American Borate Company

Safety Data Sheet - Colemanite

SECTION 1. Identification

1.1. Product identifier
Colemanite

CAS 1318-33-8
Trade name Ground Colemanite
Chemical names/Synonyms Calcium borate, di-calcium hexaborate pentahydrate, calcined colemanite, ground colemanite

REACH Registration No: Exempt from registration under REACH Regulation according to Article 2(7) (b). Colemanite is a natural occurring mineral which is not chemically modified, therefore, considered within the scope of Annex V (7) of the REACH Regulation.

1.2. Details of the supplier of the safety data sheet
Supplier name: American Borate Company
Address: 5701 Cleveland Street, Suite 350, Virginia Beach, VA 23462
Phone No: (757) 490-2242 or (800)-486-1072

1.3. Emergency phone numbers:
Monday through Friday 8am – 5pm EST: (757) 490-2242 or (800) 486-1072
After 5pm and weekends: CHEMTREC 1-800-424-9300

1.4. Relevant identified uses of the substance and uses advised against
Textile grade fiberglass
Metallurgical fluxing
Boron alloys
Borosilicate glass

There is no specified use advised against.

SECTION 2. Hazard Identification

2.1. Classification of the substance
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
No classification.

2.2. Label elements
None.

2.3. Other hazards
None.

SECTION 3. Composition/ Information on Ingredients

3.1. Substances
Colemanite is a mono-constituent substance and the main constituent is Colemanite (Di-calcium Hexaborate Pentahydrate)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Chemical Name</th>
<th>CAS No:</th>
<th>Wt. %</th>
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</thead>
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<tr>
<td>Colemanite</td>
<td>Di-calcium Hexaborate Pentahydrate</td>
<td>1318-33-8</td>
<td>78.00-80.00</td>
</tr>
<tr>
<td>Calcite</td>
<td>Calcium Carbonate</td>
<td>1317-65-3</td>
<td>8.00-12.00</td>
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<td>Dolomite</td>
<td>Calcium Magnesium Carbonate</td>
<td>16389-88-1</td>
<td>2.00-3.00</td>
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</tbody>
</table>
SECTION 4. First-aid Measures

4.1. Description of first aid measures
General advice
Move out of dangerous area. Seek medical attention. Show this safety data sheet to the doctor in attendance.

Skin contact
Wash with soap and water. Seek medical attention.

Eye contact
As with any chemical exposure to the eye, flush eyes with water for at least 20 minutes. Seek medical attention.

Inhalation
If symptoms such as nose or throat irritation are observed, remove person to fresh air. If not breathing, give artificial respiration. Seek medical attention.

Ingestion
If large amounts are swallowed (i.e. more than one teaspoon), give two glasses of water or milk to drink and seek medical attention. Never give anything by mouth to an unconscious person.

Notes for the doctor
Treat symptomatically.

SECTION 5. Fire-fighting Measures Identification

5.1. Suitable extinguishing media
Use fire extinguishing media suitable for surrounding fires.

5.2. Specific hazards arising from the chemical
None, colemanite is non-flammable, combustible or explosive. The product is itself a flame retardant.

5.3. Special protective actions for fire-fighters
Firefighters should wear pressure demand, self-contained breathing apparatus and full turn-out gear.

SECTION 6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing dust. In case of exposure to prolonged or high level of airborne dust, wear a personal respirator in compliance with national legislation.

6.2. Environmental precautions
Colemanite is somewhat water-soluble and may, at high concentrations cause damage to trees or vegetation by root absorption (see section 12). Do not flush to drains.

6.3. Methods and materials for containment and cleaning up
Land spill
Vacuum, shovel or sweep up colemanite and place in containers for disposal in accordance with applicable local, state, and federal laws and regulations. Avoid contamination of water bodies during clean up and disposal. Avoid breathing dust.

Spillage into water
Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal environmental background level (see sections 12, 13 and 15).

