

# MATERIAL SAFETY DATA SHEET

Effective Date: June 27, 2006

Revised: August 31, 2006

**pental**  
GRANITE & MARBLE

713 S Fidalgo Street  
Seattle, WA 98108  
206-768-3200

**EMERGENCY TELEPHONE NO.: 1-800-222-1222**  
or **Dial 911** American Poison Control Center

## SECTION 1 – PRODUCT IDENTIFICATION

Material Name: <b>BASALT</b>		NOT A CONTROLLED PRODUCT	
Chemical Family <b>Inorganic Compound</b>	Chemical Formula <b>Mixture</b>	Molecular Weight <b>Not Applicable</b>	
Material Use <b>Aggregates</b>		DOT Identification No. <b>None</b>	
Trade Name and Synonyms <b>Igneous Rock, Aggregate, Albemarle, Asphalt Sand, Base Material, Concrete Sand, Crushed Rock, Crushed Run, Crushed Stone, Dense Graded Aggregate, Fill Sand, Gabbros, Golf Course Sand, Granite, Granitic Rock, Gravel, Manufactured Sand, Mason Sand, Trap Rock, Slab. Tile.</b>			

## SECTION 2 – COMPOSITION AND INFORMATION ON INGREDIENTS

COMPONENTS CHEMICAL NAME	CAS REGISTRY NO.	% by WEIGHT (approximate)	MSHA/OSHA PEL	ACGIH TLV-TWA
Basalt (Composition varies naturally; typically contains feldspar, mica, chlorite, and other naturally occurring minerals)	None	0.0 – 100.0	Not Evaluated	Not Evaluated
Mica	12001-26-2	0.0 – 100.0	(R) 3 mg/m <sup>3</sup>	(R) 3 mg/m <sup>3</sup>
Silicon Dioxide*, SiO <sub>2</sub> (Crystalline Silica as Quartz)	14808-60-7	1.0 – 70.0	(R) 10 mg/m <sup>3</sup> /(% SiO <sub>2</sub> ) § (T) 30 mg/m <sup>3</sup> /(% SiO <sub>2</sub> )	(R) 0.05 mg/m <sup>3</sup>
Fiberform Ferro-Actinolite with rare occurrences of Asbestiform Ferro-Actinolite (asbestos fiber)	1332-21-4	< 0.01	(T) 15 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>	0.1 f/cc Short term (30 min.)

The composition of SiO<sub>2</sub> may be up to 100% crystalline silica. (R) Respirable (T) Total § Crystalline silica is normally measured as respirable dust. The OSHA standard also presents a formula for calculation of the PEL based on total dust: 30 mg/m<sup>3</sup> / (% SiO<sub>2</sub> + 2). BASALT CONTAINS SILICA IN THE FORM OF SILICA DIOXIDE (QUARTZ). DUST PRODUCED FROM CUTTING OR REMOVING CAN CAUSE SILICOSIS, A RESPIRATORY DISEASE THAT IS TYPICALLY FATAL. CUTTING MUST OCCUR UNDER WATER, AND A RESPIRATOR WORN AS OUTLINED IN SECTION 8. OTHER HAZARDS ARE DUE TO EXCESSIVE WEIGHT OF BASALT. USE CRATES THAT WILL NOT BREAK, AND PALLET RACKS RATED HIGHER THAN THE LOAD BEING STORED FOR TILES. BE AWARE OF UNSECURED STACKS AND BREAKING CRATES. USE PROPER EQUIPMENT TO HANDLE BASALT SLABS. BASALT IS A MIXTURE OF NATURAL OCCURRING MINERALS, AND IS PERFECTLY SAFE WHEN PROPERLY INSTALLED.

### SECTION 3 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor <b>Solid particles in gray, green, and white; range in size from dust to boulders. Odorless.</b>	Specific Gravity <b>2.6 – 2.81</b>
Boiling Point <b>Not applicable</b>	Vapor Density in Air (Air = 1) <b>Not applicable</b>
Vapor Pressure <b>Not applicable</b>	% Volatile, by Volume <b>0%</b>
Evaporation Rate <b>0%</b>	Solubility in Water <b>Negligible</b>

### SECTION 4 – STABILITY AND REACTIVITY DATA

Stability <b>Stable</b>	Hazardous Polymerization <b>Not known to polymerize</b>
Conditions to Avoid <b>Avoid contact with incompatible materials (see below) and exposure to crystalline silica (quartz) dust particles, usually generated while cutting, crushing, sawing, or removing.</b>	
Incompatibility (material to avoid) <b>Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetra fluoride.</b>	
Hazardous Decomposition Products <b>These products do contain asbestos in a very small quantity. Under normal conditions these products do not release hazardous materials after installation and are not hazardous waste should disposal be necessary. The main concern would come from inhaling crystalline silica dust release while cutting or removing tiles. Asbestos dust is unlikely even during cutting operations.</b>	

