



Safety Data Sheet

**Product Names: Ion Exchange Resin, R2000 Resin, R2100 Resin
99R2000 Resin, 99R2100 Resin**

(Mixture of Hydroxide form Type 1 Anion and Hydrogen form Cation resin)

Effective date 26 February 2016

Section 1: Identification

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|----|----------------------|---|
| 1a | Product Names | 99R2000 Resin
99R2100 Resin
R2000 Resin
R2100 Resin |
| 1b | Common Name | Ion exchange resin |
| 1c | Intended Use | All applications where deionized water is needed. |
| 1d | Manufacturer Address | Separation Technologists, Inc.
7A Raymond Ave.
Suite A-7
Salem, NH 03079 |
| | Phone | 603-898-0020 |
| | Email | service@separationtech.com |

Section 2: Hazard Identification

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| 2a | OSHA Hazard classification | Not hazardous or dangerous |
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Product Hazard Rating	Scale
Health = 1	0 = Negligible
Fire = 1	1 = Slight
Reactivity = 0	2 = Moderate
Special – N/A	3 = High
	4 = Extreme

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| 2b | Product description | Amber, tan, dark brown, or black cation beads blended with white, yellow, orange, or red anion beads, all approx. 0.6 mm diameter. |
| 2c | Precautions for use | Safety glasses and gloves recommended. Slipping hazard if spilled. |
| 2d | Potential health effects | Will cause eye irritation.
May cause mild skin irritation.
Ingestion is not likely to pose a health risk. |
| 2e | | This product may alter the pH of any water that contacts it. |

H315: Causes skin irritation (Category 2)

H319: Causes serious eye irritation (Category 2A)

Precautionary Statements:

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/face protection

P284: In case of inadequate ventilation wear respiratory protection.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

P333+313: If skin irritation or a rash occurs: Get medical advice/attention.

P337+313: If eye irritation persists get medical advice/attention.

P403+233: Store in a well-ventilated place. Keep container tightly closed.

P411: Store at temperatures not exceeding 50°C/122°F.

Please refer to the safety data sheet for additional information regarding this product.

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Section 3: Composition/Information on Ingredients

3a	Chemical name	Mixture of polystyrene sulfonate in the hydrogen form and trimethylamine functionalized chloromethylated copolymer of polystyrene in the hydroxide form.
3b	Ingredients	
	Polystyrene sulfonate in the hydrogen form	CAS# 69011-20-7 (10 – 30%)
	Trimethylamine functionalized chloromethylated copolymer of polystyrene in the hydroxide form	CAS# 69011-18-3 (20 – 50%)
	Water	CAS# 7732-18-5 (40 – 70%)

Section 4: First Aid Measures

4a	Inhalation	No adverse effects expected. Normal use of product does not produce odors or vapors.
4b	Skin	Wash with soap and water – seek medical attention if a rash develops.
4c	Eye contact	Wash immediately with water – seek attention if discomfort continues.
4d	Ingestion	No adverse effects expected for small amounts, larger amounts can cause stomach irritation. Seek medical attention if discomfort occurs.

Section 5: Fire Fighting Measures

5a	Flammability	NFPA Fire rating = 1
5b	Extinguishing media	Water, CO ₂ , foam, dry powder
5c	Firefighting procedures	Follow general firefighting procedures indicated in the work place.
5d	Protective equipment	MSHA/NIOSH approved self-contained breathing gear, full protective clothing.
5e	Combustion products	Carbon oxides and other toxic gasses and vapors.
5f	Unusual hazards	Product is not combustible until moisture is removed. Resin begins to burn at approximately 230°C (446°F). Auto ignition can occur above 500°C (932°F).

Section 6: Accidental Release Measures

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| 6a | Personal precautions | Keep people away, spilled resin can be a slipping hazard, wear gloves and safety glasses to minimize skin or eye contact. |
| 6b | Incompatible chemicals | Strong oxidants can create risk of combustion products similar to burning, exposure to strong bases can cause a rapid temperature increase. |
| 6c | Environmental precautions | Keep out of public sewers and waterways. |
| 6d | Containment materials | Use plastic or paper containers, unlined metal containers not recommended. |
| 6e | Methods of clean-up | Sweep up material and transfer to containers. |

