

## Safety Data Sheet

**Product Names: AF-xx-4200, VP-xx-4200**  
(DI High Purity/Oxygen Removal Cartridge)  
Effective March 2015

### Section 1: Identification

- 1a Product Names AF-xx-4200, VP-xx-4200
- 1b Common Name DI High Purity/Oxygen Removal (Strong base anion in sulfite form and Mix Bed ion exchange) layered Cartridge.
- 1c Intended use Applications where deionized water is needed with the addition of oxygen removal.
- 1d Manufacturer  
Address  
Phone  
Email
- Aries FilterWorks  
117 Jackson Road,  
Berlin, NJ 08009 USA  
856-626-1550  
info@ariesfilterworks.com

### Section 2: Hazard Identification

- 2a OSHA Hazard classification

Not hazardous or dangerous

Product Hazard Rating	Scale
Health = 1	0 = Negligible
Fire = 1	1 = Slight
Reactivity = 0	2 = Moderate
Special – N/A	3 = High
	4 = Extreme

- 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.
- 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.

### Section 2A: Hazard classification UN OSHA globally harmonized system



## **WARNING**

**(Contains sulfite form anion exchange resin)**

**H315: Causes skin irritation (Category 2)**

**H319: Causes serious eye irritation (Category 2A)**

**H335: May cause respiratory irritation**

**EUH031: Contact with acids liberates toxic gas**

### **Precautionary Statements**

P233: Keep container tightly closed.

P261: Avoid breathing dust/fume/ gas/mist/vapours/spray

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

#### Mix Bed

3a	Chemical name	Mix bed 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%)

#### Sulfite form Anion

3a	Chemical name	Dimethyl ethanolamine functionalized chloromethylated copolymer of polystyrene in the sulfite form.
3b	Ingredients	
	Dimethyl ethanolamine functionalized chloromethylated copolymer of styrene and divinylbenzene in the sulfite form	CAS# 69011-46-7 (40 - 65%)
	Water	CAS# 7732-18-5 (40 – 65%)

### 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	Firefighting Procedures	Follow general firefighting 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 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.   |

## 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 45° C. 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

- |    |                              |   |
|----|------------------------------|---|
| 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

### Mix Bed

Appearance	Solid beads approx 0.6 mm diameter
Flammability or explosive limits	Flammable above 500° C
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	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-octanol/water)	Not applicable
Auto-ignition temperature	Approx 500° C
Decomposition temperature	Above 230° C
Viscosity	Not applicable

### Sulfite form Anion

Appearance	White, yellow, or orange beads approx. 0.6 mm diameter.
Flammability or explosive limits	Flammable above 500° C
Odor	Little or no odor
Physical State	Solid
Vapor pressure	Not available
Odor threshold	Not available
Vapor density	Not available
pH	Near neutral
Relative density	Approx 710 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-octanol/water)	Not applicable
Auto-ignition temperature	Approx 500° C
Decomposition temperature	Above 230° C
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	<b>Mixed Bed</b> - Organic sulfonates, amines, charred polystyrene, aromatic acids and hydrocarbons,

	organic amines, nitrogen oxides, carbon oxides, chlorinated hydrocarbons. <b>Sulfite form Anion</b> - Dimethyl ethanolamine, sulfur oxides, charred polystyrene, aromatic acids and hydrocarbons, organic amines, nitrogen oxides, carbon oxides, chlorinated hydrocarbons.
10d Incompatible materials	Strong oxidizing agents (such as HNO <sub>3</sub> ), strong bases (such as NaOH), strong acids (such as HCl and H <sub>2</sub> SO <sub>4</sub> )
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	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.

16 Date of Revision      9 July 2018