### SECTION 5 – HAZARDS AND TOXICITY

Exposure Limits <b>Below is a definition of exposure limits in the workplace, especially when contact with this product and other chemicals is concurrent. Limits are eight-hour time-weighted averages (TWA), unless specified otherwise. Limits for cristobalite and tridymite (other forms of crystalline silica) are equal to one-half of the limits for quartz.</b>
Inhalable Particulate Limits <ul style="list-style-type: none"><li>◆ <b>2001 ACGIH TLV® = 10 mg/m<sup>3</sup> (inhalable /total particulate, not otherwise specified)</b></li><li>◆ <b>2001 ACGIH TLV® = 3 mg/m<sup>3</sup> (respirable particulate, not otherwise specified)</b></li><li>◆ <b>OSHA PEL = 15 mg/m<sup>3</sup> (total particulate, not otherwise regulated)</b></li><li>◆ <b>OSHA PEL = 5 mg/m<sup>3</sup> (respirable particulate, not otherwise regulated).</b></li></ul>

Respirable Limit, Crystalline Silica (SiO <sub>2</sub> or Quartz) <b>ACGIH TLV<sup>®</sup> = 0.1 mg/m<sup>3</sup>, MSHA and OSHA PEL = 10 mg/m<sup>3</sup> (%SiO<sub>2</sub> + 2), for respirable dust containing crystalline silica.</b>		
Total Dust Limits, Respirable and Nonrespirable <b>1973 ACGIH TLV<sup>®</sup> = 30 mg/m<sup>3</sup> ÷ (% quartz + 2).</b> <b>MSHA PEL = 10 mg/m<sup>3</sup> for nuisance particulates listed in Appendix E of the 1973 ACGIH TLV<sup>®</sup> booklet. [Appendix E includes: aluminum oxide (Al<sub>2</sub>O<sub>3</sub>); calcium carbonate; cellulose (paper fiber); Portland cement; corundum (Al<sub>2</sub>O<sub>3</sub>); emery; glass {fibrous (&lt; 5-7 μm in diameter) or dust}; glycerin mist; graphite (synthetic); gypsum; vegetable oil mists (except castor, cashew nut, or similar irritant oils); kaolin; limestone; magnesite; marble; pentacrythritol; plaster of Paris; rouge; silicon carbide; starch; sucrose; tin oxide; and titanium dioxide].</b> <b>Acenolite Asbestos: OSHA TWA = 0.1 f/cc short term (30 min); MSHA TWA = 2 f/cc.</b>		
Route of Entry <input checked="" type="checkbox"/> Skin Contact <input type="checkbox"/> Skin Absorption	<input checked="" type="checkbox"/> Eye Contact <input checked="" type="checkbox"/> Ingestion	<input checked="" type="checkbox"/> Acute Inhalation <input checked="" type="checkbox"/> Chronic Inhalation
Effects of Acute Exposure to Product Skin <b>Direct contact may cause irritation by mechanical abrasion. Skin absorption usually is not a significant route of exposure.</b> Eyes <b>Direct contact may cause eye irritation by mechanical abrasion with discomfort or pain, local redness, and swelling of the conjunctiva may occur.</b> Inhalation <b>If inhaled in the form of dust, it may cause nose, throat, and respiratory tract irritation by mechanical abrasion. Exposures in <u>excess</u> of appropriate exposure limits may cause coughing, sneezing, and shortness of breath.</b> Ingestion <b>Expected to be practically non-toxic. If ingested in large quantities, may cause gastro-intestinal irritation and/or blockage.</b> <b>Acute toxic effects are not a concern in the use of Basalt for construction purposes. However, inhaling respirable dust may aggravate existing respiratory system disease(s) and/or dysfunctions. Exposure to dust may aggravate existing skin and or eye conditions.</b>		
Effects of Chronic Exposure to Basalt Dust <b>Quartz is a natural constituent of the Earth's crust and does not chemically combine with any other substance. Basalt, quartz monzonite, and granodiorite contain 70% to 77% silica. Exposure to silica-containing dust at any time poses a potential health hazard. Repeated overexposure to very high levels of respirable crystalline silica (quartz, cristobalite, tridymite) for periods of six months or more have caused acute silicosis. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms can appear at any time, even years after exposure has ceased. Symptoms include (but are not limited to) shortness of breath, diminished work capacity, cough, fever, right heart enlargement and/or failure, weight loss, and chest pain. Excessive inhalation of dust may result in respiratory disease, including silicosis, pneumoconiosis, and pulmonary fibrosis. Persons with silicosis have an increased risk of pulmonary tuberculosis infection. Smoking may increase the risk of developing lung disorders, including emphysema and lung cancer. Test reports show respirable dust containing newly broken silica particles to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size.</b>		
Irritancy of Product <b>Eyes</b>	Sensitization to Product <b>None</b>	Synergistic Materials <b>None reported</b>

