

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 regulations

Printing date: October 16, 2017

Revision: October 16, 2017

1 Identification

- **Trade name:** **BIRM**
- **Article number:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Water conditioner
- **Restrictions on use:** See Sections 8 and 10 for further information.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Clack Corporation
4462 Duraform Lane
Windsor, WI 53598 USA
Tel: 608-846-3010
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Carc. 1A H350 May cause cancer.
STOT RE 2 H373 May cause damage to the central nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.

- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS08

- **Signal word:** Danger
- **Hazard statements:**
H350 May cause cancer.
H373 May cause damage to the central nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Precautionary statements:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P304+P312 IF INHALED: Call a POISON CENTER/doctor if you feel unwell.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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· NFPA ratings (scale 0 - 4)



Health = 1
Fire = 0
Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = *1
Fire = 0
Reactivity = 0

* - Indicates a long term health hazard from repeated or prolonged exposures.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Components:

14808-60-7	Quartz (SiO ₂)	☠ Carc. 1A, H350	40-60%
1313-13-9	manganese dioxide	☠ STOT RE 2, H373 ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	10-20%

· Additional information:

For the wording of the listed Hazard Statements refer to section 16.

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

· Description of first aid measures

· General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· After skin contact:

Wash with soap and water.

If skin irritation is experienced, consult a doctor.

· After eye contact:

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

· Most important symptoms and effects, both acute and delayed:

Coughing

Breathing difficulty

Gastric or intestinal disorders when ingested.

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- **Danger:**
Danger of impaired breathing.
May cause damage to the central nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.
May cause cancer.
- **Indication of any immediate medical attention and special treatment needed:**
No relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
The product is not flammable.
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture** No relevant information available.
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective clothing.
Ensure adequate ventilation.
- **Environmental precautions** No special measures required.
- **Methods and material for containment and cleaning up**
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
Any deposit of dust which cannot be avoided must be regularly removed.
Take note of emission threshold.
Use only in well ventilated areas.
- **Information about protection against explosions and fires:**
Dust can combine with air to form an explosive mixture.

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- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Protect from humidity and water.
- **Information about storage in one common storage facility:**
 - Store away from water.
 - Store away from foodstuffs.
 - Store away from flammable substances.
- **Further information about storage conditions:**
 - Store in dry conditions.
 - Do not freeze.
 - Store inside. Keep out of sunlight. Sunlight exposure damages bags.
- **Specific end use(s)** No relevant information available.

8 Exposure controls/personal protection

· Control parameters

· Components with limit values that require monitoring at the workplace:

14808-60-7 Quartz (SiO₂)

PEL (USA)	see Quartz listing
REL (USA)	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.025* mg/m ³ *as respirable fraction
EL (Canada)	Long-term value: 0.025 mg/m ³ ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.10* mg/m ³ *respirable fraction
LMPE (Mexico)	Long-term value: 0.025* mg/m ³ A2, *fracción respirable

1313-13-9 manganese dioxide

PEL (USA)	Ceiling limit value: 5 mg/m ³ as Mn
REL (USA)	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³ as Mn
TLV (USA)	Long-term value: 0.02* 0.1** mg/m ³ as Mn; *respirable **inhalable fraction
EL (Canada)	Long-term value: 0.2 mg/m ³ as Mn; R
LMPE (Mexico)	Long-term value: 0.2 mg/m ³ como Mn

- **Exposure controls**
- **Engineering measures** Provide adequate ventilation.

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- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
- **Engineering controls:** No relevant information available.
- **Breathing equipment:**
Use respiratory protection when grinding or cutting material.
For spills, respiratory protection may be advisable.
Use suitable respiratory protective device when high concentrations are present.
P95 mask
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Material of gloves**
Neoprene gloves
Nitrile rubber, NBR
- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment**
No relevant information available.
- **Risk management measures** See Section 7 for additional information.

9 Physical and chemical properties

· Information on basic physical and chemical properties

- | | |
|---|-----------------------|
| · Appearance: | |
| Form: | Powder |
| Color: | Dark brown |
| · Odor: | Characteristic |
| · Odor threshold: | Not determined. |
| · pH-value: | Not applicable. |
| · Melting point/Melting range: | Not determined. |
| · Boiling point/Boiling range: | > 999°C (>1,830.2 °F) |
| · Flash point: | Not applicable. |
| · Flammability (solid, gaseous): | Not determined. |
| · Auto-ignition temperature: | Not determined. |

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· Decomposition temperature:	Not determined.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits Lower:	Not determined.
Upper:	Not determined.
· Oxidizing properties:	Contains oxidizing agent.
· Vapor pressure:	Not applicable.
· Density at 20°C (68 °F):	2.25g/cm ³ (18.78 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not applicable.
· Evaporation rate:	Not applicable.
· Solubility in / Miscibility with Water:	Insoluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Other information	No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**
As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
- **Conditions to avoid** Prevent formation of dust.
- **Incompatible materials** No relevant information available.
- **Hazardous decomposition products**
Toxic metal oxide smoke
?

