



**ULTRA
STONES**
LUXURY SURFACES

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SAFETY DATA SHEET (SDS)

Porcelain Tiles/Slabs

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Prepared by: Ultra Stones LLC

Website: [Luxury Granite, Marble & Quartz Countertops - Ultra Stones](#)

1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: Porcelain Tiles/ Slabs

Brand: Kaolin and Atlas

Distributor: Ultra Stones LLC

Recommended Use: Flooring, wall cladding, countertops, facades, and decorative applications (interior and exterior)

Company Information:

Company Name: ULTRA STONES LLC

Address:

New York Showroom: 55 Central Drive, Farmingdale, NY 11735

Contact: 631-873-4747 / 631-873-4748

Pennsylvania Showroom: 3907 Nebraska St, Levittown, PA 19056

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Product Description

Porcelain Tiles and slabs are high-density, sintered ceramic surfaces manufactured from refined clay, silica sand, feldspar, and other naturally occurring mineral components. These materials are mixed with water, shaped under high pressure, and fired in kilns at temperatures exceeding 1100°C (2012°F), resulting in a vitrified, durable, and chemically stable product.

The finished tile is:

- Odorless
- Non-flammable
- Insoluble in water
- Chemically inert under normal conditions
- Structurally stable

Under normal handling and installed conditions, the product does not release hazardous substances and does not pose a health risk.

Uses Advised Against

Improper mechanical processing methods such as:

- Dry cutting
- Dry grinding
- Dry drilling
- Sanding without dust suppression

These activities may generate respirable crystalline silica (SiO₂) dust, which presents inhalation hazards.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Porcelain Tiles and slabs are manufactured from a blend of refined clays, silica sand, and other naturally occurring minerals that are combined with water, formed, and fired at high temperatures in a kiln to produce a dense, vitrified ceramic surface. The tiles are available in a variety of formats, dimensions, finishes, and colors. Under normal conditions of installation and use, the finished product does not release hazardous substances and is not classified as hazardous waste for disposal purposes, provided it has not been contaminated during use.

Typical Raw Material Composition (Before Firing)

Composition	CAS Number	Estimated % by Wt/Wt
Silica (Amorphous)	7631-86-9	70 - 80
Crystalline Silica (Quartz)	14808-60-7	10 - 15
Mullite	1302-93-8	2.5 - 5
Plagioclase (Feldspar)	68476-25-5	2.5 - 5
K-Feldspar	68476-25-5	1.5 - 4.5
Corundum	1302-74-5	0 - 0.5
Zirconium Silicate	10101-52-7	0 - 2.5

After high-temperature firing, minerals undergo structural transformation and partial vitrification. Crystalline silica remains present in bonded form within the ceramic matrix.

3. HAZARD(S) IDENTIFICATION

Important Note

The finished, kiln-fired tiles are odorless, chemically stable, and non-combustible, and they do not present an immediate health hazard under normal conditions of handling and use. However, respiratory protection may be required during installation activities such as cutting, grinding, drilling, or crushing if these operations generate airborne dust and particulate matter above permissible exposure limits.

Emergency Overview

DANGER

Lung Injury and Cancer Hazard (from respirable crystalline silica dust)

- Prolonged or repeated inhalation of respirable crystalline silica may cause serious lung damage (silicosis) and lung cancer.

Global Harmonized Standard Classification (GHS) of Respirable Crystalline Silica – Dust Form Only:

- Carcinogenicity – Category 1A (H350) may cause cancer.
- Specific Target Organ Toxicity, Single Exposure – Category 3 (Respiratory Tract Irritation) (H335)
- Specific Target Organ Toxicity, Repeated Exposure – Category 1 (Lungs) (H372)

GHS Label Elements

- Not applicable to intact, finished porcelain tiles and slabs.
- Wet cutting methods or the score-and-snap technique are strongly recommended during installation to minimize dust generation.
- Improper installation practices may result in the release and inhalation of respirable crystalline silica (SiO₂) dust.
- Do not dry cut or dry grind using power tools without adequate dust control measures.
- Dry cutting methods may significantly increase airborne silica concentrations and pose a risk of acute and chronic lung injury.
- If adequate ventilation or engineering controls cannot be maintained, use a properly fitted NIOSH-approved respirator or appropriate respiratory protection.

GHS Hazard Pictogram:



GHS07

GHS08

GHS Signal Word:

DANGER

GHS Hazard Statements:

- **H350:** May cause cancer by inhalation.
- **H335:** May cause respiratory irritation.
- **H372:** Causes damage to lungs through prolonged or repeated inhalation exposure.