## SECTION 6 – FIRST AID MEASURES

### Eyes

**Immediately rinse contaminated eye(s) with gently running lukewarm water (saline solution is preferred) for at least 15 minutes, while holding the eyelid(s) open. In the case of an embedded particle in the eye, or if irritation occurs, consult a physician. Beyond flushing, do not attempt to remove material from the eye(s).**

### Skin

**Carefully and gently, brush the contaminated body surfaces in order to remove all traces of Basalt. Use a brush, cloth, or gloves. Remove all contaminated clothing. Wash work clothes after each use. Wash dust-exposed skin with soap and water before eating or drinking. Contact a physician if irritation persists or later develops.**

### Inhalation

**Move source of dust away from person, or move victim to source of fresh air. Dust in throat and nasal passages should clear spontaneously. Obtain medical attention immediately. If victim does not breath, give artificial respiration. Contact a physician immediately.**

### Ingestion

**If victim is conscious, wash out mouth with water. Have conscious person drink several glasses of water. Induce vomiting. Contact a physician immediately. Never give anything by mouth to an unconscious or convulsing person.**

### General Advice

**Consult a physician for all exposures except minor instances of inhalation.**

## SECTION 7 – REGULATORY INFORMATION

☒ Carcinogenicity   ☐ Reproductive Effects   ☐ Teratogenicity   ☐ Mutagenicity

**Basalt and is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA). In October 1996, an IARC Working Group re-assessing crystalline silica, a component of Basalt, designated respirable crystalline silica as carcinogenic (Group 1). The NTP's Report on Carcinogens, 9<sup>th</sup> edition, lists respirable crystalline silica as a "known human carcinogen". In year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These statements are from sufficient reported evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.**

**CALIFORNIA PROPOSITION 65: WARNING (Safe Drinking Water and Toxic Enforcement Act of 1986)**  
**Component Basalt does not appear on the above regulatory listing. However, crystalline silica is a component of this product. California regulates crystalline silica (airborne particles of respirable size) under the state of California Safe Drinking Water and Toxic Enforcement Act of 1986 as a cause of cancer.**

**CWA 311 – Clean Water Act List of Hazardous Substances**

**Basalt does not appear on the Clean Water Act (CWA) list of hazardous substances.**

**Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) / The Emergency Planning and "Community Right-to-Know" Act (EPCRA) / Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).**

**Component Basalt has been reviewed against the following regulatory listings:**

- ◆ **Section 302 – Emergency Planning Notification. Extremely Hazardous Substances (EHS) List and Threshold Planning Quantity (TPQ). (40 CFR, Part 355, Section 30): Not listed.**
- ◆ **Section 304 – Emergency Release Notification. Extremely Hazardous Substances (EHS) and Reportable Quantity (RQ) List. (40 CFR, Part 355, Section 40): Not listed.**
- ◆ **Section 311/312 – Hazard Categories (40 CFR, Part 370): This product is regulated under CFR 1910.1200 (OSHA Hazard Communication).**
- ◆ **Section 313 – Toxics Release Inventory (TRI). Toxic Chemical List (40 CFR, Part 372): Not listed.**

**Transportation – Hazardous Materials Regulations (USA) & Transportation of Dangerous Goods (TDG) Regulations (Can).**

**Basalt does not appear on the above regulatory listings.**

**Toxic Substances Control Act (TSCA)**

**All naturally occurring components of this product are automatically included in the USEPA TSCA Inventory List per 40 CFR 710.4 (b). Basalt is exempt from reporting under the inventory update rule.**