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** No irritant effect.

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- **On the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** No sensitizing effects known.

· **IARC (International Agency for Research on Cancer):**

14808-60-7	Quartz (SiO ₂)	1
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· **NTP (National Toxicology Program):**

14808-60-7	Quartz (SiO ₂)	K
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· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

· **Probable route(s) of exposure:**

Ingestion.
Inhalation.
Eye contact.
Skin contact.

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** May cause cancer.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:**
May cause damage to the central nervous system through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability**
Inorganic product, is not eliminable from water by means of biological cleaning processes.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:** Not known to be hazardous to water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

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- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**
- **DOT, ADR, IMDG, IATA** Not regulated.
- **UN proper shipping name**
- **DOT, ADR, IMDG, IATA** Not regulated.
- **Transport hazard class(es)**
- **DOT, ADR, IMDG, IATA**
- **Class** Not regulated.
- **Packing group**
- **DOT, ADR, IMDG, IATA** Not regulated.
- **Environmental hazards**
- **Marine pollutant:** No
- **Special precautions for user** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

1313-13-9 | manganese dioxide

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

14808-60-7 | Quartz (SiO₂)

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· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency):**

1313-13-9 manganese dioxide

D

· **IARC (International Agency for Research on Cancer):**

14808-60-7 Quartz (SiO₂)

1

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

14808-60-7 Quartz (SiO₂)

· **Canadian Domestic Substances List (DSL):**

All ingredients are listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** October 16, 2017 / -

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxique

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Carc. 1A: Carcinogenicity – Category 1A

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· **Sources**

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Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

ChemTel Inc.

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: www.chemtelinc.com



An Oldcastle® company

SAFETY DATA SHEET (S D S)

Pennsy Supply, Inc. Limestone Products

1. PRODUCT & COMPANY IDENTIFICATION

- a. Product Identifier: Limestone Products
- b. Other Means of Identification: Aggregate, Aglime, Barn Lime, Fluxing Agent, Mineral Filler, Manufactured Sand, Screenings, Crushed Stone, Crushed Limestone, Pulverized Limestone, Granular Limestone, Guideline, Athletic Field Marker
- c. Recommended Use of the Chemical and Restrictions on Use: Various environmental applications (including soil stabilization, pH adjustment, ash treatment, waste water treatment, and desulfurization), agricultural, concrete additive, portland cement additive, asphalt paving additive.
- d. Name, Address, and Telephone Number of Manufacturer: Pennsy Supply, Inc., 1001 Paxton Street, Harrisburg, PA 17104, Phone 717-233-4511
- e. Emergency Telephone Number: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION:

- a. Hazard Classification:
 - i. Eye Damage Category – 2B
 - ii. Skin Irritation Category - 3
 - iii. Specific Target Organ Toxicity Single Exposure Category - 3 (Respiratory System)
 - iv. Carcinogen Category - 1 (due to presence of $\geq 0.1\%$ crystalline silica)
- b. Label Elements:
 - i. Signal Word: Danger
 - ii. Hazard Statements: May Cause Skin Irritation, May Cause Eye Damage, May Cause Cancer (due to presence of $\geq 0.1\%$ crystalline silica), May Cause Respiratory Irritation
 - iii. Symbols:



iv. Precautionary Statements: Wear protective gloves and eye protection. Wash exposed skin after handling. Avoid breathing dust. Use only outdoors or in a well-ventilated area. Obtain instructions before use. Do not handle until all safety precautions have been read and understood.

If on skin: Wash exposed skin with soap and water. If skin irritation occurs, get medical attention.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and if it's easy to do so. Continue rinsing. Seek medical attention immediately.

If inhaled: Remove person to fresh air and keep comfortable. Seek medical attention if the person feels unwell.

If exposed or concerned - obtain medical advice.

