



Safety Data Sheet (SDS)

Original Issue: 12-1-2017

ProSlide® Topdressing

Revised: 1-10-2019

Section 1 – Product and Company Identification

Product Identifier: Haydite (Expanded Shale)

CAS Number: 14808-60-7 Mixture - Composition Varies Naturally – Typically Contains Quartz (Crystalline Silica)

Supplier's Details: DuraEdge Products, Inc.

149 S Broad St.

Grove City, PA 16127

Phone Number (s): (866) 867-4250

Off-Hour Emergency Phone Number: (724) 530-2298

Section 2 - Composition/Information on Ingredients

| Ingredient Name | CAS Number | Percentage by wt. * | OSHA PEL ¹ | ACGIH TLV ² |
|---|------------|---------------------|---|--|
| Silicon Dioxide, crystalline (Quartz) & silicon Compounds | 14808-60-7 | 55-65% | 10 mg/m ³ (as respirable fraction) %SiO ₂ +2 30 mg/m ³ (as total dust) %SiO ₂ +2 | 0.025 mg/m ³ (as respirable fraction) |
| Aluminum Oxide & Aluminum | 1344-28-1 | 15-25% | 15 mg/m ³ (as total dust, PNOR ³) 5.0 mg/m ³ (as respirable fraction) | 1.0 mg/m ³ (as metal & insoluble compounds, respirable fraction) |
| Iron & Iron Oxides | 1309-37-1 | 2-10% | 10 mg/m ³ (iron oxide fume) | 5.0 mg/m ³ (as iron oxide dust and fume) |
| Calcium Oxide & Calcium | 1305-78-8 | 0.2-5% | 5.0 mg/m ³ (as calcium oxide) | 2.0 mg/m ³ (as calcium oxide) |
| Magnesium Oxide & Magnesium | 1309-48-4 | 0.2-5% | 15 mg/m ³ (as fume, total dust) | 10 mg/m ³ (as magnesium oxide, inhalable fraction ⁴) |
| Sodium Oxide & Sodium | 1313-59-3 | 0.2-5% | 15 mg/m ³ (as total dust, PNOR) 5.0 mg/m ³ (as respirable fraction) | 10 mg/m ³ (as inhalable fraction, PNOS ⁵) 3.0 mg/m ³ (as respirable fraction, PNOS) |
| Potassium Oxides & Potassium | 12136-45-7 | 2-10% | None Established (NE) | NE |
| Sulfur Oxides & Sulfur | 7446-11-9 | <1% | 5.0 ppm (as sulfur dioxide) | “STEL” 0.25 ppm (as sulfur dioxide) |

Notes:

* Percentages are expressed as typical ranges or maximum concentrations of ingredients for the purpose of communicating the potential hazards. The composition data presented is based upon laboratory analyses of typical waste product. It is recognized that composition may vary, and that waste products may contain trace constituents (<0.1%) including but not limited to: Barium

1. OSHA Permissible Exposure Limits (PELs) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A (“C”) designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday.
3. PNOR (Particulates Not Otherwise Regulated) - All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the PNOR limit which is the same as the inert or nuisance dust limit of 15 mg/m³ for total dust and 5.0 mg/m³ for the respirable fraction.
4. Inhalable fraction - The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH TLVs and BEIs Appendix D, paragraph A.
5. PNOS (Particulates Not Otherwise Specified). Particulates identified under the PNOS heading are “nuisance dusts” containing no asbestos and <1% crystalline silica.

Section 3 – Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Some elements contained in this waste product have been determined to be toxic and are subject to regulatory controls. Avoid inhalation of metal dusts, potentially hazardous airborne particulates may be generated under extreme handling conditions or processing conditions such as machinery cleaning or waste removal. These operations should be performed in well-ventilated areas, and if appropriate, respiratory protection and other PPE should be utilized.

