SAFETY DATA SHEET

Effective Date: 3/01/2017
Replaces: 6/01/2015

Cement Treated Base

1. Identification

Product name:
Cement Treated Base

Other means of identification/Synonyms/Common Names:
CTB

Recommended use:
Cement Treated Base is used as a construction material.

Recommended restrictions:
None Known

Manufacturer/Contact info:
Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

General Phone Number:
1.866.401.5424

Emergency Phone Number:
1.866.401.5424 (3E Company, 24hours/day, 7 Days/week)

Website:
www.vulcanmaterials.com

2. Hazard(s) Identification

Physical hazards:
Not Classified

Health hazards:
Carcinogenicity-Category 1A
Skin Corrosion/Irritation-Category 1B
Specific target organ toxicity, repeated exposure- Category 3

Signal word:

Danger

Hazard statement:
Causes severe skin burns and eye damage
May cause respiratory irritation
May cause cancer (Inhalation)
Causes damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation)

Precautionary statement:

Prevention

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Do not breathe dust, fume, or vapors. Use only outdoors or in a well ventilated area.
- Wash hands thoroughly after handling
- Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection.

Response

- If exposed or concerned: Immediately call a Poison Center or doctor/physician. Get medical advice/attention
- Specific treatment (see the following information on this label)

- IF SWALLOWED: Rinse mouth Do NOT induce vomiting.
- IF ON SKIN: Remove/Take off immediately all contaminated clothing. Rinse cautiously with water for several minutes. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.
- IF INHALED: Remove victim to fresh air and keep at rest position comfortable for breathing.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Wash contaminated clothing before reuse.

Disposal

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

Supplemental information:

This product contains a naturally occurring mineral complex with varying quantities of quartz (crystalline silica). Respirable Crystalline Silica (RCS) may cause cancer. This product may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC, NTP; ACGIH states that it is a suspected cause of cancer.

3. Composition/information on ingredients

Chemical name	CAS number	%
Aggregate	Mixture	70-90
Quartz (crystalline silica)	14808-60-7	>1
Portland Cement	65997-15-1	5-8
Water	7332-18-5	5-10

4. First-aid measures

Inhalation:

For dried product dust inhalation, remove person to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops.

Eyes:

Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Contact a physician if irritation persists or later develops.

Skin:

Wash affected areas thoroughly with mild soap and fresh water. Remove and wash contaminated clothing. Contact a physician if irritation persists or later develops. Burns should be treated as caustic burns.

Ingestion:

If person is conscious do not induce vomiting. Give large quantity of water and get medical attention. Never attempt to make an unconscious person drink.

Most important symptoms/effects, acute and delayed:

Dust from dry product may irritate the eyes, skin, and respiratory tract. Breathing respirable crystalline silica-containing dust for prolonged periods in the workplace can cause lung damage and a lung disease called silicosis. Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure.

Indication of immediate medical attention and special treatment needed:

Not all individuals with silicosis will exhibit symptoms of the disease. However, silicosis can be progressive and symptoms can appear even years after exposures have ceased. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).

5. Fire-fighting measures

Suitable extinguishing media:

This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media:

None known.

Specific hazards arising from the chemical:
Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS).

Special protective equipment and precautions for firefighters:
Use protective equipment appropriate for surrounding materials.

Fire-fighting equipment/instructions:
None.

Specific methods:
The presence of this material in a fire does not hinder the use of any standard extinguishing medium. Use extinguishing medium for surrounding fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
Persons involved in cleanup processes should first observe precautions (as appropriate) identified in Section 8 of this SDS. **For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week)**.

Environmental precautions:
Prevent from entering into sewers or drainage systems where it can harden and clog flow.

Methods and materials for containment and cleaning up:
Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary.

7. Handling and storage

Precautions for safe handling:
Respirable crystalline silica-containing dust may be generated during processing, handling, and storage. Use personal protection and controls identified in Section 8 of this SDS as appropriate.

Conditions for safe storage, including any incompatibilities:
Do not store near food, beverages, or smoking materials.