Dispose of contents or containers in accordance with applicable regulations.

c. Hazards Not Otherwise Classified:

- i. Ingredients With Unknown Toxicity: NOT APPLICABLE

3. COMPOSITION/INFORMATION ON INGREDIENTS

a. Chemical name: CaCO_3 or $\text{CaCO}_3\text{-MgCO}_3$

b. Common Name and Synonyms: high calcium limestone or dolomitic limestone

c. CAS Numbers:

COMPONENT	CAS#	% BY WT.
Limestone/Dolomite CaCO_3 : 55%-87% MgCO_3 : 12%-44%	1317-65-3	≤ 97
Crystalline Silica	14808-60-7	>0.1

4. FIRST AID MEASURES

a. Description of First Aid Measures:

- Eyes - Immediately flush eyes with generous amounts of water for at least fifteen minutes. Pull back the eyelid while washing to ensure all limestone dust has been removed. Seek medical attention immediately. Do NOT rub eyes.
- Skin - Wash exposed area with pH neutral soap or a mild detergent and cool water. Seek medical attention if irritation persists or later develops.
- Ingestion - Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.
- Inhalation - Move victim to fresh air. Seek medical attention if necessary. If breathing has stopped administer CPR.

b. Most Important Symptoms and Effects, both Acute and Delayed:

- Irritation of skin, eyes, gastrointestinal tract, or respiratory tract. Long term exposure by inhalation may cause permanent damage. This product contains crystalline silica, which has been classified by IARC as a Group 1 carcinogenic to humans when inhaled. Inhalation of silica may also cause a chronic lung disorder - silicosis.

c. Indication of Any Immediate Medical Attention and Special Treatment Needed:

- See first aid information above. Note to physicians: Provide general supportive measures and treat symptomatically.

5. FIRE FIGHTING MEASURES

a. Extinguishing Media:

- Use dry chemical fire extinguisher.

- b. Fire Hazards:
 - i. None
- c. Special Protective Equipment and Fire Fighting Instructions:
 - i. Keep personnel away and upwind of fire. Wear full fire-fighting turn-out gear (full bunker gear), and respiratory protection (SCBA).

6. ACCIDENTAL RELEASE MEASURES

- a. Personal Precautions, Protective Equipment, and Emergency Procedures:
 - i. Spill/Leak Procedures: Use proper protective equipment including gloves, eye protection (goggles), and cover exposed skin area.
 - ii. Small Spills: Use water or dry methods to collect spilled materials. Evacuate area downwind of cleanup operations to minimize dust exposure
 - iii. Large Spills: Use wet or dry methods to collect spilled materials. Evacuate area that is located downwind of cleanup operations to minimize dust exposure. Store spilled materials in dry, sealed plastic or metal containers.
- b. Methods and Materials for Containment and Cleanup:
 - i. Containment: For large spills, as much as possible, avoid generation of dust. Prevent release to sewers and waterways.
 - ii. Cleanup: Residual amounts of material can be flushed with water. Equipment can be washed with either a mild vinegar and water solution, or detergent and water.

7. HANDLING AND STORAGE

- a. Precautions for Safe Handling:
 - i. Keep in tightly closed containers. Protect containers from physical damage.
- b. Conditions for Safe Storage, Including Incompatibilities:
 - i. Store in a cool, dry, and well-ventilated location. Do not store near incompatible materials (See Section 10 below).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- a. Exposure Limits:

Component	CAS#	Exposure Limits
Limestone	1317-65-3	OSHA PEL: 15 mg/m ³ (total Dust) 5 mg/m ³ (respirable) ACGIH TLV: 5 mg/m ³ (respirable) 15 mg/m ³ (total)
Crystalline Silica	14808-60-7	OSHA PEL: 10 mg/m ³ divided by (the percentage of silica in the dust plus 2) (respirable) ACGIH TLV: 0.025 mg/m ³

- b. Engineering Controls:
 - i. Provide ventilation adequate to maintain PELs
- c. Individual Protection Measures
 - i. Respiratory Protection: Use NIOSH/MSHA approved respirators if airborne concentration exceeds PEL.
 - ii. Skin Protection: Use appropriate gloves and appropriate clothing.
 - iii. Eye Protection: Use safety glasses with side shields or safety goggles. Use caution when wearing contact lenses.
 - iv. Other: Eye wash fountain and emergency showers are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

- a. Appearance: White or Gray-white material
- b. Odor: Binder may have a slight scent (lignin)
- c. Odor Threshold: N/A
- d. pH @ 25°C: 7-9
- e. Melting Point: Decomposes at 340° C, 650° F
- f. Flash Point: N/A
- g. Evaporation Rate: N/A
- h. Flammability: N/A
- i. Vapor Pressure: N/A
- j. Specific Gravity: 2.8-3.0
- k. Bulk Density: 65-80 lb/ft³ (approx.)
- l. Solubility in Water: ~0.1g/100g.
- m. Auto-Ignition Temperature: N/A

