



MATERIAL SAFETY DATA SHEET

AF SERIES PH ADJUSTING CALCOR CARTRIDGE

Product Name: AF-10-3232, AF-20-3232, AF-10-3232-BB, AF-10-3232-BB
Mixture of Magnesium Oxide Media and Calcium Carbonate

Effective Date: 01/02/12

1. Company Information:

Company Address - Magnesium Oxide: Martin Marietta Magnesia Specialties, LLC
1800 Eastlake Road
Mainstee, MI 48660
Ph: (410) 780-5500

Company Address - Calcium Carbonate: Imerys
Pigments & Additives Group
100 Mansell Court East, Suite 300
Roswell, GA 30076
Ph: (770) 594-0660
Fax: (770) 645-3384

Company Address - Cartridge: Aries Filterworks
1 ResinTech Plaza
160 Cooper Road
West Berlin, NJ 08091 USA

Information Numbers: Phone Number: 856-768-9600
Fax Number: 856-768-9601
Email: aries@resintech.com
Website: www.ariesfilterworks.com

Identification:

Magnesium Oxide: Primary Names: Corosex, FloMag PWT 6 x 16
Other Names: calcined brucite magnesia, "calcined magnesia", "calcined magnesite",
dead-burned, dead burnt, magnesia, "Magnesite burnt deadburned refractory",
periclase, "sea-water magnesia"

Calcium Carbonate: Primary Names: Calcite, XO White
Other Names: Ground Limestone, Ground Calcium Carbonate

2. Composition/Ingredients:

Table with 5 columns: Ingredient, Wt % (Approx), Case No, OSHA PEL, ACGIH TLV*. Rows include Ground Limestone, Crystalline Silica, Quartz, Water, Magnesium Oxide, and Oxides of Silica, Iron, Aluminum and Calcium.

* Unless otherwise noted, all PEL and TLV values are reported as 8 hour time weighted averages (TWA).



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This document is prepared pursuant to the OSHA Hazard Communication Standard (29CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

3. Physical/Chemical Data:

Calcium Carbonate:

Physical State:	Solid
Appearance & Odor:	Odorless, white
pH (Aqueous Suspension)	9-10
Specific Gravity:	~2.7 (water = 1)
Melting Point	825 °C
% Solubility in Water:	1.4 mg/100 ml @ 25 °C
Vapor Pressure (MM HG):	Not Applicable
Evaporation Rate (water = 1):	Not Applicable
Boiling Point:	Not Applicable
Freezing Point:	Not Applicable
VOC:	None
Vapor Density:	Not Applicable

Magnesium Oxide:

Physical State:	Solid
Appearance & Odor:	Odorless, white
pH (Aqueous Suspension)	~10 (saturated solution)
Density:	3.5 to 3.6
% Solubility in Water:	slightly soluble in water
Vapor Pressure (MM HG):	~ Zero mm Hg at 20 °C
Evaporation Rate (water = 1):	Not Applicable
Decomposition Temperature:	> 1700 °C
Melting Point	2800 °C
Boiling Point:	3582 °C @ 760 mm Hg
Freezing Point:	Not Applicable
VOC:	None
Vapor Density:	Not Applicable

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

4. Fire & Explosion Hazard Data

Flammable Limits:	Not Flammable
Unusual Fire & Explosion Hazards:	No special fire or explosion hazard
Combustion Products:	
Extinguishing Media:	Water, CO ₂ , Dry Chemical, or foam
Special Fire Fighting Procedures:	MSHA/NIOSH approved self-contained breathing gear.



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5. Reactivity Data

Stability:	Stable under ambient temperatures and pressures
Conditions to Avoid:	<u>Magnesium Oxide:</u> Exposure to water may cause this product to very slowly hydrate over time, during which heat may be generated (exothermic reaction).
Hazardous by Products:	Calcium carbonate will react with acids to produce carbon dioxide gases.
Materials to avoid contact with:	Acids should be avoided. Heat will be generated with Magnesium Oxide. Carbon Dioxide will be released with Calcium Carbonate. <u>Magnesium Oxide:</u> Chlorine Trifluoride reacts violently, producing flame; Phosphorus Pentachloride – incandescences brilliantly
Hazardous Polymerization:	Material does not polymerize
Storage:	Store in a cool dry place

