

SAFETY DATA SHEET

SECTION 1 – COMPANY AND PRODUCT IDENTIFICATION

Product name : Hanover® Porcelain Pavers

Recommended use : Paving units for use in architectural and hardscape applications.

Manufacturer : Hanover® Architectural Products
5000 Hanover Road
Hanover, PA 17331
Phone: (717) 637-0500
Toll free: 1-800-426-4242
Fax: (717) 637-7145
Internet: www.hanoverpavers.com

Emergency phone : INFOTRAC 800-535-5035
(Outside the US, call collect 352-323-3500)

SECTION 2 – HAZARDS IDENTIFICATION

Hazard pictograms :



Signal word : Warning

Hazard statement(s) : Odorless solid. Non-flammable. During the firing process a very stable chemical crystal grid structure is formed. Porcelain paver units themselves pose no health hazards; however, during activities such as sawing or grinding, dust is generated containing crystal silica. Inhalation of this type of dust is hazardous and should be avoided.

Precautionary Statement : None.

Hazards not otherwise classified : Not applicable

Primary routes of exposure : Primary routes of exposure to concrete dust are inhalation and eye/skin contact.

SECTION 2 – HAZARDS IDENTIFICATION

Potential effects and symptoms of acute exposure : Inhalation: Dust particles from sawing or grinding may result in minor nose irritation or respiratory tract irritation. Exposure to excessive amounts of dust for prolonged periods could result in lung damage.

Eye contact: Dust particles released by sawing or grinding may cause minor eye irritation. Eye protection with tight fitting goggles is recommended. Signs and symptoms may include pain, tears, swelling, and redness. Severity of symptoms will depends on the amount of dust contacted.

Skin contact: Lack of appropriate hand protection could result in skin abrasions.

Ingestion: This is an unlikely route of entry.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients : Pavers consist of a mixture of predominantly clay types and other naturally occurring mineral substances. After mixing with water and pressing, the body is fired at very high temperatures. During the firing process very stable crystal grid structures are formed in which the individual chemical elements are incorporated. This also applies to the glazing layer.

Main constituents of ceramic pavers (body) are silicon oxide (60 – 70%), aluminum oxide (15 – 25%) and small percentages of the metal oxides.

Main constituents of the glazing layer are silicon oxide (approx. 50%), aluminum oxide (approx. 10%) and calcium oxide (approx. 10%); furthermore the glazing layer may contain small percentages of the metal oxides and may contain trace metal compounds.

Also evident are small amounts of organic and inorganic materials, which have no known effects on the hazards associated with the use of this product. Exact composition has been withheld as proprietary information in accordance with paragraph (i) of §1910.1200.

Additional health data comment : Exposure to dust particles from sawing or grinding may aggravate preexisting lung diseases such as Emphysema or Asthma. Exposure to excessive amounts of dust for prolonged periods of time could result in lung damage. Breathing of dust that is released by altering its state should be reduced to a minimum. Normal handling of this product in its original state is not known to cause cancer in humans.

SECTION 4 – FIRST AID MEASURES

Inhalation : Dust may cause respiratory tract irritation. If breathing is difficult, remove victim to fresh air and keep in a position comfortable for breathing. If there are signs or symptoms of minor nose irritation that persist, contact a physician.

SECTION 4 – FIRST AID MEASURES

- Inhalation** : If there are signs or symptoms of lung damage (dry or severe cough, fatigue or tiredness, changes in breathing pattern, loss of appetite, chest pain, fever, gradual dark shallow rifts in nails eventually leading to cracks), seek the care of a physician. Signs of chronic lung damage following prolonged exposure may not appear until years after exposure.
- Eye Contact** : Flush eyes generously with water. If irritation persists, contact a physician.
- Skin Contact** : Clean abrasions with mild soap and water and then cover the area with an antibiotic ointment and a dry dressing. If irritation persists, contact a physician.
- Ingestion** : This is an unlikely route of entry.
- Symptoms** : See Section 11

SECTION 5 – FIRE FIGHTING MEASURES

- Flammability** : Not combustible. Not applicable.
- Extinguishing Media** : Not applicable. Use extinguishing media appropriate for surrounding flammable materials.
- Unsuitable Extinguishing Media** : Not available.
- Personal Protective Equipments (PPE)** : Not applicable. Use PPE appropriate for surrounding flammable materials.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Personal Protective Equipment (PPE) Precautions** : If a large amount of dust has been generated, eye protection and appropriate respirator protection should be used to protect cleanup personnel against dust.
- Containment and Clean Up** : Sweep the dust particles and discard. Use wet suppression methods, if appropriate, to reduce the generation of dust. Provide ventilation if dust is generated. Dispose of waste at a disposal facility in accordance with all local, regional, national and international regulations.

SECTION 7 – HANDLING AND STORAGE

- Storage** : There are no specific precautions when storing or handling the product in its original state. Wear NIOSH (National Institute for Occupational Safety and Health) approved particulate respirator and tight fitting goggles when sawing or grinding. Allow proper ventilation when sawing or grinding in a confined area. Wear protective gloves when required.
- General Hygiene Advice** : Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with soap and water before eating, drinking or smoking, and again when leaving work.

