SAFETY DATA SHEET

Sr Resin SDS - Column

Section 1: Chemical Product and Company Identification

Product Name Sr Resin

Product Number(s): SR10-C01-A, SR10-C20-A, SR1ML-R01-S, SR1ML-R50-S, SR5-C01-A, SR5-C20-A, SR8-C01-A,

SR8-C20-A, SR-C01-A, SR-C20-A, SR-C50-A, SR-SPC25-A

Product Synonym(s): Sr Resin Column

Identified Uses: Laboratory chemicals, manufacture of substances

Manufacturer: Eichrom Technologies LLC General (8-5 CST M-F)

1955 University Lane Information: 800-422-6693 (in USA)

Revision Date: 01-Feb-18

Lisle, Illinois 60532 630-963-0320

24 Hour Emergency Number (US/Canada): 1-800-255-3924 CHEMTEL Contract #:MIS9554039

24 Hour International Access Number: 1-813-248-0585

Country Specific Emergency Numbers:

Australia: 1-300-954-583 India: 000-800-100-4086 Brazil: 0-800-591-6042 Mexico: 1-800-99-731

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

GHS Classification of substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4)

Acute toxicity, Dermal (Category 4)

Skin Irritant Eye Irritant

Acute toxicity, Inhalation (Category 4)

Respiratory Tract Irritation

2.2 GHS Label elements, including precautionary statements

Pictogram:

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Signal Word Warning

Hazard Statement(s):

| H302 | Harmful if swallowed |
|------|----------------------------------|
| H312 | Harmful in contact with skin |
| H315 | Causes skin irritation |
| H319 | Causes serious eye irritation |
| H332 | Harmful if inhaled |
| H335 | May cause respiratory irritation |

Precautionary Statement(s):

| Pre | P261 | Avoid breathing dust/fume/gas/mist/vapors/spray. |
|----------|----------------|--|
| evention | P264 | Wash hands thoroughly after handling. |
| ntio | P270 | Do not eat, drink or smoke when using this product. |
| Š | P271 | Use only outdoors or in a well-ventilated area. |
| | P280 | Wear protective gloves, clothing, and eye protection. |
| Re | P301+P312 | IF SWALLOWED: Call a POISON CONTROL CENTER or doctor if you feel unwell. |
| Response | P302+P352 | IF ON SKIN: Wash with plenty of soap and water. |
| nse | P304+P340 | IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. |
| | P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| | P312 | Call a POISON CONTROL CENTER or doctor if you feel unwell. |
| | P332+P313 | If skin irritation occurs, seek medical attention. |

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| - | P337+P313 | If eye irritation persists, get medical attention. |
|----------|-----------|---|
| I | P362+P364 | Take off contaminated clothing and wash before reuse. |
| Storage | P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| Disposal | P501 | Dispose of contents/container in accordance with federal, state, and local regulations. |

2.3 Hazards Not Otherwise Classified (HNOC) or not covered by GHS:

| Component | | CAS_Number | Percentage Range |
|--|--|--|---|
| De-ionized water | | 007732-18-5 | 60-70% |
| Nonionic Acrylic Ester Polymer | | Trade Secret | 19-25% |
| 4,4'(5') di-t-butylcyclohexane-18-crown- | 6 | 223719-29-7 | 6-8% |
| N-Octanol | | 111-87-5 | 5-7% |
| Nitric Acid, Concentrated | | 7697-37-2 | approximately 0.1% |
| Section 4: First-aid Measures | | | |
| General Advice | | erties of this material hen evaluating first aid | nave not been established. Treat materia requirements. |
| Ingestion Contact local poison | | control center. | |
| Skin Contact | Wash immediately with soap and copious amounts of water. Remove and wash contaminated clothing promptly. If irritation develops, seek medical attention. | | |
| Eye Contact | Irrigate immediately with water for 15 minutes. Mechanical irritation is possible; seek medical attention. | | |
| Inhalation | Remove to fresh air. If breathing is labored, administer oxygen. If not breathing, give artificial respiration. Seek medical attention. | | |
| Most important symptoms and effects, both acute and delayed | | | effects are described in the labelling (see portant symptoms and effects are so far |
| Indication of any immediate medical attention and special treatment needed | | | |

| Section 5: Firefighting Measures | |
|----------------------------------|---|
| Extinguishing Media | Foam, CO2, Dry Chemical |
| Fire and Explosion Hazards | Polymer does not support flame. |
| | Highly toxic and irritating fumes may be released and extinguishing water runoff may be toxic. |
| Protective Equipment | Wear positive pressure self-contained breathing apparatus and full personal protective equipment. |
| Special Hazards | Possible combustion products include carbon dioxide and carbon monoxide. |
| | |

