

Safety Data Sheet
acc. to OSHA HCS

Date of issue: 05/19/2025

Rev. n. 3

Reviewed on 05/19/2025

1 Identification**· Product identifier****· Trade name:** **PORCELAIN TILES manufactured by Ceramiche Refin****· Other means of identification****· Application of the substance / the mixture / article**

Porcelain ceramic tiles for floors and walls.

Porcelain tiles are made from a blend of high-quality clays, silica sand, feldspar and other naturally occurring minerals, combined with water and fired at high temperatures in a kiln. The resulting tiles are odorless, stable, non-flammable, and do not present any immediate health risks.

Additionally, porcelain tiles are an environmentally friendly option compared to other flooring and wall covering materials, offering a more sustainable choice for construction projects.

This product is specifically designed for both construction and decorative applications, making it ideal for a variety of indoor and outdoor settings. Typical uses include floors, walls, kitchen and bathroom countertops, and similar installations

· Uses advised against

During installation, wet cutting or the score-and-snap method is strongly recommended. Improper installation techniques could expose installers to inhalation of harmful silica dust (SiO₂). Do not dry cut using power tools during the installation process. Using dry cutting methods could present a risk of acute lung injury. If adequate ventilation cannot be achieved, wear a mask or respirator.

· Details of the supplier of the safety data sheet**· Manufacturer/Supplier:**

Ceramiche Refin S.p.A.

via I Maggio, n.22. 42013 - Salvaterra di Casalgrande (RE) - Italy

Reference number: +39 0522 990499

· Information department:

Ceramiche Refin S.p.a.

E-mail: hse@refin.it**· Emergency telephone number:** Ceramiche Refin S.p.A.: +39 0522 990499*** 2 Hazard(s) identification****· Classification of the substance or mixture**

There is no proof or indication that the whole, finished product [definable as an "article" according to both 29 CFR 1910.1200 (Hazard Communication Standard)] has any risks according to Globally Harmonized System (GHS).

In the case of the breakage of the article or its processing, involving cutting, shaping, engraving or any other process which could lead to the release of dust traceable to the matrix of the article, it may generate crystalline silica powder (SiO₂) in the form of quartz.

The hazard assessment refers to this specific case. No acute or chronic effects are known from exposure to intact tiles.

Please see Section 3 for the crystalline silica content of the whole finished product.

Eye irritation 2A

H319 Causes serious eye irritation.

Carcinogenicity 1A

H350 May cause cancer.

Specific target organ toxicity (single exposure) 3

H335 May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) 1

H372 Causes damage to organs through prolonged or repeated exposure.

· Additional information:

The breathable fraction of crystalline silica (SiO₂) may lead to lung damage or illnesses, such as silicosis.

· Label elements**· GHS label elements**

Not applicable to intact tiles.

We recommend wet cutting or the score and snap method during the installation process. Improper installation techniques could expose installer to inhalation of harmful silica dust (SiO₂).

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Do not dry cut using power tools during the installation process. Using dry cutting methods could present a risk of acute lung injury. If adequate ventilation cannot be achieved, wear a mask or respirator.

Hazard pictograms



GHS07 GHS08

Signal word Danger

Hazard-determining components of labeling:

Quartz (SiO₂)

Feldspar

Hazard statements

Causes serious eye irritation.

May cause cancer.

May cause respiratory irritation.

Causes damage to organs through prolonged or repeated exposure.

Other hazards

If the product is dry cut/sanded or altered in such a way that excessive and/or significant particulates and/or dusts may be generated, exposure may aggravate pre-existing eye, skin, or respiratory conditions. We recommend wet cutting or the score and snap method during the installation process. Do not dry cut using power tools during the installation process. Improper installation techniques could expose installer to harmful silica dust. Contains crystalline silica (quartz). When exposed to high temperatures, free quartz can change crystal structure to form tridymite (above 870°C.) or cristobalite (above 1470°C.) which have greater health hazards than quartz due to their more fibrogenic characteristics. Manufacturers who crush, grind or cut ceramic bodies fired to high temperatures should recognize the possible presence of tridymite and/or cristobalite.

Tiles and boxes, if not grasped or handled correctly, can accidentally fall causing crushing of both hands and feet.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

Composition (%): The material is the result of high temperature sintering (between 1150 - 1250 °C) of various heavily compacted minerals in different proportions depending on the product.

Before sintering, the substances in the mixture are:

Components:

CAS: 68476-25-5	Feldspar	30-50%
CAS: 1332-58-7	Kaolin	25-50%
CAS: 14808-60-7	Quartz (SiO ₂)	10-30%
CAS: 14807-96-6	Talc (Mg ₃ H ₂ (SiO ₃) ₄)	0-6%

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Additional information:

After firing, the finished product includes mainly silica/quartz (5-30%), glass (50-70%), mullite (0-15%), feldspar (0-15%), small amounts of inorganic additives, as well as inorganic pigments.

4 First-aid measures**Description of first aid measures****General information:**

First Aid Measures are applicable only to the dust resulting from crushing, grinding or sawing of tiles. Intact tiles pose no eye or inhalation hazards.