GHS Precautionary Statements:

Prevention

- **P203:** Obtain, read, and follow all safety instructions before use.
- **P260/P261:** Do not breathe dust. Avoid generation of airborne particulates.
- **P264:** Wash hands and exposed skin thoroughly after handling.
- **P270:** Do not eat, drink, or smoke when working with this product.
- **P271:** Opt for only outdoors or in a well-ventilated area.
- **P280:** Wear appropriate protective gloves, protective clothing, eye protection, and respiratory protection when dust exposure may exceed permissible limits.

Other Hazards

- When ceramic materials are exposed to extremely high temperatures (above approximately 870°C / 1598°F), quartz may undergo a crystalline phase transformation to form tridymite. At temperatures above approximately 1470°C / 2678°F, cristobalite may form.
- Tridymite and cristobalite are crystalline silica polymorphs that are considered more fibrogenic and may present greater respiratory health risks than quartz if inhaled as respirable dust.
- Manufacturers or fabricators who crush, grind, or cut high-fired ceramic materials should be aware of the potential presence of tridymite and/or cristobalite in the dust generated during such operations.

4. FIRST AID MEASURES

These measures apply only if dust is generated during processing.

Inhalation

If dust is inhaled:

- Move the affected individual to fresh air immediately.
- Loosen tight clothing.
- Seek medical attention if coughing, wheezing, or breathing difficulty persists.
- In severe cases, administer oxygen if trained to do so.

Eye Contact

If dust enters eyes:

- Rinse cautiously with clean running water for at least 15 minutes.
- Remove contact lenses if present and easy to do.
- Seek medical attention if irritation continues.

Skin Contact

- Wash exposed skin with soap and water.
- Treat cuts from broken tile appropriately.
- Seek medical care if irritation develops.

5. FIRE-FIGHTING MEASURES

Flammability

Non-combustible and non-flammable.

Suitable Extinguishing Media

Use extinguishing media appropriate for surrounding materials (water spray, foam, CO₂, dry chemical).

Special Hazards

None known. The product does not contribute to fire or emit hazardous combustion gases.

6. ACCIDENTAL RELEASE MEASURES

For Broken Tiles

- **Collect mechanically:**
Gather broken or fragmented tiles using mechanical means such as shovels, brooms, or appropriate lifting equipment. Avoid direct hand contact with sharp edges whenever possible. Wear cut-resistant gloves to reduce the risk of lacerations during cleanup.
- **Avoid dropping from height to prevent further fragmentation:**
Handle broken pieces carefully and avoid dropping them from elevated surfaces, as impact may cause additional breakage and generate dust. Lower the materials in a controlled manner to minimize the release of fine particulates and reduce secondary hazards.

For Dust Release

- **Avoid dry sweeping:**
Do not use dry brooms or compressed air to clean dust, as these methods can disperse respirable crystalline silica into the air and significantly increase inhalation risk.
- **Use HEPA-filter vacuum systems:**
Clean dust using industrial vacuum systems equipped with High-Efficiency Particulate Air (HEPA) filters to effectively capture fine respirable particles and prevent re-aerosolization.
- **Use wet sweeping methods to minimize airborne particles:**
Lightly mist dust with water prior to cleanup and use wet sweeping or damp cloth methods to reduce airborne dispersion. Avoid excessive water runoff that could create slip hazards.
- **Personnel should wear appropriate respiratory protection if exposure exceeds limits:**
If airborne dust concentrations may exceed OSHA Permissible Exposure Limits (PEL), workers must wear properly fitted, NIOSH-approved respiratory protection in accordance with an established respiratory protection program (29 CFR 1910.134).

7. HANDLING AND STORAGE

Handling

- Wet cutting methods or the score-and-snap technique are strongly recommended during installation to minimize the generation of respirable crystalline silica dust.
- Improper installation practices, including uncontrolled cutting, grinding, or drilling, may result in airborne silica exposure.
- Do not dry cut or dry grind the product using power tools without effective dust control systems. Dry cutting can significantly increase airborne dust concentrations and may pose a risk of acute and chronic respiratory injury.
- If adequate natural or mechanical ventilation cannot be maintained, use appropriate respiratory protection, such as a properly fitted NIOSH-approved respirator.
- Clean accumulated dust using a HEPA-filtered vacuum system or damp sweeping methods. Avoid dry sweeping or the use of compressed air.
- Refer to Section 8 of this Safety Data Sheet for detailed personal protection recommendations during handling and cleanup operations.