**Canadian Environmental Protection Act (CEPA)**

**Quartz, a component of this product, appears on the Domestic Substances List (DSL).**

**ANSI/NSF 60 – Drinking Water Treatment Additives.**

**Not applicable.**

**FDA – U.S. Food and Drug Administration, Department of Health and Human Services**

**Not applicable.**

## SECTION 8 – PREVENTATIVE MEASURES, PERSONAL PROTECTION, AND CONTROLS

### Personal Protective Equipment (PPE)



**Wear clean, dry gloves, full-length pants over boots, long sleeved shirt buttoned at the neck, head protection, and approved eye protection selected for the working conditions.**

### Eyes



**Wear safety glasses with side shields as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated.**

### Skin

**Clothing, boots, and gloves that fully covers all skin provides the best protection.**

### Respiratory Protection



- ◆ **Wear a NIOSH approved dust respirator for respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.1 mg/m<sup>3</sup>.**
- ◆ **Wear a NIOSH approved HEPA filter respirator for respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.5 mg/m<sup>3</sup>.**
- ◆ **Wear a NIOSH approved positive pressure, full-face respirator, or equivalent if respirable quartz levels exceed or are likely to exceed an 8-hr TWA of 5 mg/m<sup>3</sup>.**
- ◆ **Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user-training program, respirator repair and cleaning, respirator fit testing, and other requirements.**

### Hygiene

**Wash work clothes after use and dust-exposed skin with soap and water before eating, drinking, smoking, and using toilet facilities. Avoid breathing dust, skin, and eye contact.**

### Engineering Controls

- ◆ **Ventilation: Use local exhaust, general ventilation, or natural ventilation adequate to maintain exposures below appropriate exposure limits.**
- ◆ **Monitor respirable dust and quartz levels regularly.**
- ◆ **Dust and quartz levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee work stations.**

## SECTION 9 – STORAGE AND HANDLING PRECAUTIONS

### Protection

**Respirable crystalline silica-containing dust usually appears during processing, cutting, drilling, routing, storage, and removal. Do not breathe dust. Always wear protection from breathing dust. Use personal protection and controls identified in Section 8 of this MSDS as appropriate. Avoid contact with skin and eyes.**

### Storage

**Do not store near food and beverages or smoking materials. Shelf life is unlimited.**

### Handling

**This product is not an abrasive blasting medium or for foundry applications. Do not stand on stacked tiles, as they may be unstable. Use appropriate equipment for handling large pieces: fork lift jacks, etc. and follow all safety rules. Store tiles on appropriately strong racks and in crates designed to handle large loads. Store slabs on edge in racks.**

## SECTION 10 – SPILL OR LEAK CLEANUP AND WASTE DISPOSAL

### Material Release or Spill

- ◆ Spilled material where dust occurs, may overexpose cleanup personnel to respirable crystalline silica-containing dust.
- ◆ Use the personal protection and controls identified in Section 8 of this MSDS as appropriate.
- ◆ Wetting of spilled material and/or use of respiratory protective equipment may be necessary.
- ◆ Spilled material must not be dry swept. Use water or a vacuum instead.
- ◆ Prevent spilled material from inadvertently entering streams, drains, or sewers.
- ◆ Train all personnel on handling and safety rules for working with Basalt, forklifts, sampling, etc. as needed.

### Waste Disposal

- ◆ Collect and reuse clean material.
- ◆ Dispose of waste materials in accordance with applicable federal, state, provincial, and local environmental laws and regulations.

## SECTION 11 – FIRE AND EXPLOSION HAZARD DATA

### Flammable

Yes ☐ No ☒

### Extinguishing Media

**Basalt does not burn. Use extinguishing media appropriate to surrounding fire conditions.**

### Special Fire Fighting Procedures

**Basalt is generally non-flammable, but ignites on contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride. These substances may cause fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas – silicon tetra fluoride. Wear adequate personal protection to prevent contact with material or its combustion products. Firefighters should use self-contained NIOSH approved breathing apparatus with full-face piece to protect against the products of combustion.**