10. STABILITY AND REACTIVITY

- a. Reactivity: Contact with incompatible materials such as acids should be avoided.
- b. Chemical Stability: Limestone is chemically stable
- c. Possibility of Hazardous Reactions: Avoid contact with acids.
- d. Conditions to Avoid: Do not allow limestone to come into contact with substances mentioned in 10(e) without taking appropriate precautions.
- e. Incompatibility: Limestone should not be mixed or stored with the following materials due to the potential for violent reactions:
 - i. Acids
 - ii. Reactive fluorinated compounds
 - iii. Reactive brominated compounds
 - iv. Organic acid anhydrides
 - v. Nitro - organic compounds
 - vi. Reactive phosphorous compounds
 - vii. Interhalogenated compounds
- f. Hazardous Decomposition Products: N/A

11. TOXICOLOGICAL INFORMATION

- a. Information on the Likely Routes of Exposure: See First Aid discussion above.
- b. Symptoms Related to Physical, Chemical and Toxicological Characteristics: See First Aid discussion above.
- c. Delayed and Immediate Effects and Also Chronic Effects From Exposure: See First Aid discussion above.
- d. Numerical Measures of Toxicity: NA
- e. Carcinogen Listing: Limestone is not listed by MSHA, OSHA, or IARC as a carcinogen; however, this product contains crystalline silica, which has been classified by IARC as a (Group 1) carcinogen to humans when inhaled.

12. ECOLOGICAL INFORMATION

- a. Ecotoxicity: This product is not reported to have any ecotoxicity effects.
- b. Persistence and Degradability: NA
- c. Bio-accumulative Potential: This material exhibits no bio-accumulation effect or food chain concentration toxicity.
- d. Mobility in Soils: Soil mobility can vary widely based on soil properties and weather conditions

- e. Other Adverse Effects (Such as Being Hazardous to the Ozone Layer): The material is alkaline and, if released into water or moist soil, it will cause an increase in pH.

13. DISPOSAL CONSIDERATIONS

- a. Dispose of in accordance with all applicable federal, state, and local environmental regulations. If this product, as supplied and unmixed, becomes a waste, it will not meet the criteria for a hazardous waste as defined under RCRA.

14. TRANSPORTATION INFORMATION

- a. This material is not classified as a *hazardous material* under U.S. DOT or Canadian TDG regulations.

15. REGULATORY INFORMATION

- a. EPA Regulations:
 - i. RCRA Hazardous Waste Number: Not listed in 40 CFR 261.33 as a hazardous waste by listing or characteristic.
 - ii. RCRA Hazardous Waste Classification: Not listed in 40 CFR 261 as a hazardous waste by listing or characteristic.
 - iii. CERCLA Hazardous Substance (40 CFR 302.4): Unlisted specific per RCRA, sec. 3001; CWA, Section 311 (b)(4); CWA, Section 307(a), CAA, Section 112
 - iv. CERCLA Reportable Quantity (RQ): Not Listed
 - v. SARA 311/312 Codes: Considered by SARA (1986) to be a hazardous chemical and a delayed health hazard.
 - vi. SARA Toxic Chemical (40 CFR 372.65): Not subject to reporting requirements of Section 313-Title III.
 - vii. SARA EHS (Extremely Hazardous Substance) (40 CFR 355); Not Listed
 - viii. Threshold Planning Quantity (TPQ): Not Listed
 - ix. USEPA TSCA Inventory List: Crystalline silica is exempt from reporting under the inventory update rule.
- b. OSHA/MSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1a) not listed, MSHA: Not Listed; OSHA Specifically Regulated Substance (29 CFR 1910) not listed
- c. State Regulations: Consult state and local authorities for guidance.
- d. HMIS: Health Risks 1, Flammability 0, Reactivity 0, Personal Protection X
- e. NFPA: Health Hazard 1, Fire Hazard 0, Reactivity 1, Special 0
- f. WHMIS Classification: "E" Corrosive Materials (listed due to corrosive effect on aluminum)
- g. WHMIS Classification: "D2A" Materials causing other toxic effects

16. OTHER INFORMATION

- a. Version: Original/Version 1
- b. Date: 06/01/2015
By: Pennsy Supply, Inc.
For: Pennsy Supply, Inc. 717-233-4511
- c. N.B. *This product should only be used by knowledgeable persons. While the information provided in this Safety Data Sheet is believed to provide a useful summary of the hazards, this product, as it is commonly used, cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. SELLER MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Pennsy Supply, Inc. except that the product shall conform to contracted specifications. The information provided herein is believed by Oldcastle® to be accurate at the time of preparation. This SDS is prepared from sources believed to be reliable; however, it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of this*

product, and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product with respect to which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

FloMag[®] PWT (Potable Water Treatment) Magnesium Oxide

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 04/18/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Trade name : FloMag[®] PWT 12 x 40
FloMag[®] PWT 6 x 16
FloMag[®] PWT Prilled 30
Chemical name : Magnesium oxide
CAS No : 1309-48-4
Formula : MgO
Other means of identification : calcined brucite magnesite, calcined magnesite, calcined magnesite, magnesite burnt deadburned refractory, periclase, sea-water magnesite, oxomagnesite

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : For use in potable water treatment (NSF Standard 60 for Drinking Water Chemicals).