6.4. Reference to other sections
See sections 8 and 13 for further information.
SECTION 7. Handling and Storage

7.1. Precautions for safe handling
To maintain package integrity and to minimize caking of the product, bags should be handled on a first-in first out basis. Good housekeeping and dust prevention procedures should be followed to minimize dust generation and accumulation. Use with appropriate local exhaust ventilation. The product should be kept away from strong reducing agents. Apply above handling advice when mixing with other substances.

7.2. Conditions for safe storage
Keep containers closed and store indoors in a dry well ventilated location. Provide appropriate ventilation and store bags such as to prevent any accidental damage.

7.3. Specific end use
See section 1.4.

SECTION 8. Exposure Controls/Personal Protection

8.1. Control parameters
Occupational exposure limits:
OSHA-PEL*: 15 mg/m³ total dust
5 mg/m³ respirable dust
Cal OSHA-PEL*: 10 mg/m³

Biological limit values:
Currently, there is no Biological Limit Value (BLV) determined for this substance.
*OSHA PELs are based on an 8-hour time weighted average (TWA) exposure.
For the equivalent limits in other countries, please consult the local regulatory authority.

8.2. Exposure controls
8.2.1. Appropriate engineering controls
Provide general or local exhaust ventilation systems to maintain airborne concentrations of colemanite dust below specific exposure limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

8.2.2. Individual protection measures, such as personal protective equipment
Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eyes and hand protection
Handle with gloves. Wear eye protection suitable for job tasks.

8.2.3. Environmental exposure controls
No special requirements (See section 6).

SECTION 9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties
Appearance: light grey, ground powder
Odor: odorless
Odor threshold: No data available
pH: No data available
Melting point: No data available
Initial boiling point and boiling range: No data available
Flash point: Not flammable
Evaporation rate: No data available
Flammability (solid, gas): Not flammable
Upper/lower flammability or explosive limits: Not applicable
Vapor pressure: Not applicable
Vapor density: Not applicable
Relative density: No data available
Solubility in water: Low solubility
Partition coefficient: n-octanol/water: No data available
Auto-Ignition temperature: Not flammable
Decomposition temperature: Dehydration begins at 105°C.
Viscosity: Not applicable
Explosion properties: Not explosive
Oxidizing properties: Not applicable

9.2. Other information
Bulk Density: 62.43 lbs/ft³ (1 ton/m³ max)

SECTION 10. Stability and Reactivity

10.1. Reactivity
Colemanite is a stable product, but when heated it can dehydrate.

10.2. Chemical stability
Colemanite is stable at room temperature under normal storage and handling conditions.

10.3. Possibility of hazardous reactions
No known hazardous reactions

10.4. Conditions to avoid
Avoid excessive heat, direct sunlight, generating dust, moisture, static discharges and high temperatures (See section 7).

10.5. Incompatible materials
Incompatible with oxidizing agents, acids, reducing agents and sources of ignition. Reaction with strong reducing agents such as metal hydrides will generate hydrogen gas which could create an explosive hazard.

10.6. Hazardous decomposition products
No known hazardous decomposition products.

SECTION 11. Toxicological Information

11.1. Information on toxicological effects
Colemanite does not meet the criteria for classification as hazardous according to 29 CFR 1910. Exempt from REACH registration in accordance with Annex V.7. A hazard assessment has been conducted by "Cambridge Environmental Assessments - ADAS" and the outcome was that colemanite is not a hazardous substance.

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Oral</th>
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<tbody>
<tr>
<td></td>
<td>Dermal</td>
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</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>No data available.</td>
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</tbody>
</table>

Classification for acute toxicity is not warranted.

Skin corrosion /irritation
Classification for irritation/corrosion is not warranted.

No data available.

Serious eye damage /irritation
Classification is not warranted.

No data available.

Respiratory or skin sensitization
No data available.
Colemanite is considered not to be a skin sensitizer based on experience in handling and low absorption through the skin. Classification for sensitization is not warranted.

