Safety Data Sheet
Product Name: MBD-10-NH4
(Mixture of Hydroxide form Type 1 Anion and Ammonium form Cation resin)
Effective date: 10 January 2020

Section 1: Identification

1a Product Name: ResinTech MBD-10-NH4
1b Common Name: Mixed Bed ion exchange resin
1c Intended use: All applications where an ammoniated mixed bed is needed.
1d Manufacturer: ResinTech, Inc.
   Address: 1801 Federal Street, Camden, NJ 08105 USA
   Phone: 856-768-9600
   Email: ixresin@resintech.com

Section 2: Hazard Identification

2a Hazard classification: Not hazardous or dangerous

<table>
<thead>
<tr>
<th>Product Hazard Rating</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health = 1</td>
<td>0 = Negligible</td>
</tr>
<tr>
<td>Fire = 1</td>
<td>1 = Slight</td>
</tr>
<tr>
<td>Reactivity = 0</td>
<td>2 = Moderate</td>
</tr>
<tr>
<td>Special – N/A</td>
<td>3 = High</td>
</tr>
<tr>
<td></td>
<td>4 = Extreme</td>
</tr>
</tbody>
</table>

2b Product description: 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.

2c Potential health effects: Will cause eye irritation. May cause mild skin irritation. Ingestion is not likely to pose a health risk.

2d Environmental effects: This product may alter the pH of any water that contacts it.
Warning (contains mixed bed ion exchange resin)

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

ResinTech, Inc.
1801 Federal Street,
Camden, NJ 08105 USA
856 768-9600
Ixresin@resintech.com
Section 3: Composition/ Information on Ingredients

3a Chemical name
Mixture of polystyrene sulfonate in the ammonium form and trimethylamine functionalized chloromethylated copolymer of polystyrene in the hydroxide form.

3b Ingredients
- Polystyrene sulfonate in the ammonium form
  CAS# 69011-21-8 (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, CO2, foam, dry powder

5c Fire fighting Procedures
Follow general fire fighting procedures indicated in the work place. Seek medical attention if discomfort continues.

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 230º C. Auto ignition can occur above 500º C.
### Section 6: Accidental Release Measures

<table>
<thead>
<tr>
<th>6a</th>
<th>Personal Precautions</th>
<th>Keep people away, spilled resin can be a slipping hazard, wear gloves and safety glasses to minimize skin or eye contact.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6b</td>
<td>Incompatible Chemicals</td>
<td>Strong oxidants can create risk of combustion products similar to burning, exposure to strong bases can cause a rapid temperature increase.</td>
</tr>
<tr>
<td>6c</td>
<td>Environmental Precautions</td>
<td>Keep out of public sewers and waterways.</td>
</tr>
<tr>
<td>6d</td>
<td>Containment Materials</td>
<td>Use plastic or paper containers, unlined metal containers not recommended.</td>
</tr>
<tr>
<td>6e</td>
<td>Methods of Clean-up</td>
<td>Sweep up material and transfer to containers.</td>
</tr>
</tbody>
</table>

### Section 7: Handling and Storage

<table>
<thead>
<tr>
<th>7a</th>
<th>Handling</th>
<th>Avoid prolonged skin contact. Keep resin moist and avoid allowing resin to completely dry.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7b</td>
<td>Storage</td>
<td>Store in a cool dry place (0º to 45º C) 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 50º C. Although freezing does not usually damage ion exchange resins, avoid repeated freeze thaw cycles.</td>
</tr>
</tbody>
</table>

### Section 8: Exposure Controls/Personal Protection

<table>
<thead>
<tr>
<th>8a</th>
<th>OSHA exposure limits</th>
<th>None noted.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8b</td>
<td>Engineering Controls</td>
<td>Provide adequate ventilation.</td>
</tr>
<tr>
<td>8c</td>
<td>Personal Protection Measures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eye Protection</td>
<td>Safety glasses or goggles.</td>
</tr>
<tr>
<td></td>
<td>Respiratory Protection</td>
<td>Not required for normal use.</td>
</tr>
<tr>
<td></td>
<td>Protective Gloves</td>
<td>Not required for limited exposure but recommended for extended contact.</td>
</tr>
</tbody>
</table>
### Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid beads approx. 0.6 mm diameter</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td>Flammable above 500º C</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Acidic or basic when mixed with water</td>
</tr>
<tr>
<td>Relative density</td>
<td>Approx 700 grams/Liter</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Does not melt, freezes at approx. 0 C</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water and most solvents</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Does not boil</td>
</tr>
<tr>
<td>Flash point</td>
<td>Approx 500º C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Does not evaporate</td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Approx 500º C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Above 230º C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### 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 HNO₃), strong bases (such as NaOH), strong acids (such as HCl and H₂SO₄) |
| 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 acutely 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  
Not a controlled product

TDG  
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 data shown above. However, no warranty or guarantee of accuracy, express 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 10 January 2020