1.3. Details of the supplier of the safety data sheet

Martin Marietta Magnesia Specialties
1800 Eastlake Road
Manistee, Michigan 49660, USA
Tel: +001 410 780 5500

1.4. Emergency telephone number

Emergency number : CHEMTREC, U.S.: 1-800-424-9300 INTERNATIONAL: +1-703-527-3887 Available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

None

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : FloMag[®] PWT (Potable Water Treatment) Magnesium Oxide
CAS No : 1309-48-4

Name	Product identifier	%	Classification (GHS-US)
Magnesium oxide	(CAS No) 1309-48-4	98	Not classified
Oxides of silicon, iron, aluminum, and calcium	(CAS No) mixture	2	Not classified

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation : If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.

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First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries	: Not expected to present a significant hazard under anticipated conditions of normal use. Do not breathe dust.
Symptoms/injuries after inhalation	: Inhalation may cause: irritation, cough, short breathing.
Symptoms/injuries after skin contact	: Effects of skin contact may include: skin irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: Ingestion generally causes purging of the bowels. Swallowing large amounts may cause bowel obstruction.

4.3. Indication of any immediate medical attention and special treatment needed

No additional medical information found. If you feel unwell, seek medical advice.

SECTION 5: Firefighting measures

5.1. Extinguishing media

suitable extinguishing media	: Not combustible. If there is a fire close by, use suitable extinguishing agents. Water fog. Carbon dioxide. Dry powder. Foam.
Unsuitable extinguishing media	: None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: If heated to decomposition, magnesium oxide fumes may be generated.
Explosion hazard	: Product is not explosive.
Reactivity	: Reacts with: Incompatible materials.

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
Other information	: No additional risk management measures required.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Avoid creating or spreading dust. Dust deposited may be vacuum cleaned.
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6.1.1. For non-emergency personnel

Protective equipment	: Where excessive dust may result, use approved respiratory protection equipment.
Emergency procedures	: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment	: Where excessive dust may result, use approved respiratory protection equipment.
Emergency procedures	: Ventilate area. If a major spill occurs, all personnel should be immediately evacuated and the area ventilated.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Do not allow minor leaks or spills to accumulate on walking surfaces. Contain and collect as any solid.
Methods for cleaning up	: On land, sweep or shovel into suitable containers. Minimize generation of dust.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.;Provide good ventilation in process area to prevent formation of dust.
-------------------------------	--

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Hygiene measures : Smoking, eating and drinking should be prohibited in areas of storage and use. Always wash your hands immediately after handling this product, and once again before leaving the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from Incompatible materials. Keep container closed when not in use.

Incompatible materials : ACID (Strong) - vigorous reaction, heat generated; Chlorine Trifluoride reacts violently, producing flame; Phosphorous Pentachloride - incandesces brilliantly. NOTE: Exposure to water may cause this product to slowly hydrate, during which heat may be generated (exothermic reaction).

7.3. Specific end use(s)

Reference Section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

For components listed in Section 3.1, all available OELs are displayed

Magnesium oxide (1309-48-4)		
USA ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
USA ACGIH	Remark (ACGIH)	(inhalable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m3)	15 mg/m³

8.2. Exposure controls

Appropriate engineering controls : Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Provide local exhaust ventilation of closed transfer systems to minimize exposures.

Hand protection : Wear protective gloves: dust impervious gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.; Use air-purifying respirator equipped with particulate filtering cartridges.

UP TO 100 MG/M3: Any dust, mist or fume respirator; any air supplied respirator; or, self-contained breathing apparatus.

UP TO 250 MG/M3: Any supplied air respirator operated in a continuous flow mode or any powered air purifying respirator with a dust/mist/fume filter.

UP TO 500 MG/M3: High efficiency particulate filter with full face piece; any powered air supplied respirator with a tight fitting face piece and a high efficiency particulate filter; any self-contained breathing apparatus with a full face piece; any supplied air respirator with a full face piece.

UP TO 7500 MG/M3: Any air supplied respirator with full face piece and operated in a pressure demand or other positive pressure mode.

EMERGENCY or ENTRY INTO UNKNOWN CONCENTRATIONS: Self-contained breathing apparatus with full face piece and operated in pressure demand mode or air supplied respirator with full face piece operated in a pressure demand or other positive pressure mode in combination with auxiliary self-contained breathing apparatus operated in pressure demand or positive pressure mode.

ESCAPE: Any air purifying full face piece respirator with high efficiency particulate filter or any appropriate escape type self-contained apparatus.

