

GRANULAR COLEMANITE

SAFETY DATA SHEET

Date of Issue : January 2016

Revision No : 01

Date of Revision : January 2018

ETİ MADEN İŞLETMELERİ GENEL MÜDÜRLÜĞÜ

Ayvalı Mah. Halil Sezai Erkut Cad. Afra Sok. No: 1/A 06010 Keçiören/Ankara TÜRKİYE

SECTION 1. Identification of the Substance and of the company

1.1. GHS Product identifier

Substance name: Colemanite

CAS No: 1318-33-8*

(*In order to comply with national regulations, CAS No: 12291-65-5 and CAS No: 12007-56-6 can also be referred)

Trade name: GRANULAR COLEMANITE

1.2. Other means of identification

Chemical names/Synonyms: Calcium borate, dicalcium hexaborate pentahydrate

1.3. Recommended use of the chemical and restrictions on use

Relevant identified uses

- Agriculture

Uses advised against

Not applicable, there are no uses of Granular Colemanite advised against.

1.4. Supplier's details

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SECTION 2. Hazard Identification

2.1. Classification of the substance according to GHS

Granular Colemanite is a naturally occurring mineral and does not meet the criteria for classification as hazardous according to UN GHS.

2.2. GHS label elements, including precautionary statements

N.A.

2.3. Other hazards which do not result in classification

Granular Colemanite is an inorganic substance and does not meet the criteria for PBT or vPvB substance.

SECTION 3. Composition / Information on Ingredients

3.1. Substances

Granular colemanite is a mono constituent substance and the main constituent is Colemanite (Dicalcium Hexaborate Pentahydrate)

Partical size: 2-4 mm Granular Colemanite

Common Name	Chemical Name	CAS No:	Wt. %
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Colemanite	Dicalcium Hexaborate Pentahydrate	1318-33-8	58.00 min.
Calcite	Calcium Carbonate	1317-65-3	20.00 max.
Dolomite	Calcium Magnesium Carbonate	16389-88-1	8.00 max.
Clay	-	-	10.00 max

SECTION 4. First aid measures

4.1. Description of first aid measures

4.1.1. Following skin contact

Mildly irritating to skin. Therefore skin contact is normally not harmful. However prolonged contact may cause skin irritation. If skin contact occurs, remove contaminated clothing and wash skin with plenty of water and soap. If irritation occurs seek medical advice.

4.1.2. Following eye contact

Granular Colemanite is not an eye irritant. However prolonged contact might cause eye irritation. If irritation occurs, check for and remove any contact lenses Flush thoroughly with water to cleanse eye for at least 15 minutes. If irritation persists consult a physician.

4.1.3. Following inhalation

Granular Colemanite is not likely to be hazardous by inhalation. However, prolonged exposure to dust levels in excess of regulatory limits may cause irritation to nose and throat. If symptoms occur remove victim to fresh air.

4.1.4. Following ingestion

Swallowing small quantities of Granular Colemanite (one teaspoon) is not normally harmful. If large amounts are swallowed, rinse mouth out with water, give a glass of water to drink and seek medical attention.

4.2. Most important symptoms/effects, acute and delayed

N.A.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

SECTION 5. Firefighting measures

5.1. Suitable extinguishing media

Any fire extinguishing media may be used on nearby fires.

5.2. Special hazards arising from the chemical.

No data available.

5.3. Special protective actions for fire-fighters

N.A.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No personal protective equipment is normally needed to clean up spilled Granular Colemanite. In case of exposure to high level of dust, wear protective equipment to prevent skin and eye contact and breathing in dust. Increase ventilation. Avoid generating dust.

6.1.2. For emergency responders

No special recommendations are required.

6.2. Environmental precautions

Do not allow the spilled substances to reach sewers or waterways. This substance will cause localized contamination of surrounding waters depending on the quantity dissolved. Granular Colemanite is a moderately water soluble mineral. However at high concentrations some damage to local vegetation, fish and other aquatic life may be expected. If sewers and waterways are contaminated with large quantities of spilled Granular Colemanite, advise your local waste management authority.

6.3. Methods and materials for containment and cleaning up

Sweep up spills and try to keep dust to a minimum. Use water spraying to prevent airborne dust generation. Industrial vacuum cleaner can also be used as an alternative. Collect and seal in properly labeled containers for safe disposal. Wash area down with water. Hold contaminated water for disposal.

SECTION 7. Handling and Storage

7.1. Precautions for safe handling

7.1.1. Protective measures

Avoid handling which leads to dust formation. Avoid skin and eye contact and breathing in dust. Provide appropriate exhaust ventilation at places where airborne dust is generated. Ensure an eye bath and safety shower are available and ready for use.