Conditions for Safe Storage, Including Incompatibilities

- Store tiles and slabs in a dry, stable environment to prevent physical damage or breakage.
- Do not store near strong acids or acidic substances. Contact with certain acids may cause surface etching, discoloration, or deterioration of the tile finish.
- Protect packaging from moisture and impact during storage.
- Shelf life is improved when stored under normal warehouse conditions.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

The following occupational exposure limits apply to airborne dust that may be generated during cutting, grinding, drilling, crushing, or other mechanical processing of the product.

Occupational Exposure Limits

Component	OSHA PEL	OSHA AL	NIOSH REL	ACGIH TLV
Crystalline Silica (Quartz)	50 µg/m ³ (respirable)	25 µg/m ³	0.05 mg/m ³ (respirable)	0.025 mg/m ³ (respirable)
Clays (Kaolin/Ball Clay/Bentonite) – Respirable Fraction	5 mg/m ³	N.E.	5 mg/m ³	2 mg/m ³
Clays – Total Dust	15 mg/m ³	N.E.	10 mg/m ³	N.E.
Feldspar – Respirable Fraction	5 mg/m ³	N.E.	N.E.	N.E.
Feldspar – Total Dust	15 mg/m ³	N.E.	N.E.	N.E.

Legend

- PEL – Permissible Exposure Limit (OSHA)
- AL – Action Level (OSHA)
- REL – Recommended Exposure Limit (NIOSH)
- TLV – Threshold Limit Value (ACGIH)
- N.E. – Not Established
- Respirable Fraction – Airborne particles small enough to penetrate deep into the lungs
- Total Dust – Total airborne particulate concentration

Important Notes

- The OSHA Permissible Exposure Limit (PEL) for respirable crystalline silica is 50 µg/m³ as an 8-hour time-weighted average (TWA).
- The OSHA Action Level (AL) is 25 µg/m³ (8-hour TWA).
- Engineering controls such as wet cutting, local exhaust ventilation, and HEPA filtration should be implemented to maintain exposures below regulatory limits.
- Respiratory protection must be used if engineering controls are insufficient to maintain exposure below the applicable PEL, in accordance with OSHA 29 CFR 1910.134.

Exposure Controls

Wet Cutting Systems:

Use wet cutting methods whenever feasible to suppress dust at the source. Continuous water feed systems significantly reduce the generation of respirable crystalline silica by preventing dust from becoming airborne during cutting, grinding, or drilling operations.

Local Exhaust Ventilation (LEV):

Provide local exhaust ventilation equipped with appropriate dust collection systems at points where dust may be generated. Ventilation systems should be designed to capture airborne particulates at or near the source and discharge them safely in accordance with applicable regulations.

Enclosed Cutting Stations:

Utilize enclosed or partially enclosed cutting booths to contain dust within a controlled area. Enclosures should be used in combination with ventilation and filtration systems to further reduce worker exposure.

HEPA Vacuum Systems:

Use industrial vacuum systems equipped with High-Efficiency Particulate Air (HEPA) filters for cleanup and dust collection. HEPA systems effectively capture fine respirable particles and help prevent re-dispersion into the workplace atmosphere.

Engineering controls should be the primary means of exposure reduction. Respiratory protection should be used when engineering controls alone are insufficient to maintain airborne concentrations below occupational exposure limits.

Respiratory Protection

- If airborne dust concentrations exceed applicable OSHA Permissible Exposure Limits (PEL), wear a properly fitted, NIOSH-approved respirator rated N95 or higher, depending on measured exposure levels.
- Respirator selection must be based on workplace hazard assessment and exposure monitoring results.
- Fit testing, medical evaluation, and participation in a written respiratory protection program are required in accordance with OSHA 29 CFR 1910.134.

Eye Protection

- Wear safety glasses with side shields or chemical splash goggles during cutting, grinding, drilling, or handling operations where dust or flying particles may be generated.
- Avoid wearing contact lenses in dusty environments, as dust particles may become trapped and cause irritation.

Hand Protection

- Wear durable cotton, leather, or cut-resistant gloves when handling tiles, slabs, or broken pieces to reduce the risk of cuts, abrasions, and skin contact with dust.
- Select gloves appropriate for the task and inspect them regularly for damage.

