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RISOGRAPH RA INK

MATERIAL SAFETY DATA SHEET

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

SECTION I

Manufacturer's Name : RISO INC.

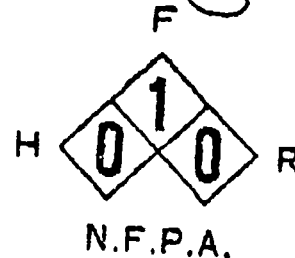
Emergency Telephone Number : 508-777-7377 Telephone Number for Information : 508-777-7377

Address : 300 Rosewood Drive, Suite 210, Danvers, MA 01923

Date Prepared : 12/16/94 Signature of Preparer : *[Signature]*

Trade Name and Synonyms : RISOGRAPH RA INK(Item Code)
black(S-569), red(S-574), blue(S-575)
brown(S-576), green(S-577), yellow(S-578),
purple(S-663), bright-red(S-664),
medium-blue(S-669), federal-blue(S-527)

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



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SECTION II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Identity;Common Name(s)), CAS No.	OSHA(PEL)	ACGIH(TWA)	Other Limits Recommended	wt%
Petroleum Solvent CAS No. 64742-55-8, 64742-18-3	5 mg/m ³	5 mg/m ³	Not applicable	10~20
Glycerol CAS No. 56-81-5	15 mg/m ³	10 mg/m ³	Not applicable	< 10
Carbon-black (for black ink) CAS No. 1333-86-4	3.5mg/m ³	3.5mg/m ³	Not applicable	< 5
Aliphatic hydrocarbon CAS No. 64742-47-8	None	None	(Combustible)	< 5
Non-hazardous components (Water, resin, emulsifier, pignents, additives)	None	None	Not applicable	65~85

SECTION III - Physical / Chemical Characteristics

Boiling Point: 212 ° F/ 100° C	Specific Gravity(H ₂ O = 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) Not applicable
Solubility in Water: Negligible	pH Value: Not applicable
Appearance and Odor: Extremely viscous colored liquid with slight odor	

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Flash Point: Not established
(Pensky-Martens Closed Tester)

Flammable Limits: LEL NA UEL NA
Not applicable

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 Conditions to Avoid: Not applicable
Stable

Incompatibility(Materials to Avoid) : Strong oxidizing agents

Hazardous Decomposition or Byproducts : None

Hazardous May Occur Conditions to Avoid: Not applicable
Polymerization Will Not Occur

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(Ames): 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.

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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

Ventilation	Local Exhaust	: Not required	Special:	Not applicable
	Mechanical(General):	Preferable	Other:	Not applicable

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

Other Protective Clothing or Equipment: Not in particular

Work/Hygenic Practices : Not applicable