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ION Exchange
Resin

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MATERIAL SAFETY DATA SHEET

DATE PREPARED : January 27, 2004

1. PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME : MR151

COMPANY IDENTIFICATION :

SUPPLIER

Name : Nippon Rensui Company

Address : 43-11, Minami-Otsuka 3-chome, Toshima-ku, Tokyo 170-0005, Japan

Telephone : +81-3-5954-2724 Facsimile : +81-3-5954-2730

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPOSITION / INFORMATION :

Component	%
Diethenylbenzene polymer with ar-ethenyl- N,N,N-trimethylbenzenemethanaminium hydroxide (CAS NO. : 9017-79-2 / EINECS NO. : not applicable)	10-60
Diethenylbenzene polymer with ethenylbenzene sulfonic acid (CAS NO. : 39389-20-3 / EINECS NO. : not applicable)	10-70

Remaining portion is H₂O

3. HAZARDOUS IDENTIFICATION

CLASS NAME OF HAZARDOUS CHEMICALS FOR MSDS IN JAPAN : not applicable

PHYSICAL AND CHEMICAL HAZARDS : Under certain conditions, strong oxidizing agents such as nitric acid could cause slight copolymer degradation up to explosive reaction.

4. FIRST-AID MEASURES

EYE CONTACT : Eye-flush with water for more than 15 minutes. If necessary, consult a physician.

SKIN CONTACT : Wash with water and soap. In case of irritation, consult a physician.

INHALATION : Possibility of inhalation is low. The resin particle size is approx. 0.3 - 1.2 mm and the resin contains almost no fine particles.

INGESTION : Not specially necessary in case of small amount. In case of stomachache, consult a physician.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA : CO₂, dry chemical, water spray
EXTINGUISHING MEDIA WHICH MUST NOT BE USED FOR SAFETY REASONS: none
SPECIAL FIRE-FIGHTING PROCEDURES : Wear self-contained breathing apparatus and fully protective gear. Keep personnel removed from and upwind of fire. Keep unnecessary people away.
HAZARDOUS COMBUSTION PRODUCTS : NO_x, SO_x, CO

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Resins may be slippery. Do not step on the spilled resins. Evacuate non-essential personnel.
ENVIRONMENTAL PRECAUTIONS : Prevent spilled resins from entering sewers or watercourses.
METHODS FOR CLEANING UP : Sweep up, place in closed containers and have them disposed of by experts.

7. HANDLING & STORAGE

HANDLING : Wear safety glasses and protective gloves to avoid eye or skin contact. Resin handling should be in well-ventilated, upwind areas. Eye-washing facilities must be set in the working area. Do not step on spilled resins because the resins are very slippery. Avoid high temperature, sparks and flames. Also avoid contact or mixture with oxidizing substances.
STORAGE : Store in a cool, dry, well-ventilated location at temperature more than 0°C not to freeze resins. Keep the containers completely closed. Keep away from oxidizing substances.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMIT : ACGIH TLV (TWA) not established
(STEL) not established
ENGINEERING MEASURES : If resin handling is made in-house, general and/or local exhaust ventilation is preferred.
PERSONAL PROTECTION :
Respiratory protection : not necessary
Hand protection : Rubber gloves
Eye protection : Safety glasses or face shield
Skin protection : not necessary

9. PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE :	light yellow translucent beads and whitish brown opaque beads	
ODOUR :	slight amine odor	pH : not applicable
BOILING POINT :	not applicable	MELTING POINT : not applicable
FLASH POINT :	not applicable	FLAMMABILITY : not applicable
AUTOFLAMMABILITY :	not available	EXPLOSIVE PROPERTIES : none
OXIDIZING PROPERTIES :	none	VAPOUR PRESSURE : none
RELATIVE DENSITY :	approx. 1.1	VAPOUR DENSITY : none
SOLUBILITY :	(Water) Insoluble (Solvents) Insoluble	
PARTITION COEFFICIENT :	not applicable (n-OCTANOL/WATER)	

10. STABILITY & REACTIVITY

STABILITY & REACTIVITY :	chemically stable
CONDITIONS TO AVOID :	drying and freezing
MATERIALS TO AVOID :	strong oxidizing substances such as nitric acid
HAZARDOUS DECOMPOSITION PRODUCTS (except burning) :	none

11. TOXICOLOGICAL INFORMATION

SKIN CORROSIVITY :	Essentially no skin corrosivity
IRRITATION :	
EYE :	May cause slight transient eye irritation
SKIN :	Essentially no skin irritation
SENSITIZATION :	not available
NARCOSIS :	none
ACUTE TOXICITY :	
ORAL	Believed to be essentially none
SKIN	Believed to be essentially none
INHALATION	Believed to be essentially none
SUBACUTE TOXICITY :	Believed to be essentially none
SUBCHRONIC TOXICITY :	Believed to be essentially none
CHRONIC TOXICITY :	Believed to be essentially none
CARCINOGENICITY :	Believed to be essentially none
MUTAGENICITY :	Believed to be essentially none
REPRODUCTIVE TOXICITY :	Believed to be essentially none

12. ECOLOGICAL INFORMATION

DEGRADABILITY :	not available
BIODEGRADABILITY	none
ACCUMULATION :	not available
BIOACCUMULATION	none
ECOTOXICITY :	not available
TOXICITY TO FISH	not available
OTHER ADVERSE EFFECTS :	not available

13. DISPOSAL CONSIDERATIONS

After removal of hazardous and/or poisonous substances on used resin or contaminated package, dispose of the materials by either incineration or landfill.

Above disposal methods should be applied under conditions which meet all regulations relating to waste in your country.

14. TRANSPORT INFORMATION

Temperature during transportation must be kept more than 0°C. Keep away from oxidizing substances.

In addition, please follow all regulations in your country.

FURTHER INFORMATION :

UN CLASS	not applicable	UN No.	not applicable
IMDG	not applicable	IATA/ICAO	not applicable
RID	not applicable	ADR	not applicable

15. REGULATORY INFORMATION

Please follow all regulations in your country.

16. OTHER INFORMATION

[LEACHABLES]

By contacting with water or solvents, trace level of substances such as CH₃OH, C₆H₅CHO, HCHO etc. may be released into the liquid. Please refer to applicable regulations and, if necessary, please call for details.

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