

Material Safety Data Sheet

SECTION 1 – CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Type: Mixed Exchange Resins, Strong Acid Resin in Hydrogen Form and Strong Base Resin in Hydroxide Form

Product Names: NR-44 family, including NR-44LC.

Chemical Family: Mixture of strong acid cation exchange resin in the hydrogen form and Type I strong base anion resin in the hydroxide form.

Manufacturer's Name: Siemens Industry, Inc. - Water Technologies Business Unit

Address: 4669 Shepherd Trail, Rockford, IL 61103

Product/Technical Information Phone Number: (815) 877-3041

Medical/Handling Emergency Phone Number: Call CHEMTREC at (800) 424-9300
24 hours a day

Transportation Emergency Phone Number: Call CHEMTREC at (800) 424-9300
24 hours a day

Issue Date: July 2007

Revision Date/Revision Number: April 2011/ Rev 1

SECTION 2 – COMPOSITION INFORMATION

<u>Chemical Name</u>	<u>Percent by Weight</u>	<u>CAS#</u>
Sulfonated copolymer of styrene and divinylbenzene in the hydrogen form	20 – 30	69011-20-7
Trimethylamine functionalized, chloromethylated copolymer of divinylbenzene and styrene in the hydroxide form	15 – 30	69011-18-3
Water	balance	7732-18-5

SECTION 3 – HAZARDS IDENTIFICATION

Appearance & Odor: Spherical beads/Odorless to slight amine odor

Emergency Overview:

- ♦ Corrosive to the eyes (may cause severe eye burns)
- ♦ Spills make the floor slippery

Fire & Explosion Hazards: This material will not burn until moisture is removed, then resin starts to burn in flame at 230°C. Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Nitric acid and other strong oxidizing agents can cause explosive-type reactions when mixed with ion exchange resins. Proper design of equipment to prevent build up of pressure is necessary if use of an oxidizing agent such as nitric acid is contemplated.

Primary Route(s) of Exposure: Eye contact

Inhalation – Acute Effects: Vapors are unlikely due to physical properties.

Material Safety Data Sheet

Skin Contact – Acute Effects: No adverse effects are expected from brief skin contact. Extended skin contact may cause skin rash.

Eye Contact – Acute Effects: The spherical beads may cause severe damage to eyes, eye irritation, redness, and moderate corneal injury

Ingestion – Acute Effects: Single dose oral toxicity is considered to be low. No hazards anticipated from swallowing small amounts incidental to normal handling operation. Swallowing large amounts may cause irritation to the gastrointestinal tract.

SECTION 4 – FIRST AID MEASURES

Inhalation First Aid: Remove affected person from area to fresh air and provide oxygen if breathing is difficult. Give artificial respiration ONLY if breathing has stopped and give CPR ONLY if there is no breathing and no pulse. Obtain medical attention. No adverse effects anticipated by this route of exposure.

Skin Contact First Aid: Immediately remove clothing from affected and wash skin vigorously with flowing water. Clothing should be washed before reuse. Seek medical attention if irritation develops. DO NOT instruct person to neutralize affected skin area.

Eye Contact First Aid: Immediately irrigate eyes with flowing water continuously for 15 minutes while holding eyes open. Contacts should be removed before or during flushing. Obtain medical attention. DO NOT instruct person to neutralize.

Ingestion First Aid: No adverse effects anticipated by this route of exposure incidental to proper industrial handling. If ingestion does occur, if victim is alert and not convulsing rinse mouth with water and give plenty of water to drink. If spontaneous vomiting occurs, have affected person lean forward with head down to avoid breathing in of vomitus. Rinse mouth again and give more water to drink. Obtain medical attention.

Medical Conditions Aggravated: There are no known conditions aggravated by exposure.

Note to Physician: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point/Method: Not applicable.

Auto Ignition Temperature: Above 500°C (900°F)

Upper/Lower Explosion Limits: Not applicable.

Extinguishing Media: Water, carbon dioxide, dry chemical

Fire Fighting Procedures: Keep people away. Isolate fire area and deny unnecessary entry. Cool surrounding area with water to localize fire zone. Soak thoroughly with water to cool and prevent reignition.

Material Safety Data Sheet

Use NIOSH approved positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or a safe distance.

