

MATERIAL SAFETY DATA SHEET

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DATE PREPARED : Aug. 6, 1993

PRODUCT NAME : JSR NFR 012R

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier : JSR NFR 012R

General Use : Photoresist for Integrated Circuit Production

Product Description : Photosensitizer and Cresol-formaldehyde resin solution

MANUFACTURER:

Japan Synthetic Rubber Co.,Ltd.

2-11-24, Tsukiji,

Chuo-ku, Tokyo,

Japan 104

EMERGENCY TELEPHONE NUMBERS:

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24Hrs Every day

Telephone : -81-3-5565-6600

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24Hrs Every day

2. COMPOSITION / INFORMATION ON INGREDIENTS

	%	CAS #
Cresol-formaldehyde Resin	20-35	Proprietary
Melamine compound	2- 7	Proprietary
Triazine compound	- 1	Proprietary
Methyl 3-methoxypropionate	60-75	3852- 09- 3
OSHA HAZARDS (29 CFR 1910.1200)	Exposure Limits	8 hrs. TWA(ppm)
	OSHA PEL	ACGIH TLV
Cresol-formaldehyde Resin	Not-established	Not-established
Melamine compound	Not-established	Not-established
Triazine compound	Not-established	Not-established
Methyl 3-methoxypropionate	Not-established	Not-established

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Clear, pale yellow viscous liquid with a sweet ester-like odor. Flammable Liquid

POTENTIAL HEALTH EFFECTS

INHALATION:

Inhalation may cause anesthesia.

EYE CONTACT:

Eye contact causes severe irritation.

SKIN CONTACT:

Prolonged and repeated contact with skin may cause irritation and dermatitis.

INGESTION:-

Swallowing may nauseate and cause pain in esophagus and stomach.

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CARCINOGENICITY:

Not known to be carcinogenic.
NTP? No IARC MONOGRAPHS? No

OSHA Regulated? No

4. FIRST AID MEASURES

INHALATION:

Move exposed person to fresh air, perform artificial respiration if necessary.

EYE CONTACT:

Immediately flush eyes with plenty of water at least 15 min.
Call physician.

SKIN CONTACT:

Flush skin with water.

INGESTION:

Give large quantities of water and induce vomiting:
contact a poison center and have MSDS information available.

5. FIRE-FIGHTING MEASURES

Flashpoint and Method : 54 deg. C

Flammable Limits

LFL : not available

UFL : not available

Autoignition Temperature : not available

GENERAL HAZARD:

Flammable Liquid may release vapors that form flammable mixtures when temperatures are at or above the flash point.
Toxic gases will form upon combustion.

EXTINGUISHING MEDIA:

Carbon dioxide, alcohol form or dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES:

Water should be use to keep fire exposed containers cool and to dispense vapors. Firefighters should wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None.

HAZARDOUS COMBUSTION PRODUCTS:

Smoke, fumes and oxides of carbon.

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6. ACCIDENTAL RELEASE MEASURES

GENERAL:

Provide maximum ventilation.

LAND SPILL:

Dike or absorb with inert absorbent material such as sand or saw-dust and transfer to container for disposal.

WATER SPILL:

Remove from surface by skimming or with suitable absorbents.

7. HANDLING AND STORAGE

GENERAL

Store in original container in a dry area.
Avoid heat, sunlight, ignition sources.
Open only under safelight and well ventilated conditions. When using this substance: (a) avoid breathing the substance; (b) avoid ingestion; use respiratory protection when in dust or mist form.
Loosen closure cautiously before opening.
Wear chemical goggles, resistant gloves and protective clothing to prevent contact. Wash thoroughly after handling.

STORAGE TEMPERATURE : Between 32 and 70 F (0 - 21 C)

STORAGE PRESSURE : Atmospheric

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

The use of local exhaust ventilation is recommended to control emissions near the source.
Laboratory samples should be handled in a fumehood.
Provide mechanical ventilation of confined spaces.
Use explosion-proof ventilation equipment.

PERSONAL PROTECTION:

GENERAL:

The use an air supplied respirator is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure	: 1.8 mmHg
Specific Gravity	: ca.1
Solubility in Water	: Moderate
pH	: Not available
Boiling Point	: 145 deg. C
Viscosity	: 12 -- 40 cP

Vapor Density	: 4.0
	(Air = 1)
Evaporation Rate	: 0.32
	(Butyl Acetate = 1)
Freezing Point	: Not available

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10. STABILITY AND REACTIVITY

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:
Strong oxidizing agents.

HAZARDOUS DECOMPOSITION:

This material is stable under recommended storage and handling conditions.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. TRANSPORT INFORMATION

PROPER SHIPPING NAME	: Resin solution
IDENTIFICATION NUMBER	: UN 1866

12. REGULATORY INFORMATION

TSCA (Toxic Substance Control Act)
All the components in the resist are on the TSCA lists or are subject to a Low Volume Exemption.

13. OTHER INFORMATION

REVISION SUMMARY
Dec. 4, 1992 Original MSDS established.

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution.

Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.