Hygiene Measures

- Wash hands and exposed skin thoroughly with soap and water after handling materials and before eating, drinking, or using restroom facilities.
- Do not eat, drink, or smoke in areas where dust may be present.
- Remove dust-contaminated clothing promptly and launder before reuse to prevent secondary exposure.
- Maintain good housekeeping practices to prevent accumulation of dust in the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid, dense, vitrified ceramic material; brittle; available in various colors, finishes, sizes, and slab formats.
Odor:	Odorless.
Odor Threshold:	Not applicable.
pH:	Not applicable (solid article).
Melting Point:	Approximately 3110°F (1710°C) (primarily associated with silica content).
Freezing Point:	Not applicable.
Boiling Point:	Approximately 4046°F (2230°C) (based on silica composition).
Flash Point:	Not applicable (non-combustible solid).
Evaporation Rate (Ethyl Ether = 1):	Not applicable.

Flammability (Solid, Gas):	Non-flammable; non-combustible ceramic material.
Upper/Lower Flammability or Explosive Limits:	Not applicable.
Vapor Pressure:	Not applicable.
Vapor Density:	Not applicable.
Relative Density (Specific Gravity):	Approximately 2.2 – 2.5 (varies depending on formulation and manufacturing process).
Solubility in Water:	Insoluble.
Partition Coefficient (n-octanol/water):	Not applicable.
Auto-ignition Temperature:	Not applicable.
Decomposition Temperature:	Not applicable under normal conditions of use. Thermal decomposition may occur only at extreme temperatures significantly above normal service conditions.
Viscosity:	Not applicable (solid material).

10. STABILITY AND REACTIVITY

- Chemically stable under normal conditions.
- Avoid contact with strong acids (surface etching or discoloration may occur).
- No hazardous polymerization.
- No hazardous decomposition products under normal use.

11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Primary Routes of Exposure

- No exposure is expected from intact Porcelain Tiles and Slabs under normal handling and use conditions.
- Potential exposure may occur through inhalation of respirable dust generated during mechanical processing activities such as cutting, grinding, drilling, crushing, or demolition.

Acute Effects:

No acute health effects are expected from exposure to intact Porcelain Tiles and Slabs under normal handling and use. However, handling broken or cut tiles may result in lacerations to the hands or other exposed areas. Eye irritation may occur if dust is generated during high-dust activities such as dry cutting, drilling, grinding, or surface removal.

In rare instances, acute silicosis — a rapidly developing and severe form of nodular pulmonary fibrosis — may occur following short-term exposure to extremely high concentrations of respirable crystalline silica dust generated in poorly controlled environments. Symptoms may include shortness of breath, persistent coughing, and early fatigue. These symptoms are not specific and may also be associated with other respiratory conditions.

Chronic Effects:

No chronic health effects are anticipated from exposure to intact tiles.

Prolonged or repeated inhalation of respirable crystalline silica at or above established occupational exposure limits may lead to the development of chronic silicosis, a progressive and potentially disabling form of nodular pulmonary fibrosis (NPF). Chronic

silicosis has been associated with an increased risk of pulmonary tuberculosis, chronic bronchitis, emphysema, and other obstructive airway diseases.

Long-term exposure to elevated silica dust concentrations has also been linked in some studies to autoimmune disorders, chronic kidney disease, and other systemic health effects. Epidemiological evidence indicates that workers with sustained high exposure to respirable crystalline silica are at significantly increased risk of developing chronic silicosis.

Symptoms such as shortness of breath, reduced lung capacity, and persistent fatigue may indicate the presence of silicosis; however, these symptoms are not exclusive to silica-related disease and may occur in other medical conditions.

Carcinogenicity Status

Respirable crystalline silica (quartz), which may be generated during cutting, grinding, drilling, or other mechanical processing of Porcelain Tiles and Slabs, has been classified as follows:

- The **International Agency for Research on Cancer (IARC)** classifies respirable crystalline silica as **Group 1 – Carcinogenic to Humans**.
- The **National Toxicology Program (NTP)** lists respirable crystalline silica as “**Known to be a Human Carcinogen**.”
- The **Occupational Safety and Health Administration (OSHA)** includes crystalline silica on its Hazard Communication Standard carcinogen list (29 CFR 1910.1200).

These classifications apply to respirable crystalline silica dust and not to intact, finished porcelain tiles and slabs under normal conditions of use.