| Section 6: Accidental Release Measures | | |
|--|---|--|
| Personal Precautions | Use proper personal protect equipment (specified in section 8) | |
| | Surface may be slippery. | |
| Environmental Precautions | Avoid release to the environment. | |
| Methods and materials for containment and clean-up | Use adsorbent material to collect liquid component | |
| | Ventilate area and wash spill site after material pickup is complete. | |
| | Sweep up material and transfer to a suitable container for disposal. | |
| Reference to other sections | For disposal see section 13. | |

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| Section 7: Handling and Store | age | | |
| Conditions for safe handling | Use mechanical exhaust if dust is formed. | | |
| Conditions for safe storage | Normal warehouse storage in cool, dry area is satisfactory. | | |
| | Keep away from strong oxidizers. | | |
| Specific End Use(s) Apart from the uses mentioned in section 1 no other specific uses are stipulate | | other specific uses are stipulated. | |
| Section 8: Exposure Controls | s / Personal Protection | | |
| Control Parameters | Per AIHA WEEL, 8hr-TWA for Octan-1-ol is 50 | ppm. | |
| Exposure Controls | Avoid contact with skin, eyes, and clothing. W | ash hands before breaks and | |

| Exposure Controls | immediately after handling the product. |
|------------------------|---|
| | Mechanical exhaust is required. |
| | Do not eat, drink or smoke when using this product. |
| Eye protection | Wear safety glasses. |
| Skin Protection | Wear impervious gloves and clean body-covering clothing. |
| Respiratory protection | Use NIOSH/MSHA approved respirator when handling material outside of mechanical exhaust. An air-purifying respirator with an organic vapor cartridge or |

canister may be permissible. Do not breathe dust or mist.

Section 9: Physical Properties

| Information on basic ph | nysical and chemical properties | | |
|-------------------------|---|---------------------------------|--|
| Appearance: | Powder-Liquid Mixture White bead in colorless liquid | Explosion Limits (Upper/Lower): | Not Established |
| Odor: | | Flash Point: | Not established |
| Odor Threshold: | Not Established | Flammability: | Not Established |
| pH: | 1.3 (dilute acid) | Autolgnition Temperature: | Not Established |
| Melting Point: | 0 to -5°C (dilute acid); Not determined for powder | Decomposition Temperature | Not Established |
| Boiling Point: | 100 to 120°C (dilute acid); Not determined for powder | VaporPressure: | 49 hPa (37 mmHg) at 50°C (122°F) for nitric acid |
| Relative Density: | 1.001 g/mL at 25°C (powder is | VaporDensity: | Not Established |
| | 0.35 g/mL) | Evaporation Rate: | Not Established |
| Solubility: | (in water) Beads are insoluble, acid is miscible with water | | |
| Partition Coefficient: | Not Established | | |
| Viscosity: | Not Established | | |

Section 10: Stability and Reactivity

| Reactivity | No hazardous reactions if stored and handled as indicated. |
|----------------------------------|--|
| Chemical Stability | Stable under normal handling and storage conditions. |
| Hazardous reactions | Reacts with strong oxidizing agents. |
| Materials to Avoid | Contact with strong oxidizers will degrade material. |
| Hazardous decomposition Products | Possible combustion products include carbon monoxide, carbon dioxide, and nitrogen oxides. |

Section 11: Toxicology Information

| | The product has not been tested. The statements on toxicology have been derived from the properties of the individual components. |
|--------------------|---|
| Acute Toxicity | |
| Oral Effects | Polymer, Oral LD50 > 5,000 mg/kg (rat). |
| | LD50 for cyclocrown has not been determined. |
| | LD50 for octan-1-ol is 1790 mg/kg (mouse). |
| Inhalation Effects | Nitric Acid LC50 = 138 ppm/30 min (rat). |
| Eye Effects | No data available. May cause irritation or corneal injury. |
| Dermal Effects | Octan-1-ol can be absorbed through skin. |