8. Exposure controls/personal protection

Legend:
NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Particulates not otherwise classified	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)	10 mg/m^3 (inhalable fraction) 3 mg/m^3 (respirable fraction)	NE
Respirable dust containing silica	10 mg/m^3 ÷ (% silica + 2)	Use Respirable Silica TLV	Use Respirable Silica REL
Total dust containing silica	MSHA: 30 mg/m^3 ÷ (% silica + 3)	NE	NE
Respirable Crystalline Silica (quartz)	OSHA: 0.05 mg/m^3 (PEL) OSHA: 0.025 mg/m^3 (Action Level) MSHA: Use Respirable Dust containing Silica PEL (above)	0.025 mg/m^3	0.05 mg/m^3
Respirable Tridymite and Cristobalite (other forms of crystalline silica)	OSHA: Use respirable crystalline silica PEL MSHA: 1/2 of respirable dust containing silica PEL	0.025 mg/m^3	0.05 mg/m^3
Portland Cement	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)	10 mg/m^3	15 mg/m^3 (total dust) 5 mg/m^3 (respirable fraction)

Exposure Guidelines:
Total dust containing silica, respirable silica-containing dust and respirable crystalline silica (quartz) levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

Engineering Controls:
Ordinarily not required when working with wet product. Activities that generate dust from hardened product require the use of local exhaust or general ventilation adequate to maintain exposures below appropriate exposure limits.

Eye Protection:
Safety glasses with side shields should be worn as minimum protection. Goggles or face shield should be worn where splashing is possible. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated due to working with hardened product. Contact lens should not be worn when eye contact with product as possible.

Skin Protection (Protective Gloves/Clothing):
Waterproof gloves, rubber boots, and clothing sufficient to protect the skin from contact with wet product should be worn. Clothing saturated from contact with wet product should be removed promptly to prevent continued contact with skin. As a precaution, wash hands thoroughly before eating, smoking, and using toilet facilities. After working with product, workers should clean their skin/shower with soap and water. Clean clothing should be worn after showering.

Respiratory Protection:
Ordinarily not required when product is wet. All respirators must be NIOSH-approved for the exposure levels present. (See NIOSH Respirator Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica-containing dust levels that exceed or are likely to exceed an 8-hour time-weighted average (TWA) of 0.25 $\mathrm{mg/m^3}$, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica-containing dust levels exceed or are likely to exceed an 8-hour TWA of 1.25 $\mathrm{mg/m^3}$ an air-purifying, full-face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

9. Physical and chemical properties

Appearance:
Gray, granular mixture.

Odor: Faint odor.	**PH:** Not applicable	**Decomposition temperature:** Not applicable
Melting point/freezing point: Not applicable	**Initial boiling point and boiling range:** Not applicable	**Flash point:** Non-combustible
Evaporation rate: Not applicable	**Flammability:** Not applicable	**Upper/lower flammability or explosive limits:** Not applicable
Vapor pressure: Not applicable	**Relative density:** Not applicable	**Solubility:** **0**
Partition coefficient: n-octanol/water. Not applicable	**Autoignition temperature:** Not applicable	**Specific Gravity (H2O = 1):** 2.4 - 2.85

10. Stability and reactivity

Reactivity:
Not reactive under normal use.

Chemical stability:
Stable under normal temperatures and pressures.

Possibility of hazardous reactions:
None under normal use.

Conditions to avoid (e.g., static discharge, shock or vibration):
Contact with incompatible materials should be avoided (see below). See Sections 5 and 7 for additional information.

Incompatible materials:

Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.

Hazardous decomposition products:

Respirable crystalline silica-containing dust may be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F). Both tridymite and cristobalite are other forms of crystalline silica.

11. Toxicological information

Primary Routes of Exposure:

Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical, toxicological characteristics

Inhalation:

Wet product can cause chemical burns to eyes and skin. Dusts may irritate the nose, throat and respiratory tract by mechanical abrasion. Coughing sneezing and shortness of breath may occur.

Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Eye Contact:

Contact may result in chemical (caustic) burns and eye injury which may be progressive and could cause blindness. Symptoms may include tearing, redness, pain, swelling with blurred vision. Dusts from hardened product may be irritating.

Skin Contact:

May cause skin irritation with redness, an itching or burning feeling, and swelling of the skin. May cause contact dermatitis, with symptoms that may include (but are not limited to) reddening, irritation and rash. More severe effects, including chemical (alkali) burns and skin ulcers may occur. Dusts from hardened product may be irritating.