Potential Health Effects

Primary Entry Routes: Excessive total particulate exposure may cause irritation to the eyes, skin and respiratory tract. Operations, which generate high dust concentrations may result in the following effects if exposures exceed recommended limits as listed in Section 2.

Target Organs: Respiratory system, skin, eyes



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Section 3 – Hazards Identification (continued)

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations of dust/fume may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns from many metals can produce an acute reaction known as “metal fume fever”. Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposures and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted. Excessive exposure to high concentrations of silicon dioxide dust may cause acute pneumoconiosis. Excessive exposure to high concentrations of dust may cause irritation to the eyes, skin, mucous membranes of the upper respiratory tract, and pneumoconiosis. Excessive inhalation of calcium oxide dusts may cause severe irritation and burns of the respiratory tract.
- **Eye:** Excessive exposure to high concentrations of dust may cause irritation to the eyes. Silicon dioxide is irritating to the eyes. Particles of iron or iron compounds, which become imbedded in the eye, may cause rust stains unless removed fairly promptly. Calcium oxide is an eye irritant.
- **Skin:** Skin contact with dusts may cause physical abrasion. Calcium oxide is a skin irritant.
- **Ingestion:** Ingestion of dust may cause nausea or vomiting.

Chronic Effects:

Chronic inhalation of metallic fumes and dusts are associated with the following conditions:

- **SILICON DIOXIDE:** Inhalation of quartz is classified as a human carcinogen. Chronic exposure can cause silicosis, a form of lung scarring that can cause shortness of breath, reduced lung function, and in severe cases, death. Symptoms can appear at any time, even years after exposure has ceased. Eye contact with pure material can cause particulate irritation. Skin contact with silicon dusts may cause physical abrasion.
- **ALUMINUM & ALUMINUM OXIDE:** Aluminum dusts/fines are a low health risk by inhalation and should be treated as a nuisance dust. Aluminum dust is a respiratory and eye irritant.
- **IRON & IRON OXIDE:** Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign pneumoconiosis, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by IARC.
- **CALCIUM & CALCIUM OXIDE:** Depending on the concentration and duration of exposure, repeated or prolonged inhalation may cause inflammation of the respiratory passages, ulcers of the mucous membranes, and possible perforation of the nasal septum. Repeated or prolonged skin contact may cause dermatitis.
- **MAGNESIUM & MAGNESIUM OXIDE:** Excessive exposure to magnesium oxide fume may cause irritation of the eyes and nose. Excessive inhalation exposure may also cause metal fume fever, a temporary flu-like illness with symptoms such as dizziness, chills, fever, headache, and nausea. Excessive exposure to magnesium oxide dust may cause slight or mild irritation to the eyes, skin and respiratory tract.
- **SULFUR & SULFUR OXIDES:** Sulfur compounds, present in the fumes, may irritate the skin, eyes, lungs and gastrointestinal tract. Repeated or prolonged exposure to sulfur dioxide may cause asthma.

Long-term inhalation exposure to high concentrations (over-exposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic effects.

Carcinogenicity: The International Agency for Research on Cancer (IARC) identifies Quartz as Group 1 - carcinogens that are carcinogenic to humans. ACGIH lists Quartz as an A2 – suspected human carcinogen. NTP identifies crystalline silica as a Group 1 or 2 carcinogen, that is known or reasonably anticipated to be carcinogenic to humans, and OSHA identifies crystalline silica as a Group S carcinogen, OSHA Select Carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) or blood disorders may be adversely affected by any fume or airborne particulate matter exposure.

SARA Potential Hazard Categories: Immediate Acute Health Hazard, Delayed Chronic Health Hazard

Section 4 - First Aid Measures

Inhalation: For over-exposure to airborne particulates, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Metal fume fever may be treated by bed rest, and administering a pain and fever reducing medication. Seek medical attention promptly.

Eye Contact: Flush with large amounts of clean water to remove particles. Seek medical attention.

Skin Contact: Remove contaminated clothing. Wash affected areas with soap or mild detergent and water. Seek medical attention.