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| Skin corrosion/irritation | |
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| | Nitric Acid solution is Non-corrosive to skin via Corrositex® (skin) test. |
| | Irritant to skin and mucous membranes. |
| | Repeated exposure of the skin to low concentrations of nitric acid may cause dermatitis, characterized by erythema, itching and a dry scaly appearance. |
| Serious eye damage/irritation | |
| | Irritant to eye. |
| Respiratory or skin sensitization | |
| | Long term inhalation exposure to nitric acid fumes can lead to chronic respiratory irritation such as bronchitis and may also lead to dental erosion as the nitric acid deposits on the teeth and erodes the outer coating of enamel. |
| Germ Cell Mutagenicity | |
| | No data available regarding mutagenic effects of this product. |
| Carcinogenicity | |
| | No data available regarding carcinogenic effects of this product. |
| Reproductive Toxicity | |
| | Animal studies provide no indication of a teratogenic effect for nitric acid. No data available for other components. No other reproductive data available for nitric acid. |
| Specific Target Organ Toxicity | |
| Single Exposure | No data available regarding specific target organ toxicity single exposure. |
| Repeated Exposure | No data available regarding specific target organ toxicity repeated exposure. |
| Aspiration Hazard | |
| | No data available regarding the aspiration hazard of this product. |
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|--------------|----------|------------|--------------|
| Section 12 | 7. Ecolo | adical In | tormotion |
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| Aquatic Toxicity | *The product has not been tested. The statement has been derived from the properties of individual components using an additivity method. |
|-------------------------------|--|
| Persistance and degradability | No data are available for persistance and degradability. |
| Bioaccumulative potential | No data are available for bioaccumulative potential. |
| Mobility in Soil | No data are available for mobility in soil. |
| PBT/vPvB assessment | PBT/vPvB assessment not available as chemical safety assessment not required/not conducted. |
| Other | An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects |

| Section 13 | 3: Disposal | Considerations |
|------------|-------------|----------------|
| 19ection 1 | s. Disposai | Considerations |

| General | Dispose of contents/container in accordance with federal, state, and local regulations. |
|---------|---|
| Unused: | Dispose of liquid according to local regulations for acids. |
| | Bury resin in licensed landfill or burn in approved incinerator equipped with an afterburner and scrubber according to local, state, and federal regulations. |
| Used: | For resin contaminated with hazardous materials, dispose of mixture as hazardous material according to local, state, and federal regulations. |

Section 14: Transport Information

| Air Transport: | Not Hazardous per IATA 2014 |
|-------------------|------------------------------|
| Ground Transport: | Not D.O.T. Hazardous |
| Water Transport: | Not Hazardous per IMDG 2012. |

Section 15: Regulatory Information

| Section 15: Regulatory Information | | |
|-------------------------------------|--|--|
| Canadian Ingredient Disclosure List | A component, Nitric Acid [CAS 7697-37-2] is listed on the Canadian Ingredient Disclosure List | |
| US Federal Regulations | | |
| | Toxic Substances Control Act (TSCA): This material is provided to you under the research and development (R&D) exemption. | |
| | The following component is subject to reporting levels established by SARA Title III, Section 302: Nitric Acid, CAS-No. 7697-37-2 (2007) 1000 lb TPQ | |
| | The following component is subject to reporting levels established under CERCLA: CAS# 7697-32-2: 1000 lb final RQ; 454 kg final RQ | |

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| | The following component is listed as a hazardo Acid [CAS -7697-37-2] | ous substance under the CWA: Nitric |
| | A component, CAS# 7697 -37-2 is considered | highly hazardous by OSHA. |
| | The following component is an Acute Health H. SARA Title III, Sections 311/312: Nitric Acid, C | • |
| | The following component is subject to reporting Section 313: Nitric Acid, CAS-No. 7697-37-2 (| |
| US State Regulations | | |
| | A component, Nitric Acid [CAS 7697-37-2], is li know lists: CA, MA, MN, NJ, PA | sted on the following state right to |
| | A component, Octan-1-ol [CAS 111-87-5], is lis know lists: MN, PA | sted on the following state right to |

| Section 16: Other Informat | tion |
|----------------------------|---|
| Revision | Updated to GHS SDS format, including classification |
| | 1-Feb-2018: Update Emergency Phone Numbers |
| SDS Prepared By: | Eichrom Technologies LLC |

The information set forth herein has been gathered from standard reference materials and is to the best knowledge and belief of Eichrom Technologies LLC, accurate and reliable. Such information is offered solely for your consideration, investigation and verification, and does not suggest or guarantee that the hazard precautions or procedures mentioned are the only ones that exist. Eichrom Technologies LLC makes no warrantees, express or implied, with respect to the use of such information or the use of the specific material identified herein in combination with any other material or process, and assumes no responsibility therefore.