Other information : When using, do not eat, drink or smoke.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Appearance : Powder.

Molecular mass : 40.3 g/mol

Color : white.

Odor : Odorless.

Odor threshold : No data available

pH : No data available

pH solution : 10.3 saturated aqueous solution

Relative evaporation rate (butyl acetate=1) : No data available

Melting point : 2827 (2797 - 2857) °C

Freezing point : No data available

Boiling point : 3600 °C

Flash point : Product does not sustain combustion

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Self ignition temperature	: No data available
Decomposition temperature	: > 1700 °C
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Vapor pressure at 50 °C	: 0 hPa
Relative vapor density at 20 °C	: 0
Relative density	: No data available
Density	: 3.58 g/cm ³
Solubility	: In water, material is partially soluble.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Product is not explosive.
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with: Incompatible materials.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Avoid contact with incompatible materials, excessive heat or cold; moisture.

10.5. Incompatible materials

ACID (Strong) - vigorous reaction, heat generated; Chlorine Trifluoride reacts violently, producing flame; Phosphorous Pentachloride - incandesces brilliantly. NOTE: Exposure to water may cause this product to slowly hydrate, during which heat may be generated (exothermic reaction).

10.6. Hazardous decomposition products

If magnesium oxide is heated to the point of volatilization (i.e., >1700 °C), magnesium oxide fumes may be generated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified. (Based on available data, the classification criteria are not met)

Magnesium oxide (1309-48-4)	
LD50 oral rat	3990 mg/kg
ATE (oral)	3990.000 mg/kg body weight

Skin corrosion/irritation	: Not classified. (Based on available data, the classification criteria are not met)
Serious eye damage/irritation	: Not classified. (Based on available data, the classification criteria are not met)
Respiratory or skin sensitization	: Not classified. (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified. (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified. (Based on available data, the classification criteria are not met)

Magnesium oxide (1309-48-4)	
IARC group	Not listed in carcinogenicity class
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class

Reproductive toxicity	: Not classified. (Based on available data, the classification criteria are not met)
Specific target organ toxicity (single exposure)	: Not classified. (Based on available data, the classification criteria are not met)
Specific target organ toxicity (repeated exposure)	: Not classified. (Based on available data, the classification criteria are not met)

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Aspiration hazard	: Not classified. (Based on available data, the classification criteria are not met)
Potential Adverse human health effects and symptoms	:
Symptoms/injuries after inhalation	: Inhalation may cause: irritation, cough, shortness of breath.
Symptoms/injuries after skin contact	: Effects of skin contact may include: skin irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: Ingestion generally causes purging of the bowels. Swallowing large amounts may cause bowel obstruction.
Likely routes of exposure	: dermal;Inhalation.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Magnesium oxide (1309-48-4)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Magnesium oxide (1309-48-4)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems. Dispose in a safe manner in accordance with local/national regulations.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Not considered a dangerous good for transport regulations

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Magnesium oxide (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

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Magnesium oxide (1309-48-4)

SARA Section 313 - Emission Reporting

This notification must not be detached from this SDS and any copying of the SDS must include this notice, as required by 40CFR part 372: Magnesium oxide is not subject to Form R reporting requirements.

15.2. International regulations

Magnesium oxide (1309-48-4)

Jurisdiction	List	Comment
Asia Pacific	Asia - PAC	
Australia	Australian Inventory of Chemical Substances (AICS)	
	National Pollutant Inventory	magnesium oxide fume
	Priority Existing Chemicals	
China	Inventory of Existing Chemical Substances (IECSC)	
Japan	Existing and New Chemical Substances (ENCS)	# 1-465; inorganic compounds
Korea	KECI (Chemical Inventory of Korea)	KE-22728
New Zealand	Inventory of Chemicals (NZIoC)	HSNO approval
Phillippines	Inventory of Chemicals and Chemical Substances (PICCS)	
Europe	EEC International Cosmetics Ingredients Inventory (INCI)	absorbant/ buffering/ opacifying / additives
	EU REACH pre-registered	
	EU Inventory of Existing Commercial Chemical Substances (EINECS)	215-171-9
	German Water Hazard Class Substance List	5208 Classification: VwVwS
	Switzerland Giftliste 1 (List of Toxic Substances)	G-2368
Canada	Canadian Domesticated Substances List (DSL)	
	WHMIS Ingredient List	
United States	ACGIH Threshold Limit Values (TLV)	
	EPA Pesticide Inert Ingredients	
	FDA Priority-based Assessment of Food Additives (PAFA)	
	FDA Regulations	Use as colorant.
	High Production Volume Chemicals (HPV)	
	National Toxicology Program Technical Reports List	
	NIOSH Hazard, Toxicology, and Use Information	
	NIOSH Health Hazards	
	NIOSH Recommended Exposure Limits	10 mg/m ³
	OSHA Permissible Exposure Limits	8 hour TWA: total particulates 15 mg/ m ³
	Toxic Substances Control Act (TSCA) Inventory	
	Toxic Inventory Update Rule	
Other	TSCA Section 8A-Preliminary Assessment Information Rule (PAIR)	
	Health Hazards	RTECS: OM3850000
	High Production Volume Chemicals: ICCA	
	High Production Volume Chemicals: OECD	