Ingestion: Not a probable route of industrial exposure. However, if ingested, seek medical attention immediately.



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Section 5 – Fire and Explosion Hazard Information

| | | | |
|-------------------------------------|--------------------------------|---|---------------------|
| Flash Point: | Not Applicable | LEL: | Not Applicable |
| Flash Point Method: | Not Applicable | UEL: | Not Applicable |
| Burning Rate: | Not Applicable | Auto-ignition Temperature: | Not Applicable |
| Flammability Classification: | Non-flammable, non-combustible | Explosivity (Kst¹ Value): | Not Determined (ND) |
| | | Minimum Ignition Energy (MIE²): | ND |

¹Kst (bar ms-1) Characteristics: 0 no explosion, 0 - 200 weak explosion, 201 - 300 strong explosion, > 300 very strong explosion

² Above 500 mJ - Low sensitivity to ignition

Extinguishing Media: Use extinguishers appropriate for surrounding materials. A fire involving finely divided particles should be treated as a Class D fire. Fire should be extinguished by a properly trained and experienced firefighter. Proper care should be taken in applying extinguishing agent and in allowing to burn itself out.

Unusual Fire or Explosion Hazards: Contact with powerful oxidizing agents may cause fire and/or explosions. Fire may produce irritating or poisonous gases. Care should be taken to avoid the generation of airborne dust. Use of water on finely divided product may cause explosive hydrogen gas and heat to be evolved.

Hazardous Combustion Products: Metal oxides/fumes may be released from fires involving finely divided particles.

Fire-Fighting Instructions: Small fires: Use extinguishers appropriate for surrounding materials. Dry chemical CO₂, water spray, or chemical foam may be used. Large fire: Water spray, fog, or regular foam may be used. Do not scatter spilled material with high-pressure water streams. Do not release runoff from fire control methods to sewers or waterways. Dike fire control water for later disposal.

Fire-Fighting Equipment: Wear a self-contained breathing apparatus (SCBA) with a full face-piece operated in pressure-demand or positive-pressure mode and full protective clothing.

Section 6 - Accidental Release Measures

Spill/Leak Procedures: Shut off ignition sources. Contain material. Minimize dust generation. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, state, and local regulations. For small dry spills: With clean shovel, place material into clean, dry container and cover loosely; move containers from spill area. For large spills: Cover powder spill with plastic sheet to minimize spreading.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and federal requirements.

Disposal: Reclaim or recycle material when possible. Follow applicable Federal, state, and local regulations.

Section 7 - Handling and Storage

Handling Precautions: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing dust.

Storage Requirements: Store away from incompatible materials.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes/dusts and heat during handling operations.

Ventilation: Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls: Do not use compressed air to clean-up accumulated material or dust. Minimize generation of airborne emissions.

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134 or 1910.1025) and, if necessary, wear a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Use a NIOSH-approved positive-pressure, air-supplied respirator if exposure levels are unknown, or any other circumstance where an air-purifying respirator would not be adequate. **Warning!** Air-purifying respirators both negative-pressure, and powered-air do not protect workers in oxygen-deficient atmospheres.

Protective Clothing/Equipment:

- **Eyes:** Safety Glasses with side shields. Contact lenses should not be worn where industrial exposures to this material are likely.
- **Skin:** Persons handling this product should wear long sleeves. Change clothing if there is reasonable probability of contamination. Wash skin that has been exposed with soap and water or waterless hand cleaner.
- **Other protective equipment:** Cloth Gloves



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Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance and Odor: Red to Brown
Odor Threshold: Not Determined
Vapor Pressure: Not Determined
Vapor Density (Air=1): Not Determined
Formula Weight: Not Determined
Density: 44.7 lbs/ft³ (0.72 g/cm³)
Specific Gravity (H₂O=1, at 4 °C): 1.6-1.7
pH (as shipped): 6-7.5

Water Solubility: Not Determined
Other Solubilities: Partial solubility in acids
Boiling Point: Not Determined
Viscosity: Not Determined
Refractive Index: Not Determined
Surface Tension: Not Determined
% Volatile: Not Determined
Evaporation Rate: Not Determined
Melting Point: Not Determined

Section 10 - Stability and Reactivity

Stability: Stable under normal storage and handling conditions.