6. Health Hazards & Sara (Right to Know)

Emergency First Aid Procedures:	Contact with eyes can and skins can cause irritation.
Skin Absorption:	<u>Calcium Carbonate:</u> Prolonged or repeated exposure may cause skin irritation. Ground limestone is not expected to be absorbed through the skin in harmful amounts or to produce an allergic skin reaction
Ingestion:	No adverse effect is expected. If ingested, seek medical advice.
Inhalation:	<u>Calcium Carbonate:</u> Inhalation of excessive quantities of ground limestone dust may irritate the respiratory tract. <u>Magnesium Oxide:</u> Dust may irritate eyes, skin, nasal passages and respiratory tract. INHALED DUST: sneezing, coughing, discolored sputum. INHALED FUME: metal fume fever has influenza-like symptoms including fever, chills, perspiration, cough, nasal irritation, chest pain, nausea, head aches, vomiting and muscular weakness
Systemic & Other Effects:	<u>Calcium Carbonate:</u> No applicable information was found concerning any potential health effects resulting from subchronic or chronic exposure to ground limestone. Eye contact may cause mechanical irritation. Calcium carbonate is a severe eye irritant. Skin contact may aggravate existing dermatitis. Calcium carbonate is a moderate skin irritant. Inhalation from prolonged and continuous exposure to excessive quantities of dust may



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aggravate existing asthmatic or respiratory conditions. Calcium carbonate Oral LD(50) in rates is 6450 mg/kg

Magnesium Oxide: Effects of Acute exposure: Dust may irritate eyes, skin, nasal passages and respiratory tract. Ingestion generally causes purging of the bowels, however, swallowing large amounts may lead to bowel obstruction.

Carcinogenicity:

Calcium Carbonate: This product typically contains crystalline silica (quartz sand) above 0.1% as a naturally occurring impurity. The International Agency for Research on Cancer has concluded that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group I)." It also noted that carcinogenicity was not detected in all industrial circumstance studies, and may be dependent on external factors affecting its biological activity or distribution of its polymorphs. (See IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 68 (1997).) Exposure to respirable silica has also been associated with silicosis, scleroderma, and nephrotoxicity. (See Occupational Lung Disorders, Third Edition, Chapter 12 (1994) and American Journal of Respiratory and Critical Care Medicine, Volume 155, pp 761-765 (1997).)

SARA – TITLE 3, SECTIONS 311 & 312:

Magnesium Oxide

Section 311/312 - Categories: Magnesium oxide- Acute hazard (nuisance dust)

Section 312- Inventory Reporting: Although not specifically listed, magnesium oxide does meet the definition of a hazardous material under OSHA's Hazard Communication Standard at 29 CFR 1910.1200, and therefore is subject to Tier I and/or Tier II annual inventory reporting.

Calcium Carbonate

This product does not contain extremely hazardous substances subject to the reporting requirements of Section 302 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 355.

SARA Title III Section 311 and 312 Health and Physical Hazard Categories per 40 CFR 370.2:

Immediate Yes	Delayed Yes	Fire No	Pressure No	Reactivity No
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SARA Section 313 Notification: This product does not contain toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

7. First Aid

Eyes:	Do not rub eyes. Wash eyes under slowly running water for at least fifteen minutes, making sure eyes are held wide open and moved slowly in every direction. Ensure no solid particles remain in creases of eyelids. If so, continue to wash. If irritation persists, consult an ophthalmologist
Skin:	Remove from source of exposure. Remove contaminated clothing and wash affected area thoroughly with a mild soap and water. Wash contaminated clothing before reusing
Ingestion:	Follow good industrial hygiene practices. If ingested, do not induce vomiting. If conscious, drink two glasses of water. Seek medical aid if necessary.
Inhalation:	Remove to fresh air immediately. Do not permit exposed person to remain in dusty environment without adequate respiratory protection.

8. Control Measures

Respiratory protection:	Not required for normal uses if irritation occurs from breathing-get fresh air!
Eye protection:	Splash goggles
Ventilation:	Normal
Protective Gloves:	Not required.

9. Safe handling procedures

In Case of Spills:	Sweep up material and transfer to containers. Use caution – the floor will when wet.
Disposal Method:	Dispose according to local, state, and federal regulations. If discarded in its purchased form, this product would not be hazardous waste either by listing or by characteristic.

10. Additional Information:

TSCA Considerations:	<u>Calcium Carbonate</u> – Product is listed in Initial Inventory, Vol. 1, Appendix A, CAS 1317-65-3. <u>Magnesium Oxide</u> : Product is listed in Initial Inventory List: CAS 1309-48-4
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11. Regulatory Information: (Not meant to be all-inclusive—selected regulations represented.)

Notice:

The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, 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 its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations

**Canadian Regulations:
WHMIS Information:**

The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

This product is not a "Controlled Product" under WHMIS.

Canadian TDG Information:

For guidance, the Transportation of Dangerous Good Classification for this product is: Not regulated