Fire & Explosion Hazards: This material will not burn until moisture is removed, then resin starts to burn in flame at 230°C. Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Nitric acid and other strong oxidizing agents can cause explosive-type reactions when mixed with ion exchange resins. Proper design of equipment to prevent build up of pressure is necessary if use of an oxidizing agent such as nitric acid is contemplated.

Hazardous Products of Decomposition and/or Combustion: May include but are not limited to unidentified hydrocarbons, sulfur and nitrogen oxides, organic sulfonates and nitrates, carbon monoxide, carbon dioxide and benzene compounds.

NFPA Ratings:

HEALTH- 1 FLAMMABILITY- 1 REACTIVITY- 0

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill/Leak Procedures: Isolate spill area to prevent falls as material can be a slipping hazard. Avoid contact with eyes and skin. Material is heavier than water and has limited water solubility. It will collect on the lowest surface.

Cleanup: Clean up floor area. Sweep up.

Regulatory Requirements: Follow all applicable Federal, State, Local, or Provincial regulations.

Disposal: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State, Local and Provincial laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

SECTION 7 – HANDLING AND STORAGE

Handling: Practice reasonable care and caution. Metal equipment should be compatible with feed, regenerant, resin form and effluent of that process.

Storage: Keep containers tightly closed when not in use. Store between 35° - 100°F.

General Comments: Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

SECTION 8 –PERSONAL PROTECTION/ EXPOSURE CONTROL

Respiratory Protection: No respiratory protection should be needed.

Material Safety Data Sheet

Skin Protection: Wear gloves impervious to this material to prevent skin contact.

Eye Protection: Wear safety glasses. Wear chemical goggles if product contact is likely. Do not wear contact lenses while working with this product.

Ventilation Protection: Good general ventilation should be sufficient.

Other Protection: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Safety showers, with quick opening valves which stay open, and eye wash fountains, or other means of washing the eyes with a gentle flow of cool to tepid tap water, should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

Exposure Limits:

Exposure limits have not been developed for this product.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor: Spherical beads/Odorless to slight amine odor

Specific Gravity: Greater than water **Solubility in Water:** Insoluble

Auto Ignition Temperature: Above 500°C (900°F)

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable under normal handling and storage conditions.

Incompatibilities: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions and could result in slightly degraded resin or even an explosive reaction. Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

Polymerization: Hazardous polymerization cannot occur.

Decomposition: Hazardous decomposition products depend upon temperature, air supply, and the presence of other materials. Hazardous decomposition products may include and are not limited to unidentified hydrocarbons, sulfur and nitrogen oxides, organic sulfonates and nitrates, carbon monoxide, carbon dioxide and benzene compounds.

Conditions to Avoid: Resin can decompose at temperatures greater than 90°C (194°F). Do not pack column with dry ion exchange resins. Dry beads expand when wet. This expansion can cause a glass column to shatter.

Material Safety Data Sheet

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicological Data for Cation Resin:

No data available.

Toxicological Data for Anion Resin:

No data available.

SECTION 12 – ECOLOGICAL INFORMATION

The environmental fate and ecological toxicity are not known.

SECTION 13 – DISPOSAL CONSIDERATIONS

Spill/Leak Procedures: Isolate spill area to prevent falls as material can be a slipping hazard. Avoid contact with eyes and skin. Material is heavier than water and has limited water solubility. It will collect on the lowest surface.

Cleanup: Clean up floor area. Sweep up.

Regulatory Requirements: Follow all applicable Federal, State, Local, or Provincial regulations.

Disposal: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State Local and Provincial laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.

SECTION 14 – TRANSPORTATION INFORMATION

US Domestic:

This product is not hazardous for transportation purposes and is not regulated by US DOT when shipped domestically.

International:

This product is not a dangerous good for transportation purposes and is not regulated when shipped according to ICAO, IATA, or IMDG regulations.

SECTION 15 – REGULATORY INFORMATION

US Regulations:

SARA HAZARD CATEGORY:

Acute: yes

Chronic: no

Fire: no

Pressure Release: no

Reactivity: no

Canadian Regulations:

WHMIS Information: D2B - eye or skin irritant. Refer elsewhere in the MSDS for specific warnings and safe handling information.

Material Safety Data Sheet

CPR Statement: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 – OTHER INFORMATION

Disclaimer: The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the user thereof. It is the buyer's responsibility to ensure that its activities comply with federal, state, provincial and local laws.

Revision Indicator: April 2011, Revised Section 1 (Updated manufacturer's name)