<table>
<thead>
<tr>
<th>Mutagenicity</th>
<th>in-vitro Mutagenicity</th>
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<tr>
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<td>In-vivo Mutagenicity</td>
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<tr>
<td></td>
<td>Germ cell mutagenicity</td>
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<tr>
<td>Classification for mutagenicity is not warranted</td>
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</tbody>
</table>

| Carcinogenicity   | Classification for carcinogenicity is not warranted. | No data available. |

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<tr>
<th>Reproductive toxicity</th>
<th>Fertility</th>
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<td>Developmental toxicity</td>
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<tr>
<td>Classification for reproductive toxicity is not warranted</td>
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</tr>
</tbody>
</table>

| STOT – single exposure | Classification for specific target organ toxicity is not warranted. | No data available. |

| STOT – repeated exposure | Classification for specific target organ toxicity is not warranted. | No data available. |

Aspiration hazard based on available data, the classification criteria are not met.

SECTION 12. Ecological Information

No data is available for colemanite. Therefore **ecotoxicity data of boron are provided.**

12.1. Toxicity

**Phytotoxicity:** Although boron is an essential micronutrient for healthy growth of plants, it can be harmful to boron-sensitive plants in higher quantities. Care should be taken to minimize the amount of colemanite released to the environment.

**Fish Toxicity:**
Rainbow Trout (S.gairdneri)

24 day LC₅₀ = 150.0 mg/B/L

36 day NOEC-LOEC = 0.75-1 mg/B/L

Goldfish (Carassius auratus)

3 Day LC₅₀ = 178 mg B/L

7 day NOEC = 26.50 mg/B/L

**Invertebrate toxicity:**
The acute toxicity (LC₅₀) to *Daphnia magna* Straus in natural water is reported to be 133 mg B/L (48 h).

Chronic toxicity (21-day NOEC-LOEC) is reported to be 6-13 mg B/L.

12.2. Persistence and degradability
Boron is naturally occurring and ubiquitous in the environment.

12.3. Bioaccumulative potential
Boron is a naturally occurring element. Boron does not accumulate up the food chain. It is not expected to bioconcentrate in fish.

12.4. Mobility in soil
Colemanite is moderately soluble in water and will leach through the soil at very slow rate.

12.5. Results of PBT and vPvB assessment
According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6. Other adverse effects
No specific adverse effects known.
SECTION 13. Disposal Considerations

13.1. Disposal methods

Dispose of in accordance with all local, state, and federal regulations. Contact a licensed waste disposal service to dispose of this material. Surplus product should, if possible, be used for an appropriate application.

SECTION 14. Transport Information

US DOT
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

SECTION 15. Regulatory Information

15.1. Safety health and environmental regulations/legislation specific for the substance: Ground colemanite is a naturally occurring mineral.

15.2. Chemical Safety Assessment:
Exempt from REACH registration in accordance with Annex V.7. A hazard assessment has been conducted by “Cambridge Environmental Assessments - ADAS” and the outcome was that ground colemanite is not a hazardous substance. Therefore, in absence of identified hazard, the substance is safe and presents no risk.

REACH Registration No: Exempt from registration under REACH Regulation according to Article 2(7)(b). Ground colemanite is a natural occurring mineral which is not chemically modified, therefore, considered within the scope of Annex V (7) of the REACH Regulation.

SECTION 16. Other Information

Data are based on our latest knowledge but do not constitute a guarantee for any specific product features and do not establish a legally valid contractual relationship.

Key literature references and sources for data:

1. ECOTOX: http://www.epa.gov/ecotox

16.4. Disclaimer of Liability
The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its accuracy, reliability or completeness. The conditions or methods of handling, storage use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the user’s responsibility to satisfy themselves as to the suitableness and completeness of such information for their own particular use. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable. Please note that the provision of this SDS being not mandatory, only an English version of this latter is available.

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