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 occuring 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)

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

Printing date: October 16, 2017 Revision: October 16, 2017

Trade name: Filter-Ag

· HMIS-ratings (scale 0 - 4)

(Cont'd. of page 1)



- * 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 (SiO2) | ♦ 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.

(Cont'd. on page 3)

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

Printing date: October 16, 2017 Revision: October 16, 2017

Trade name: Filter-Ag

(Cont'd. of page 2)

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)

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

Printing date: October 16, 2017 Revision: October 16, 2017

Trade name: Filter-Ag

(Cont'd. of page 3)

8 Exposure controls/personal protection

· Control parameters

| | Control parameters | | | | |
|-----------------|--|--|--|--|--|
| · Components w | · Components with limit values that require monitoring at the workplace: | | | | |
| 14808-60-7 Qua | 14808-60-7 Quartz (SiO2) | | | | |
| PEL (USA) | see Quartz listing | | | | |
| REL (USA) | Long-term value: 0.05* mg/m³ *respirable dust; See Pocket Guide App. A | | | | |
| TLV (USA) | Long-term value: 0.025* mg/m³ *as respirable fraction | | | | |
| EL (Canada) | Long-term value: 0.025 mg/m³ ACGIH A2; IARC 1 | | | | |
| EV (Canada) | Long-term value: 0.10* mg/m³ *respirable fraction | | | | |
| LMPE (Mexico) | Long-term value: 0.025* mg/m³ A2, *fracción respirable | | | | |
| 14464-46-1 cris | 14464-46-1 cristobalite | | | | |
| PEL (USA) | ½ value from respirable dust formulae for Quartz | | | | |
| REL (USA) | Long-term value: 0.05* mg/m³ *respirable dust; See Pocket Guide App. A | | | | |
| TLV (USA) | Long-term value: 0.025* mg/m³ *as respirable fraction | | | | |
| EL (Canada) | Long-term value: 0.025 mg/m³ respirable, ACGIH A2; IARC 1 | | | | |
| EV (Canada) | Long-term value: 0.05* mg/m³ *respirable fraction | | | | |
| LMPE (Mexico) | Long-term value: 0.025* mg/m³ 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)

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

Printing date: October 16, 2017 Revision: October 16, 2017

Trade name: Filter-Ag

· Protection of hands:

(Cont'd. of page 4)



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.

| Information on basic physical a | 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. | |
| Flammability (solid, gaseous): | Product is not flammable. | |
| Auto-ignition temperature: | Not determined. | |
| Decomposition temperature: | Not determined. | |
| Danger of explosion: | Product does not present an explosion hazard. | |
| Explosion limits | | |
| Lower: | Not determined. | |
| Upper: | Not determined. | |
| Oxidizing properties: | Non-oxidizing. | |
| Vapor pressure: | Not applicable. | |
| Density at 20°C (68 °F): | <1,13g/cm³ (<9.43 lbs/gal) | |
| Relative density: | Not determined. | |
| Vapor density: | Not applicable. | |
| Evaporation rate: | Not applicable. | |

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

Printing date: October 16, 2017 Revision: October 16, 2017

Trade name: Filter-Ag

(Cont'd. of page 5)

· 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 | y for Research on Cancer): |
|------------------------------|----------------------------|
|------------------------------|----------------------------|

14808-60-7 Quartz (SiO2)

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· NTP (National Toxicology Program):

14808-60-7 Quartz (SiO2)

K

· OSHA-Ca (Occupational Safety & Health Administration):

None of the ingredients are listed.

· Probable route(s) of exposure:

Ingestion.

Inhalation.

Eye contact.

(Cont'd. on page 7)

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

Printing date: October 16, 2017 Revision: October 16, 2017

Trade name: Filter-Ag

(Cont'd. of page 6)

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.

(Cont'd. on page 8)

Page: 8/9

Safety Data Sheet

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

Printing date: October 16, 2017 Revision: October 16, 2017

Trade name: Filter-Ag

| | | (Cont'd. of page 7) |
|---|-----------------------|---------------------|
| · 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 MARPOL73/78 and the IBC Code | II of 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.

(Cont'd. on page 9)

Page: 9/9

Safety Data Sheet

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

Printing date: October 16, 2017 Revision: October 16, 2017

Trade name: Filter-Ag

(Cont'd. of page 8)

1

IARC (International Agency for Research on Cancer):

14808-60-7 Quartz (SiO2)

· 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

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: Persistant, 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., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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