Acute Toxicity

N/A

12. ECOLOGICAL INFORMATION

- **Effects on Aquatic Life:** No additional relevant data are available. In its solid, inert form, the product is not expected to present a hazard to aquatic organisms.
- **Environmental Stability and Breakdown:** No additional relevant data are available. As a high-temperature-fired ceramic material, the product is stable and not expected to biodegrade under normal environmental conditions.
- **Potential for Bioaccumulation:** No additional relevant data are available. Being an inorganic and insoluble solid, the product is not expected to accumulate in living organisms.
- **Migration in Soil:** No additional relevant data are available. Due to its solid and insoluble properties, the material is expected to exhibit negligible mobility in soil.

13. DISPOSAL CONSIDERATIONS

- Dispose material waste in accordance with federal, state, and local regulations.
- Intact tile: Non-hazardous construction waste.
- Slurry and dust: Dispose per federal, state, and local environmental regulations.

14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

- **Proper Shipping Name:** Not regulated
- **Hazard Class:** Not applicable
- **Identification Number (UN/NA Number):** Not applicable
- **Packing Group:** Not applicable
- **Labels Required:** None

- **Placards Required:** None
- **Hazardous Substance / Reportable Quantity (RQ):** Not applicable
- **Shipping Description:** Porcelain Tiles / Slabs (Non-Hazardous Article)

Additional Transportation Information

- The product is not classified as dangerous goods under DOT, ADR/RID, ADN, IMDG, or IATA regulations.
- No special transport labeling, marking, or placarding is required.
- Material is considered non-hazardous for disposal purposes (Class III non-regulated material).
- Handle packages carefully to prevent breakage and generation of dust during transport.

15: REGULATORY INFORMATION

U.S. Federal Regulations

The components of Porcelain Tiles and Slabs have been previously introduced into U.S. commerce and are either listed on or exempt from the Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

This product, in its intact solid form, is classified as an article and is not subject to reporting requirements under TSCA when used as intended.

OSHA Hazard Communication Standard (29 CFR 1910.1200)

Under normal conditions of handling and use, intact Porcelain Tiles and Slabs do not meet the hazard classification criteria defined by OSHA's Hazard Communication Standard.

However, when mechanically processed (e.g., cutting, grinding, drilling, crushing), respirable crystalline silica dust may be generated. In dust form, the product may meet the following hazard classification:

- Health Hazard – Carcinogenicity (Crystalline Silica, Respirable Fraction)
- Specific Target Organ Toxicity – Repeated Exposure (Lungs)

The finished fired product itself is:

- Not combustible
- Not flammable
- Not explosive
- Not oxidizing
- Not pyrophoric
- Not water reactive
- Not an organic peroxide
- Not a compressed gas

State Right-to-Know Regulations

Respirable crystalline silica (quartz), which may be generated during mechanical processing, is listed as a hazardous or toxic substance under certain state right-to-know laws, including but not limited to:

- Massachusetts
- New Jersey
- Pennsylvania

Users should consult applicable state and local regulations for specific requirements.

California Proposition 65

Respirable crystalline silica is known to the State of California to cause cancer.

Important Note

The information provided in this Safety Data Sheet pertains primarily to potential hazards associated with respirable dust that may be generated during cutting, grinding, drilling, or otherwise altering the shape of the tile during installation or demolition. Intact Porcelain Tiles and Slabs do not present a health hazard under normal conditions of use.

16. OTHER INFORMATION

The information contained herein is provided in good faith and is believed to be accurate as of the date of preparation. The information is intended to comply with the requirements of OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

This Safety Data Sheet is intended to provide guidance regarding the safe handling, use, processing, storage, transportation, and disposal of Porcelain Tiles and Slabs. It does not constitute a warranty, expressed or implied, regarding product performance or suitability for a particular application.

Ultra Stones assumes no responsibility for injury to persons or damage to property resulting from misuse of the product, failure to follow recommended safety practices, or failure to comply with applicable laws and regulations.

Contact: info@ultrastones.com if you have any queries.

*Key Abbreviations and Acronyms

- ACGIH – American Conference of Governmental Industrial Hygienists
- AL – Action Level
- GHS – Globally Harmonized System
- HEPA – High-Efficiency Particulate Air
- 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
- PEL – Permissible Exposure Limit
- REL – Recommended Exposure Limit
- SDS – Safety Data Sheet
- STOT – Specific Target Organ Toxicity
- TLV – Threshold Limit Value
- TSCA – Toxic Substances Control Act
- TWA – Time-Weighted Average