SECTION 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

- Engineering Controls** : During the occupational processing of pavers (drilling, sawing, grinding of pavers, removal of old paver layers) large amounts of dust can be generated. This dust contains silica.
- Sustance Occupational Exposure Limit** : Crystalline silica: 0.025mg/m3 respirable dust in accordance with TLV-ACGIH.
- Respiratory Protection** : NIOSH Approved respirator and tight fitting goggles.
- Feet Protection** : Use of steel toe shoes is recommended when handling pavers.
- Eye Protection** : Safety glasses with side shields should be worn as minimum protection. Dust goggles or full face protection should be worn when conditions with high dust concentrations exist or are anticipated.
- Skin Protection** : Use gloves to provide hand protection from abrasion.
- Additional Protective Measures** : Airborne dust levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation and process enclosure.
- Control of Occupational Exposure** : Technical Measures: Bring pavers to size using a score-and-cut cutter instead of sawing or grinding. During sawing or grinding of pavers use local exhaust ventilation combined with collection of dust; wet sawing or grinding methods are preferred (sawing and grinding equipment with water supply; application of (semi) automatic removal equipment with moistening facility).
- Ventilation** : Provide adequate ventilation; perform activities outside as much as possible.
- Respiratory Protection** : Always use NIOSH Approved respirator during sawing or grinding, in combination with local exhaust ventilation. A type P3 filtering piece is sufficient. When not applying local exhaust ventilation or wet sawing or grinding methods, a (half or full mask) respirator with motor/filter unit (type TM3P) should be used. This is also recommended during removal of old pavers.
- Feet Protection** : Use of steel toe shoes is recommended when handling pavers.
- Eye Protection** : Safety glasses with side shields should be worn as minimum protection. Dust goggles or full face protection should be worn when sawing or grinding pavers or removing old pavers. Avoid wearing contact lenses.
- Skin Protection** : Use gloves to provide hand protection from abrasion.
- Hygiene** : Wash hands before eating, drinking, smoking, or after handling.
- Additional Protective Measures** : Airborne dust levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation and process enclosure.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

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| Appearance | : Solid concrete object. |
| Odor | : None. Not applicable. |
| Odor Threshold | : None. Not applicable. |
| pH | : None. Not applicable. |
| Melting Point/Freezing Point | : None. Not applicable. |
| Initial Boiling Point and Boiling Range | : None. Not applicable. |
| Flash Point | : None. Not applicable. |
| Evaporation Rate | : None. Not applicable. |
| Flammability | : Solid. Not applicable. |
| Upper/lower flammability or explosive limits | : Solid. Not applicable. |
| Vapor pressure | : No data available. |
| Vapor density | : No data available. |
| Relative density | : No data available. |
| Solubility(ies) | : No data available. |
| Partition coefficient | : No data available. |
| Auto-ignition temperature | : Solid. Not applicable. |
| Decomposition temperature | : No data available. |
| Viscosity | : No data available. |

SECTION 10 – STABILITY AND REACTIVITY

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|-------------------------------------------|---------------------------------------------------------------|
| Reactivity | : No dangerous reaction known under conditions of normal use. |
| Chemical Stability | : Stable under normal conditions of use. |
| Possibility of Hazardous Reactions | : No dangerous reaction known under conditions of normal use. |

SECTION 10 – STABILITY AND REACTIVITY

Conditions to Avoid : Contact with strong acids.

Incompatible Materials : Strong acids may etch paving units.

Hazardous Decomposition : Not applicable.

SECTION 11 – TOXICOLOGICAL INFORMATION

Likely Routes of Exposure : Material as provided does not present an inhalation, ingestion or contact hazard. Exposure will only occur during processing of the pavers (sawing, drilling, cutting, grinding, removal of old pavers) and concerns exposure dust to inhalation of dust (specifically crystalline silica) and of the eyes and skin.

Inhalation : No dangerous reaction known under conditions of normal use. Operations such as sawing and grinding may cause congestion and irritation in nasal and respiratory passages

Eye Contact : Stable under normal conditions of use. Operations such as sawing and grinding may cause irritation by abrasion with dust or chips.

Skin Contact : No dangerous reaction known under conditions of normal use. Operations such as sawing and grinding may cause allergic reactions in hypersensitive individuals.

Ingestion : None known.

Acute Toxicity : Although cases of development of acute silicosis due to short term exposure to very high concentrations of crystalline silica are described in literature, occurrence of this type of disease is very rare.

Chronic Effects : Long term inhalation exposure to crystalline silica above current occupational exposure limits may lead to silicosis and is also associated with a number of other diseases (bronchitis, emphysema, etc.). Smoking may increase risk of adverse effects.

Carcinogenicity : Crystalline silica is classified as a human carcinogen (Group I) by the IARC (International Agency for Research on Cancer).

SECTION 12 – ECOLOGICAL INFORMATION

Acute/Chronic Toxicity : No ecological consideration when used according to directions.

Persistence and Degradability : Not biologically degradable.

Bioaccumulation : Not applicable.

SECTION 12 – ECOLOGICAL INFORMATION

Mobility in Soil : Emissions tests show the emission of metals and sulfate to be less than 5% of the maximum allowable emission.

Other Adverse Effects : Not known.

SECTION 13 – DISPOSAL INFORMATION

Dispose of waste at a disposal facility in accordance with all local, regional, national and international regulations.

SECTION 14 – TRANSPORT INFORMATION

Not regulated. This product is not classified as hazardous according to RID, ARD, ADNR, IMDG, IATA-DGR regulations.

SECTION 15 – REGULATORY INFORMATION

Not regulated.

SECTION 16 – OTHER INFORMATION

When installing or processing pavers, please take note of the following additional safety measures:

- Wear adequate work clothes.
- Wear knee protection.
- Wear safety shoes.
- Use appropriate lifting and transporting equipment.

NOTE: Hanover® Architectural Products believes that the information contained in this Safety Data Sheet is reliable, but they are given without warranty or guarantee of any kind. They are not necessarily all-inclusive or fully adequate in every circumstance and may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules, or insurance requirements.

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