Ingestion:

Direct contact with exposed tissues may result in severe irritation with pain, nausea, vomiting, and/or diarrhea and possibly chemical (alkali) burns.

Medical Conditions Aggravated by Exposure:

Irritated or broken skin increases chance of contact dermatitis. Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). Smoking tobacco will impair the ability of the lungs to clear themselves of dust.

Delayed and immediate effects and also chronic effects from short- and long-term exposure:

Hydraulic (Portland) cement may contain trace amounts of hexavalent chromium. Hexavalent chromium has been associated in some individuals with causing allergic skin reactions which may be manifested as contact dermatitis and skin ulcerations. Individuals, who develop allergies to skin in sensitizers such as hexavalent chromium, may experience a reaction upon repeated contact with those compounds. Irritated or broken skin is more likely to develop further complications such as ulcers and infection.

<u>The following information pertains to hardened dry material:</u>

Prolonged overexposure to respirable dusts in excess of allowable exposure limits can cause inflammation of the lungs leading to possible fibrotic changes, a medical condition known as pneumoconiosis.

Prolonged and repeated overexposure to high levels of respirable crystalline silica-containing dust may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of overexposure; a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of prolonged and repeated overexposure. In early stages of silicosis, not all individuals will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased.

Repeated overexposures to very high levels of respirable crystalline silica for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain.

Respirable dust containing newly broken crystalline silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older crystalline silica particles of similar size. Respirable crystalline silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures to respirable dust containing newly broken particles of respirable crystalline silica.
There are reports in the literature suggesting that excessive respirable crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Carcinogenicity:

Epidemiology studies on the association between respirable crystalline silica exposure and lung cancer have had both positive and negative results. There is some speculation that the source, type, and level of exposure of respirable crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increases with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.
In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). In 2012, an IARC Working Group re-affirmed that inhalation of crystalline silica was a known human carcinogen. The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to respirable crystalline silica.

Additional information on toxicological-effects:

Acute toxicity: Not classified

Skin corrosion/irritation: Causes severe skin burns and eye damage

Serious eye damage/eye irritation: Not classified.

Respiratory sensitization: Not classified.

Skin sensitization: Not classified.

Germ cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Reproductive toxicity: Not classified

Specific target organ toxicity - single exposure: May cause respiratory irritation

Specific target organ- toxicity – repeated exposure: Causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Aspiration toxicity: Not classified

12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

Not determined

Persistence and degradability:

Not determined

Bioaccumulative potential.

Not determined

Mobility in soil.
Not determined

Other adverse effects.
Not determined

13. Disposal considerations

Safe handling and disposal of waste:
Material can be retained until it hardens, and then disposed of as solid waste. Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Do not dump on the ground unless allowed by local regulatory officials. Prevent from entering drainage, sewer systems, and unintended bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

14. Transport information

UN Number:
Not regulated.

UN Proper shipping name:
Not regulated.

Transport Hazard class:
Not applicable.

Packing group, if applicable:
Not applicable.

Marine pollutant (Yes/No):
Not applicable.

15. Regulatory information

Toxic Substances Control Act (TSCA):
The components in this product are listed on the TSCA Inventory or are exempt.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):
Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act.

Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III:
Section 302 extremely hazardous substances: None
Section 311/312 hazard categories: Delayed Health
Section 313 reportable ingredients at or above de minimus concentrations: None

California Proposition 65:
This product contains a chemical (crystalline silica, chromium, cobalt, nickel) known to the State of California to cause cancer.

State Regulatory Lists:
Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

16. Other information

Disclaimer

NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.

Vulcan Materials Company and its subsidiaries and affiliates ("Vulcan") believe the information contained herein is accurate; however, Vulcan makes no guarantees with respect to such accuracy and assumes no liability whatsoever in connection with the use of any information contained herein by any party. The provision of the information contained herein is not intended to be, and should not be construed as, legal advice or as ensuring compliance with any federal, state, or local laws, rules or regulations. Any party using any information contained herein should review all applicable laws, rules and regulations prior to use.

Issue date:
3/01/2017

Revision date:
3/01/2017

Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242