Flash point (°C) and Method  
**Not applicable**

Upper flammable limit  
**Not applicable**

Lower flammable limit  
**Not applicable**

Auto Ignition Temperature (°C)  
**Not applicable**

TDG Flammability Classification  
**Not applicable**

Hazardous Combustion Products  
**None**

Dangerous Combustion Products **None**

### EXPLOSION DATA

Sensitivity to Chemical Impact  
**Not applicable**

Rate of Burning  
**Not applicable**

Explosive Power  
**Not applicable**

Sensitivity to Static Discharge  
**Not applicable**

## SECTION 12 – TRANSPORT INFORMATION

Dot Hazard Classification – 49 CFR 172.101  
**Non-Regulated by D.O.T.**

Placard Required  
**None**

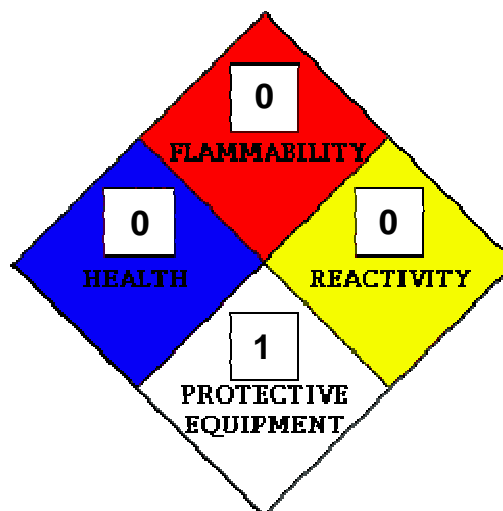
Label Required  
**Label as required by the OSHA Hazard Communication standard {29 CFR 1910.1200 (f)}, and applicable state and local regulations.**

RQ (Reportable Quantity) – 49 CFR 172.101  
**Not applicable**

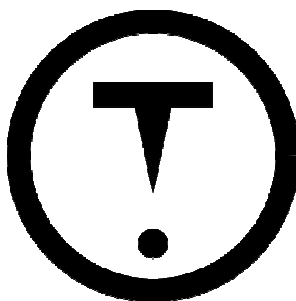
MATERIAL IDENTIFICATION SYSTEMS – HAZARD LABELING  
[May be required by the OSHA Hazard Communication standard {29 CFR 1910.1200 (f)}, and applicable state and local regulations]



Hazardous Materials Identification System (U.S.)



National Fire Protection Association (U.S.)  
Where:  
0 = Least 1 = Slight 2 = Moderate  
3 = High 4 = Extreme



**D-2A**  
Workplace Hazardous Materials Information System (Canada)  
Classification D2A Materials causing other toxic effects



## SECTION 13 – GLOSSARY

### Agencies and Regulations

**ACGIH:** American Conference of Government Industrial Hygienists  
**CFR:** US Code of Federal Regulations  
**DOT:** US Department of Transportation  
**DSL:** Domestic Substances List  
**IARC:** International Agency for Research on Cancer  
**NIOSH:** National Institute for Occupational Safety and Health  
**NTP:** National Toxicology Program  
**OSHA:** Occupational Safety and Health Administration, US Department of Labor  
**SARA:** Title III of the Superfund Amendments and Reauthorization Act, 1986

### Abbreviations

- ◆ **IDLH:** Immediately Dangerous to Life and Health
- ◆ **mg/m<sup>3</sup>** = milligrams of substance per cubic meter of air
- ◆ **MSHA PEL** = Permissible Exposure Limit of the Mine Safety and Health Administration (MSHA)
- ◆ **OSHA PEL** = Permissible Exposure Limit of the Occupational Safety and Health Administration (OSHA)
- ◆ **TLV<sup>®</sup>** = Threshold Limit Value of the American Conference of Governmental Industrial Hygienists (ACGIH)
- ◆ **TWA** = Time-Weighted Average

### Sources Used

**NFPA, TDG, CSST, RSST, (LSRO-FASEB), Hazardous Products Act, Environment Canada, Enviroguide, OSHA, ACGIH, IARC, NIOSH, CFR, NTP, HSDB, EPA SRS, MSHA, Geology of the nonmetals, Health Canada, Luck Stone MSDS, Lafarge North America MSDS, L&M Construction Chemicals, Inc. MSDS, Marble Institute of America Technical Bulletin "Preparing a Generic MSDS for Natural Stone."**

## SECTION 14 – PREPARATION OF THIS DOCUMENT

### Prepared by

**Wayne Bergman, tel: 206-768-3200**  
**Operations Manager**  
**Pental Granite & Marble**  
**713 S Fidalgo Street**  
**Seattle, WA 98108**

### Other Contacts

**Peter Pental, cell: 206-255-6344**  
**Ravi Pental, cell: 206-255-6338**

### Date of Preparation

**June 27, 2006**

### Updated

**August 31, 2006**

### Notice

**Pental Granite & Marble believes the information contained herein is accurate. The suggested precautions and recommendations come from recognized good work practices and experience as of the date of publication. They are not necessarily all-inclusive or fully adequate in every circumstance, as one cannot anticipate all use situations. However, the suggestions should not be confused with nor followed in violation of applicable laws, regulation, rules, insurance requirements, or safety practices. In addition, one must not use this product in a manner that could cause harm.**

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