SAFETY DATA SHEET

AF-xx-4202, AF-xx-4202-BB, ML-xx-4202, VP-xx-4202

(Layered DI Twin Bed Cartridge)

Effective date 1 January 2021

SECTION 1: Identification	
1A: Product Names	AF-10-4202, AF-20-4202, AF-10-4202-BB, AF-20-4202-BB, ML-10-4202, VP-17-4202
1B: Common Name	Layered DI Twin Bed Cartridge (SBG2-OH (Anion) – CG8-H (Cation))
1C: Intended use	All applications where deionized water is needed
1D: Manufacturer Address	ResinTech, Inc. 1801 Federal Street, Camden, NJ 08105 USA
Contact Information:	856-626-1550 info@resintech.com

SECTION 2: Hazard Identification	
2A: OSHA Hazard classification 0 = Negligible 1 = Slight 2 = Moderate 3 = High 4 = Extreme	Not hazardous or dangerous Health - 1 (1 = Slight) Fire - 1 (1 = Slight) Reactivity - 0 (0 = Negligible) Special – N/A
⚠ **WARNING**	(Contains hydrogen form cation resin) (Contains hydroxide form strong base anion resin) H315: Causes skin irritation (Category 2) H319: Causes serious eye irritation (Category 2A) H335: May cause respiratory irritation

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SECTION 2: Hazard Identification Continued	
Precautionary Statements	P264: Wash hands thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face 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.
2B: Product description	Cation - Amber, tan or black colored solid beads approximately 0.6 mm diameter with little or no odor. Anion - Yellow, red or black colored solid beads approximately 0.6 mm diameter with moderate to strong amine odor.
2C: Precautions for use	Safety glasses and gloves recommended.Slipping hazard if spilled.
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

SECTION 3: Composition/ Information on Ingredients	
3A: Chemical name	Cation- Polystyrene sulfonate in the hydrogen form Anion- Dimethylethanolamine functionalized chloromethylated polystyrene copolymer in the hydroxide form
3B: Ingredients: Water	Cation- CAS# 7732-18-5 (40 – 60%) Anion- CAS# 7732-18-5 (45 – 65%)
Polystyrene sulfonate in the hydrogen form	CAS# 69011-20-7 (40 - 60%)
Dimethylaminoethanol functionalized Chloromethlyated copolymer of Styrene and divinylbenzene in the Hydroxide form	CAS# 69011-16-1 (35 - 55%)

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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: Fire fighting 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. Auto ignition can occur above 500° C.

SECTION 6: Accidental Release Measures	
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.

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SECTION 7: Handling and Storage	
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 (0° to 45° 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 50° C. Although freezing does not usually damage ion exchange resins, avoid repeated freeze thaw cycles.
7A: 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	
8A: Personal Precautions	None noted.
8B: Incompatible Chemicals	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	Cation- Amber, tan or black beads approx. 0.6 mm diameter. Anion- Yellow, red or black beads approx. 0.6 mm diameter.
Flammability or explosive limits	Flammable above 500° C
Odor	Cation- None Anion- Moderate to strong amine odor
Physical State	Solid
Vapor pressure	N/A
Odor threshold	N/A
Vapor density	N/A

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SECTION 9: Physical and Chemical Properties	
pH	Cation- Acidic when mixed with water Anion- Basic when mixed with water
Relative density	Cation- Approx 800 grams/Liter Anion- Approx 700 grams/Liter
Melting point/freezing point	Does not melt, freezes at approx. 0 C
Solubility	Insoluble in water and most solvents
Boiling point	Does not boil
Flash point	Approx 500° C
Evaporation rate	Does not evaporate
Partition Coefficient (n-octonol/water)	N/A
Auto-ignition temperature	Approx 500° C
Decomposition temperature	Above 230° C
Viscosity	N/A

SECTION 10: Stability and Reactivity	
10A: Stability	Stable under normal conditions.
10B: Conditions to Avoid	Heat, exposure to strong oxidants.
10C: Hazardous by-products	Cation - Organic sulfonates, charred polystyrene, aromatic acids and hydrocarbons, organic amines, nitrogen oxides, carbon oxides, chlorinated hydrocarbons. Anion - Dimethyl ethanolamine, charred polystyrene, aromatic acids and hydrocarbons, organic amines, nitrogen oxides, carbon oxides, chlorinated hydrocarbons.
10D: Incompatible materials	Cation - Strong oxidizing agents (such as HNO_3), strong bases (such as NaOH). Anion - Strong oxidizing agents (such as HNO_3), strong acids (such as HCl, H_2SO_4 etc)
10E: Combustion Products	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. Chronic - None known.

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SECTION 11: Toxicological Information	
11C: Toxicity Measures	Skin Adsorption - Unlikely, some transfer of acidity is possible. 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. However, pH may be below general landfill limits.
13B: Disposal Containers	Most plastic and paper containers are suitable. Avoid the use of unlined metal containers.
13C: Disposal methods	No specific method necessary.
13D: Sewage Disposal	Not recommended
13E: Precautions for incineration	May release acids, organic amines 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.

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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	
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features. 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	1 January 2021

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