Section 7: Handling and Storage

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| 7a | Handling | Avoid prolonged skin contact. Avoid contact with salts or with salty water to prevent premature exhaustion of the resin. Keep resin moist and avoid allowing resin to completely dry. |
| 7b | Storage | Store in a cool dry place (1°C - 45°C, 34°F - 113°F) in the original shipping container. This product is thermally sensitive and will have reduced shelf life if subjected to extended periods of time at temperatures exceeding 45°C (113°F). Although freezing does not usually damage ion exchange resins, avoid repeated freeze thaw cycles. |
| 7c | TSCA considerations | Ion exchange resins should be listed on the TSCA Inventory in compliance with State and Federal regulations. |

Section 8: Exposure Controls/Personal Protection

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| 8a | OSHA exposure limits | None noted. |
| 8b | Engineering controls | Provide adequate ventilation. |
| 8c | Personal protection measures | |
| | Eye protection | Safety glasses or goggles. |
| | Respiratory protection | Not required for normal use. |
| | Protective gloves | Not required for limited exposure but recommended for extended contact. |

Section 9: Physical and Chemical Properties

Appearance	Solid beads approximately 0.6mm diameter
Flammability or explosive limits	Flammable above 500°C (932°F)
Odor	None
Physical state	Solid
Vapor pressure	Not available
Odor threshold	Not available
Vapor density	Not available
pH	Acidic or basic when mixed with water
Relative density	Approximately 700 grams/Liter
Melting point/freezing point	Does not melt, freezes at approximately 0°C (32°F)
Solubility	Insoluble in water and most solvents
Boiling point	Does not boil
Flash point	Approximately 500°C (932°F)
Evaporation rate	Does not evaporate
Partition coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Approximately 500°C (932°F)
Decomposition temperature	Above 230°C (446°F)
Viscosity	Not applicable

Section 10: Stability and Reactivity

10a Stability	Stable under normal conditions
10b Conditions to avoid	Heat, exposure to strong oxidants.
10c Hazardous by-products	Organic sulfonates, amines, charred polystyrene, aromatic acids and hydrocarbons, organic amines, nitrogen oxides, carbon oxides, chlorinated hydrocarbons.
10d Incompatible materials	Strong oxidizing agents (such as HNO ₃), strong bases (such as NaOH), strong acids (such as HCL and H ₂ SO ₄)
10e Hazardous polymerization	Does not occur.

Section 11: Toxicological Information

11a	Likely routes of exposure	Oral, skin or eye contact.
11b	Effects of exposure	
	Delayed	None known.
	Immediate (acute)	Rash or burn caused by acidity or causticity
	Chronic	None known.
11c	Toxicity measures	
	Skin adsorption	Unlikely
	Ingestion	Oral toxicity believed to be low, but no LD50 has been established.
	Inhalation	Unknown, vapors are very unlikely due to physical properties (insoluble solid).
11d	Toxicity symptoms	
	Skin adsorption	Rash or burn.
	Ingestion	Indigestion or general malaise.
	Inhalation	Unknown
11e	Carcinogenicity	None known.

Section 12: Ecological Information

12a	Eco toxicity	Not harmful to plant or animal life.
12b	Mobility	Insoluble, acidity or causticity may escape if wet.
12c	Biodegradability	Not biodegradable.
12d	Bioaccumulation	Insignificant.
12e	Other adverse effects	Not harmful to the environment.

Section 13: Disposal Considerations

13a	General considerations	Material is non-hazardous
13b	Disposal containers	Most plastic and paper containers are suitable. Avoid use of unlined metal containers.
13c	Disposal methods	No specific method necessary.
13d	Sewage disposal	Not recommended.
13e	Precautions for incineration	May release acids and toxic vapors when burned.
13f	Precautions for landfills	pH of spent resin may be high or low. Resins used to remove hazardous materials may then become hazardous mixtures.

Section 14: Transportation Information

14a	Transportation Class	Not classified as a dangerous good for transport by land, sea or air.
14b	TDG	Not regulated.
14c	IATA	Not regulated.
14d	DOT (49 CFR 172.101)	Not regulated.

Section 15: Regulatory Information

15a	CERCLA	Not regulated.
15b	SARA Title III	Not regulated.
15c	Clean Air Act	Not regulated.
15d	Clean Water Act	Not regulated.
15e	TSCA	Not regulated
15f	Canadian Regulations WHMIS TDG	Not a controlled product. Not regulated.
15g	Mexican Regulations	Not dangerous.

Section 16: Other Information

The information provided in this safety data sheet is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty or guarantee of accuracy, expressed or implied is given. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that their activities comply with federal, state, and local laws.

16a	Date of revision	26 February 2016
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