7.1.2. Advice on general hygiene

Do not to eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions: Though Granular Colemanite does not require any special precautions, it is sensitive to moisture. Protect from moisture and direct sunlight. Store at ambient temperature. Store away from incompatible materials including reducing agents and acids. Minimize airborne dust generation during loading and unloading. The bags should be rotated on a “first-in-first-out” basis.

Packaging materials: Store in original packaging as approved by manufacturer.

Requirements for storage rooms and vessels: Store in a cool, dry, well-ventilated area. Indoor storage is recommended.

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. Appropriate engineering controls

Provide general or local exhaust ventilation systems to maintain airborne dust concentrations of Granular Colemanite 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.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Eye protection: Wear safety glasses with side-shields.

Skin protection: No specific requirement.

Hand protection: Wear impervious gloves, Always wash hands before smoking, eating, drinking or using the toilet.

Respiratory protection: In case of prolonged exposure to airborne dust concentrations, wear respiratory protective equipment that complies with requirements of European and national legislation.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	: light grey, Granular
Odor	: Odorless
Odour threshold	: Not applicable
pH	: Not applicable
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: No data available
Flash point	: Non flammable
Evaporation rate	: No data available
Flammability (solid, gas)	: Non flammable
Upper/lower flammability or explosive limits	: Non flammable
Vapour pressure	: Not applicable
Vapour density	: Not applicable
Relative density	: No data available
Solubility in water	: Low solubility
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: Non flammable
Decomposition temperature	: When heated above 105°C it loses its hydrate water.
Viscosity	: Not applicable

SECTION 10. Stability and reactivity

10.1. Reactivity

Granular Colemanite is a stable product.

10.2. Chemical stability

Granular Colemanite is a stable product at room temperature under normal storage and handling conditions, but when heated it loses water.

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 (See section 7).

10.6. Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11. Toxicological information

The product does not meet the criteria for classification as hazardous according to UN GHS.

Acute toxicity	Oral	No data available.
	Dermal	No data available.
	Inhalation	No data available.
	Classification for acute toxicity is not warranted.	
Skin corrosion / irritation	No data available.	
	Classification for irritation/corrosion is not warranted.	
Serious eye damage / irritation	No data available.	
	Classification is not warranted.	
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.	
Mutagenicity	in-vitro Mutagenicity	No data available.
	In-vivo Mutagenicity	No data available.
	Germ cell mutagenicity	No data available.
	Classification for mutagenicity is not warranted	

Carcinogenicity	No data available. Classification for carcinogenicity is not warranted.	
Reproductive toxicity	Fertility	No data available.
	Developmental toxicity	No data available.
	Classification for reproductive toxicity is not warranted	
STOT – single exposure	No data available. Classification for specific target organ toxicity is not warranted.	
STOT – repeated exposure	No data available. Classification for specific target organ toxicity is not warranted.	
Aspiration hazard	Based on available data, the classification criteria are not met.	

SECTION 12. Ecological information

12.1. Toxicity

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

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 bio concentrate 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. Other adverse effects

No specific adverse effects known.

SECTION 13. Disposal considerations

13.1. Disposal methods

Waste treatment methods: Small quantities of Granular Colemanite can usually be disposed of at Municipal Landfill sites. No special disposal treatment is required, but refer to state and local regulations for applicable site-specific requirements. Tonnage quantities of product are not recommended to be sent to landfills. Such products should, if possible, be re-used for an appropriate application.

Product /Packaging disposal: Dust formation from residues in packaging should be avoided and suitable worker protection assured. The re-use of packaging is not recommended. Recycling and disposal of packaging should be carried out in compliance with local regulations.

SECTION 14. Transport information

14.1. UN number : Not relevant

14.2. UN proper shipping name : Not relevant

14.3. Transport hazard classes : Not relevant

ADR : Not classified

IMDG : Not classified

ICA/IATA : Not classified

RID : Not classified

14.4. Packaging group : Not applicable

14.5. Environmental hazards : Not relevant

14.6. Special precautions for user : No special precautions

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not relevant

SECTION 15. Regulatory information

15.1. Safety health and environmental regulations/legislation specific for the substance:

Clean Air Act (Montreal Protocol)

Colemanite was not manufactured with and does not contain any Class I or Class II ozone depleting substances.

Chemical inventory listing

- U.S. EPA TSCA : 12007-56-6
- Canadian NDSL : 12007-56-6
- EINECS : 602-907-2/234-511-7
- South Korea KECI : KE-04623
- China IESCS : 12007-56-6
- New Zealand NZIoC : 1318-33-8/12007-56-6
- Australia AICS : 1318-33-8/12007-56-6

Ensure all national/local regulations are observed.