Polymerization: Hazard polymerization will not occur.

Chemical Incompatibilities: Contact with powerful oxidizing agents may cause fire and/or explosions. Silica dissolves in hydrofluoric acid producing a corrosive gas – silicon tetrafluoride. Product contains components which themselves may be incompatible with other materials. Iron oxide dust when exposed to calcium hypochlorite may be explosive.

Conditions to Avoid: Heat, flame and incompatibles. Avoid storage with strong acids, organic materials or calcium hypochlorite. Keep dry.

Hazardous Decomposition Products: Silica containing respirable dust particles may be generated when handling. Metal oxides/fumes, sulfur and carbon oxides may be released at high temperatures.

Section 11 - Toxicological Information

No information is available for the product as a mixture.

Eye Effects:

No Data Available for product. Eye contact will cause irritation and the individual components may cause particulate irritation. Refer to Section 3

Skin Effects:

No Data Available for product. Skin contact with the individual components may cause irritation, dermatitis, and sensitizations. Refer to Section 3

Toxicity Data:*

Acute Inhalation Effects: No Data Available for product. Inhalation of individual components has been shown to cause various respiratory effects. Refer to Section 3

Acute Oral Effects: No Data Available for product. Ingestion of individual components has been shown to cause various effects. Refer to Section 3

Other: No LC₅₀ or LD₅₀ has been established for the mixture as a whole. Silica, crystalline Quartz LD₅₀: No Information Found (NIF). Aluminum LD₅₀: NIF. Iron oxide LD₅₀: 5000mg/kg oral (rat). Calcium oxide LD₅₀: 3,059 mg/kg intraperitoneal (mouse). Magnesium oxide LD₅₀: 810mg/kg oral (mouse). Potassium oxide: NIF. Sulfur LC₅₀: 1,660mg/m³ (mammal). Sulfur Dioxide: NIF

Chronic Effects: No Data Available for product. Individual components have been shown to cause various effects. Refer to Section 3

Carcinogenicity: Crystalline Quartz, Refer to Section 3

Mutagenicity: No Data Available for product

Teratogenicity: No Data Available for product

*See NIOSH RTECS, (VV7328000) for additional toxicity data on silica, crystalline (as quartz), (BD1200000) for aluminum oxide, (NO740000) for iron oxide, (EW3100000) for calcium oxide, (OM3850000) for magnesium oxide, (VY0686000) for sodium, (TS6460000) for potassium, (WS4550000) for sulfur dioxide, (WS4250000) for sulfur.

Section 12 - Ecological Information

Ecotoxicity: No data available for the product as a whole. However, individual components of the product have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

Soil Absorption/Mobility: No data available for the product as a whole. However, individual components of the product have been found to be absorbed by plants from soil.

Persistence & Degradability: This material may persist in the environment for long periods, based upon its corrosion resistant, insoluble, and non-biodegradable properties.



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Section 12 - Ecological Information (continued)

Bioaccumulative Potential: Not Determined

Note: The listing of regulations relating to a Haydite DiGeronimo Aggregates, LLC product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.

Section 13 - Disposal Considerations

Disposal Methods: Waste should be classified by a competent environmental professional and disposed, processed, or recycled in accordance with Federal, State and local regulations. Follow applicable Federal, State and local regulations.

Disposal Regulatory Requirements: Follow applicable Federal, State, and local regulations for disposal of solid waste and airborne particulates accumulated during handling operations of the product.

Container Cleaning and Disposal: Follow applicable Federal, State and local regulations. Observe safe handling pre-cautions.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101)

US Department of Transportation (DOT) under 49 CFR 172 **Does Not** list Haydite. Not a hazardous material per DOT shipping requirements. Not classified or regulated.

