP? No IARC Monographs? Yes OSHA Regulated? No
Petroleum solvent known as mineral oil is listed carcinogenic in IARC Monograph.

Signs and Symptoms of Exposure:
High vapour concentrations are a little irritating to eyes and the respiratory tract.

Medical conditions Generally Aggravated by Exposure: Not known

Emergency and First Aid Procedure:
Eye Contact: Flush with plenty of water for at least 15 minutes.
Inhalation: Remove affected person to fresh air immediately.

SECTION VII - Precautions for Safe Handling and Storing

Steps to Be Taken in Case Material is Released or Spoiled:
Spills should be wiped up with cloth or paper.
**Waste Disposal Method:**
Incineration is preferable. Observe all Federal, state and local regulations concerning health and environmental pollution.

**Precautions to Be Taken in Handling and Storing:** Not in particular. In order to keep ink efficiency, store at the temperature 41 ~ 86° F (5 ~ 30° C)

**Other Precautions:** Not in particular

### SECTION VII - Control Measures

**Respiratory Protection (Specify Type):** Preferable in case of handling a large amount

<table>
<thead>
<tr>
<th>Ventilation</th>
<th>Local Exhaust</th>
<th>Not required</th>
<th>Special: Not applicable</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mechanical (General)</td>
<td>Preferable</td>
<td>Other: Not applicable</td>
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</table>

**Protective Gloves:** Not normally required
**Eye Protection:** Not normally required

**Other Protective Clothing or Equipment:** Not in particular
**Work/Hygienic Practices:** Not applicable