SECTION 16. Other information

16.1. Mainly changes made to the previous version of this Safety Data Sheet (SDS):

This SDS has been compiled in accordance with UN-GHS (Rev.6) (2015) for the first time.

Revision No	Revision Date	Revision content
00	January 2016	<ul style="list-style-type: none"> This SDS has been compiled in accordance with UN-GHS (Rev.6) (2015) for the first time.
01	January 2018	<p>This SDS was updated in line with</p> <ul style="list-style-type: none"> “Standardization and Simplification of Bag Printings”. CAS registry system to include CAS number of 1318-33-8.

16.2. Abbreviations and acronyms:

AICS	: Australian Inventory of Chemical Substances
Canadian NDSL	: Canadian Non-Domestic Substances List
EC N°	: EINECS Number: European Inventory of Existing Commercial Substances
Eti Maden	: Eti Maden İşletmeleri Genel Müdürlüğü
IECSC	: Inventory of Existing Chemical Substances Produced or Imported in China
KECI	: South Korea Existing Chemicals List
LC₅₀	: Median lethal concentration
LOEC	: Lowest Observed Effect Concentration
N.A.	: Not Applicable.
NOEC	: No observable effect concentration
NZIoC	: New Zealand Inventory of Chemicals
OSHA	: Occupational Safety and Health Administration
PBT	: Persistent, bioaccumulative and toxic
PEL	: Permissible exposure limit
SDS	: Safety Data Sheet
TWA	: The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life
U.S. EPA TSCA	: United States Environmental Protection Agency Toxic Substances Control Act
vPvB	: Very persistent and very bioaccumulative

16.3. List of relevant hazard statements and precautionary statements used in this SDS

N.A

16.4. References

1. ECOTOX: <http://www.epa.gov/ecotox>
2. TOXNET: <http://www.toxnet.nlm.nih.gov>
3. Stewart KR (1991), Salmonella/microsome plate incorporation assay of boric acid. Testing laboratory: SRI International. Report No.:2389-A200-91. Owner company: U.S. Borax. Report date: 1991-08-12.
4. O’Loughlin KG (1991), Bone marrow erythrocyte micronucleus assay of boric acid in Swiss Webster Mice. Testing laboratory: SRI International. Report No.:2389-C400-91. Owner company: U.S. Borax. Report date: 1991-08-19.
5. NTP (1987), Toxicology and carcinogenesis studies of boric acid in B6C3F1 Mice (feed studies). National Toxicology Program (NTP) Technical Report Series: No. 324. Testing laboratory: US Department of Health and Human Services.
6. Weir RJ (1966c), Three generation reproductive study – rats. Boric acid. Final report. Testing laboratory: Hazleton Laboratories Inc. Report No.: TX-66-16.

7. Weir RJ and Fisher RS (1972), Toxicologic studies on borax and boric acid. Toxicology and Applied Pharmacology 23:351-364.
8. Duydu Y, Başaran N, Üstündağ A, Aydın S, Ündeğer Ü, Ataman OY, Aydos A, Düker Y, Ickstadt K, Waltrup BS, Golka K, Bolt HM (2011), Reproductive toxicity parameters and biological monitoring in occupationally and environmentally boron-exposed persons in Bandırma, Turkey. Arch Toxicol 85:589-600.
9. Duydu Y, Başaran N, Üstündağ A, Aydın S, Ündeğer Ü, Ataman OY, Aydos A, Düker Y, Ickstadt K, Waltrup BS, Golka K, Bolt HM (2011), Assessment of DNA integrity (COMET) in sperm cells of boron-exposed workers. Arch Toxicol 86:27-35.
10. Godfrey P (2011), Data Search, Chemical Hazard Assessment and Preparation of CLP Notification on Colemanite for ETI MINE SA. Cambride Environmental Assessments – ADAS, Report Number CEA 602/2.
11. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff D, Ping L (2010), Chronic boron exposure and human semen parameters, Repr Tox 29(2):184-90.
12. U.S. Environmental Protection Agency, Toxicological review of boron and compounds, EPA 635/04/052, June 2004.

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 himself as to the suitability and completeness of such information for his 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.

Safety Data Sheet Prepared by Arzu DEMİŞ

Certificate Date: 30.09.2015

Certificate Number: 01.58.04

Safety Data Sheet Prepared by Zeynep GÜRTÜRK

Certificate Date: 30.09.2015

Certificate Number: 01.58.07