15.3. US State regulations

Magnesium Oxide (1309-48-4)

State or local regulations

U.S. – Illinois Right-to-Know Toxic Substances List
U.S. – Massachusetts Right-to-Know
U.S. – Minnesota Right-to-Know
U.S. - New Jersey Right-to-Know
U.S. – Pennsylvania Right-to-Know
U.S. – Rhode Island Right-to-Know

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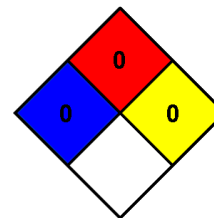
SECTION 16: Other information

Indication of changes : Original Document.
Data sources : ACGIH 2000.
Chemical Inspection & Regulation Service; accessed at: http://www.cirs-reach.com/Inventory/Global_Chemical_Inventories.html.
Ind. Exposure & Control Techn. for OSHA Regulated Substances - MgO (fume), March, 1989, pp. 1181-1184.
Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.
NIOSH Occupational Health Guide for chemical Substances - Vol. II, September, 1978.
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
RTECS, June 1998.
Sax - 8th Ed. TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.
US National Library of Medicine National Institutes of Health Haz-Map. Accessed at <http://hazmap.nlm.nih.gov>

Abbreviations and acronyms : ACGIH (American Conference of Government Industrial Hygienists).
ATE: Acute Toxicity Estimate.
CAS (Chemical Abstracts Service) number.
EC50: Environmental Concentration associated with a response by 50% of the test population.
GHS: Globally Harmonized System (of Classification and Labeling) of Chemicals.
LD50: Lethal Dose for 50% of the test population.
OSHA: Occupational Safety & Health Administration.
TSCA: Toxic Substances Control Act.
TWA: Time Weighted Average.

Other information : None.

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard : 0 - Materials that will not burn.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

SDS Prepared by: The Redstone Group, LLC
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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 regulations



Printing date: October 16, 2017

Revision: October 16, 2017

1 Identification

- **Product identifier**
- **Trade name:** Filter-Ag
- **Article number:** No other identifiers
- **Recommended use and restriction on use**
- **Recommended use:** Mixture of naturally occurring raw materials, sintered at high temperatures
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Clack Corporation
4462 Duraform Lane
Windsor, WI 53598 USA
Tel: 608-846-3010
- **Emergency telephone number:**
ChemTel Inc.
(800)255-3924 (North America)
+1 (813)248-0585 (International)

2 Hazard(s) identification

- **Classification of the substance or mixture**
Carc. 1A H350 May cause cancer. Route of exposure: Inhalation.
- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**

GHS08
- **Signal word:** Danger
- **Hazard statements:**
H350 May cause cancer. Route of exposure: Inhalation.
- **Precautionary statements:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **NFPA ratings (scale 0 - 4)**

Health = 0
Fire = 0
Reactivity = 0

(Cont'd. on page 2)

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· HMIS-ratings (scale 0 - 4)

HEALTH	0	Health = *0
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

* - Indicates a long term health hazard from repeated or prolonged exposures.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Components:

1332-09-8	Pumice		>90%
14808-60-7	Quartz (SiO ₂)	⚠ Carc. 1A, H350	<5.0%
14464-46-1	cristobalite	⚠ Carc. 1A, H350; STOT RE 2, H373	<0.1%

· Additional information:

For the wording of the listed Hazard Statements refer to section 16.

For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.

4 First-aid measures

· Description of first aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· After skin contact:

Clean with water and soap.

If skin irritation continues, consult a doctor.

· After eye contact:

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

· Most important symptoms and effects, both acute and delayed:

Breathing difficulty

Coughing

Gastric or intestinal disorders

· Danger:

May cause cancer. Route of exposure: Inhalation.

May cause damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.

· Indication of any immediate medical attention and special treatment needed:

If necessary oxygen respiration treatment.

In cases of irritation to the lungs, initial treatment with Dexamethason metered aerosol.