All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: Haydite

Shipping Symbols: Not Applicable

Hazard Class: Not Applicable

ID No.: Not Applicable

Packing Group: Not Applicable

Label: Not Applicable

Special Provisions (172.102): None

Packaging Authorizations

a) Exceptions: None

b) Non-bulk Packaging: Not Applicable

c) Bulk Packaging: Not Applicable

Quantity Limitations

a) Passenger, Aircraft, or Railcar: Not Applicable

b) Cargo Aircraft Only: Not Applicable

Vessel Stowage Requirements

a) Vessel Stowage: Not Applicable

b) Other: Not Applicable

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to a Haydite DiGeronimo Aggregates, LLC product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.* This product and/or its constituents are subject to the following regulations:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Tables Z-1, Z-2, Z-3): The product as a whole is not listed. However, individual components of the product are listed. Refer to Section 2

EPA Regulations: Haydite is not listed as a whole. However, individual components of this product are also listed:

| Components | Regulations |
|-----------------|-------------|
| Silicon dioxide | SARA 313 |
| Aluminum | SDWA |
| Aluminum oxide | SARA 313 |
| Iron | SDWA |
| Sodium | CERCLA, CWA |

Regulations Key:

| | |
|--------|---|
| CAA | Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06]) |
| CERCLA | Comprehensive Environmental Response, Compensation and Liability Act (42 USC secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A) |
| CWA | Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06]) |
| RCRA | Resource Conservation Recovery Act Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII) |
| SARA | Superfund Amendments and Reauthorization Title III Section 302 Extremely Hazardous Substances (42 USC secs. 11023, 13106; 40 CFR Sec. 372.65) and Section 313 Toxic Chemicals (42 USC secs. 11023, 13106; 40 CFR sec. 372.65 [as of 6/30/05]) |
| TSCA | Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976]) |
| SDWA | Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974]) |



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Section 15 - Regulatory Information (continued)

State Regulations: The product as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know: Contains regulated material in the following categories:

- Hazardous Substances: Silica (quartz), Iron oxide, Calcium oxide, Magnesium oxide, Sulfur, Potassium, and Aluminum oxide
- Environmental Hazards: Aluminum oxide
- Special Hazardous Substance: Silica (quartz)

California Prop. 65: Quartz is a material known to the State of California to cause cancer or reproductive toxicity.

New Jersey: Hazardous Substances: Silica (quartz), Iron oxide, Calcium oxide, Magnesium oxide, Sulfur, Potassium, and Aluminum oxide

Minnesota: Silica (quartz), Iron oxide, Calcium oxide, Magnesium oxide, and Aluminum oxide

Massachusetts: Silica (quartz), Iron oxide, Calcium oxide, Magnesium oxide, Sulfur, Potassium, and Aluminum oxide

Other Regulations: The product as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations.

WHMIS Classification (Canadian): D2B (product as a whole)

WHMIS - Workplace Hazardous Materials Information System

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Section 16 - Other Information

Prepared By: AM Health and Safety Inc. under contract to Compliance Technologies, Inc, for DiGeronimo Aggregates, LLC

Revision History:

9/09/09 – Original

Hazardous Material Identification System (HMIS) Classification

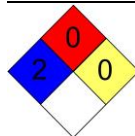
| | |
|---------------|---|
| Health Hazard | 2 |
| Fire Hazard | 0 |
| Reactivity | 0 |

HEALTH = 2 (Temporary or minor injury may occur)

FIRE = 0 (Materials that will not burn)

REACTIVITY = 0 (Normally Stable)

National Fire Protection Association (NFPA)



HEALTH = 2 (Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given)

FIRE = 0 (Materials that will not burn)

REACTIVITY = 0 (Normally Stable, even under fire exposure conditions)

Disclaimer: This information is taken from sources or based upon data believed to be reliable. However, Haydite DiGeronimo Aggregates, LLC makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.