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5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture** No relevant information available.
- **Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained respiratory protective device.
 - Wear fully protective suit.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - Use respiratory protective device against the effects of fumes/dust/aerosol.
 - Ensure adequate ventilation.
 - Avoid formation of dust.
- **Environmental precautions** No special measures required.
- **Methods and material for containment and cleaning up**
 - Ensure adequate ventilation.
 - Pick up mechanically.
- **Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
 - Prevent formation of dust.
 - Thorough dedusting.
 - Any deposit of dust which cannot be avoided must be regularly removed.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
 - Store in cool, dry conditions in well sealed receptacles.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:**
 - Store inside. Keep out of sunlight. Sunlight exposure damages bags.
- **Specific end use(s)** No relevant information available.

(Cont'd. on page 4)

Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 regulations

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Trade name: Filter-Ag

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8 Exposure controls/personal protection

· Control parameters

· Components with limit values that require monitoring at the workplace:

14808-60-7 Quartz (SiO₂)

PEL (USA)	see Quartz listing
REL (USA)	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.025* mg/m ³ *as respirable fraction
EL (Canada)	Long-term value: 0.025 mg/m ³ ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.10* mg/m ³ *respirable fraction
LMPE (Mexico)	Long-term value: 0.025* mg/m ³ A2, *fracción respirable

14464-46-1 cristobalite

PEL (USA)	½ value from respirable dust formulae for Quartz
REL (USA)	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.025* mg/m ³ *as respirable fraction
EL (Canada)	Long-term value: 0.025 mg/m ³ respirable, ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.05* mg/m ³ *respirable fraction
LMPE (Mexico)	Long-term value: 0.025* mg/m ³ A2, *fracción respirable

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Do not inhale dust / smoke / mist.

· Engineering controls: Provide adequate ventilation.

· Breathing equipment:

Suitable respiratory protective device recommended.

For spills, respiratory protection may be advisable.

Use suitable respiratory protective device when high concentrations are present.

P95 mask

(Cont'd. on page 5)

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· **Protection of hands:**



Protective gloves

Wear gloves for the protection against mechanical hazards according to OSHA and NIOSH rules.

· **Eye protection:**



Safety glasses

· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment**

No relevant information available.

· **Risk management measures** See Section 7 for additional information.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **Appearance:**

Form:	Powder
Color:	Light grey
Odor:	Odorless
Odor threshold:	Not determined.

pH-value:	Not applicable.
Melting point/Melting range:	Not determined.
Boiling point/Boiling range:	>990°C (>1,814 °F)

Flash point:	Not applicable.
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Flammability (solid, gaseous):	Product is not flammable.
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Auto-ignition temperature:	Not determined.
----------------------------	-----------------

Decomposition temperature:	Not determined.
----------------------------	-----------------

Danger of explosion:	Product does not present an explosion hazard.
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· **Explosion limits**

Lower:	Not determined.
Upper:	Not determined.

Oxidizing properties:	Non-oxidizing.
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Vapor pressure:	Not applicable.
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Density at 20°C (68 °F):	<1,13g/cm ³ (<9.43 lbs/gal)
Relative density:	Not determined.
Vapor density:	Not applicable.
Evaporation rate:	Not applicable.

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- **Solubility in / Miscibility with Water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity**
 - Dynamic:** Not applicable.
 - Kinematic:** Not applicable.
- **Other information** No relevant information available.

10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**
Reacts with strong acids and alkali.
As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion.
Reacts with strong oxidizing agents.
- **Conditions to avoid** Prevent formation of dust.
- **Incompatible materials** No relevant information available.
- **Hazardous decomposition products** Possible in traces.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** No sensitizing effects known.

· IARC (International Agency for Research on Cancer):

14808-60-7	Quartz (SiO ₂)	1
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· NTP (National Toxicology Program):

14808-60-7	Quartz (SiO ₂)	K
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· OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

· Probable route(s) of exposure:

Ingestion.
Inhalation.
Eye contact.

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Skin contact.

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** May cause cancer. Route of exposure: Inhalation.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** No relevant information available.
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
Can be reused after reprocessing.
Contact waste processors for recycling information.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|----------------------------------|----------------|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | Not regulated. |
| · UN proper shipping name | |
| · DOT, ADR, IMDG, IATA | Not regulated. |

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- | | |
|--|-----------------|
| · Transport hazard class(es) | |
| · DOT, ADR, IMDG, IATA | |
| · Class | Not regulated. |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | Not regulated. |
| · Environmental hazards | |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

14808-60-7 Quartz (SiO₂)

14464-46-1 cristobalite

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

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· **IARC (International Agency for Research on Cancer):**

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· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

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· **Canadian Domestic Substances List (DSL):**

All ingredients are listed.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** October 16, 2017 / -

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxique

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Carc. 1A: Carcinogenicity – Category 1A

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· **Sources**

Website, European Chemicals Agency (echa.europa.eu)

Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)

Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaassen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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