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

After skin contact: If skin irritation continues, consult a doctor.**After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.**After swallowing:**

Rinse out mouth with water.
Do not induce vomiting.

Most important symptoms and effects, both acute and delayed

No acute effects are known from exposure to intact tiles. Working with broken or cut tile produces a potential for cuts to the hands and exposed body parts. Acute effects such as eye irritation may occur if associated with high dust operations such as dry cutting or drilling the tile or during the removal of tile surfaces. In very rare cases, symptoms of acute silicosis, a form of silicosis (a nodular pulmonary fibrosis) associated with exposure to respirable crystalline silica, may develop following acute exposure to extremely dusty environments caused by generation of tile dust. Signs such as labored breathing and early fatigue may indicate silicosis; however, these same symptoms can arise from many other causes.

No chronic effects are known from exposure to intact tiles. Long-term, continual exposure to respirable crystalline silica at or above allowable occupational exposure limits may lead to the development of silicosis, a nodular pulmonary fibrosis (NPF). NPFs are also associated with pulmonary tuberculosis, bronchitis, emphysema, and other airway diseases. This type of chronic exposure to silica dust may also result in the development of autoimmune disorders, chronic renal disease, and other adverse health effects. Recent epidemiologic studies demonstrate that workers exposed to elevated silica concentrations have a significant risk of developing chronic silicosis. Signs such as labored breathing and early fatigue may indicate silicosis; however, these same symptoms can also arise from many other causes.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures**Extinguishing media****Suitable extinguishing agents:**

Use fire fighting measures that suit the environment.
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture No further relevant information available.**Advice for firefighters**

Protective equipment: No special measures required.

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· **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures· **Personal precautions, protective equipment and emergency procedures** Avoid creating dust wherever possible.· **Environmental precautions:**

Clean up and collect spilled material. Avoid breathing particulates.

If particulates are involved, evacuate the area of unprotected personnel during cleanup and wear an appropriate respirator.

· **Methods and material for containment and cleaning up:**

Use wet sweeping compound or water to minimize particulates.

Pick up mechanically.

· **Protective Action Criteria for Chemicals**· **PAC-1:**CAS: 14808-60-7 Quartz (SiO₂)0.075 mg/m³· **PAC-2:**CAS: 14808-60-7 Quartz (SiO₂)8.3 mg/m³· **PAC-3:**CAS: 14808-60-7 Quartz (SiO₂)50 mg/m³· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage· **Precautions for safe handling**

When cutting, grinding or removing, use equipment with integral dust collection and use local exhaust ventilation. Use wet cutting methods to reduce generation of dust.

Tiles and boxes, if not grasped or handled correctly, can accidentally fall causing crushing of both hands and feet.

· **Information about protection against explosions and fires:** The product is not flammable.· **Conditions for safe storage, including any incompatibilities**· **Storage:**· **Requirements to be met by storerooms and receptacles:** Store in clean and dry conditions· **Information about storage in one common storage facility:** Do not store together with acids.· **Further information about storage conditions:** None.· **Specific end use(s)** No further relevant information available.**8 Exposure controls/personal protection**· **Control parameters**· **Components with limit values that require monitoring at the workplace:**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

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CAS: 1332-58-7 Kaolin	
PEL	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV	Long-term value: 2* mg/m ³ E; respirable particulate matter, A4
CAS: 14808-60-7 Quartz (SiO₂)	
PEL	Long-term value: 0.05* mg/m ³ *resp. dust; 30mg/m ³ /%SiO ₂ +2
REL	Long-term value: 0.05* mg/m ³ *respirable dust; See Pocket Guide App. A
TLV	Long-term value: 0.025* mg/m ³ *respirable particulate matter, A2
CAS: 14807-96-6 Talc (Mg₃H₂(SiO₃)₄)	
PEL	Long-term value: 20 mppcf ppm (containing <1% Quartz)
REL	Long-term value: 2* mg/m ³ *respirable dust; and <1% Quartz
TLV	Long-term value: 2* mg/m ³ *no asbestos fibers, resp. particulate matter, E, A4

Regulatory information

PEL: Guide to Occupational Exposure Values (OSHA PELs)
REL: Guide to Occupational Exposure Values (NIOSH RELs)
TLV: Guide to Occupational Exposure Values (TLV)

· **Additional information:** The lists that were valid during the creation were used as basis.

Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Avoid creating airborne dust while working

Do not eat or drink while working.

Wash hands before breaks and at the end of work.

Keep away from tobacco products.

Immediately remove all soiled and contaminated clothing.

Always provide effective general and, when necessary, local exhaust ventilation to draw dust away from workers to prevent routine inhalation.

Ventilation must be adequate to maintain the ambient workplace atmosphere below the permissible exposure limits.

Avoid contact with the eyes and skin.

· **Breathing equipment:**



In case of insufficient ventilation or risk of inhaling dust, it is necessary to use a face mask with a dust filter (at least FFP2).

· **Protection of hands:**



Cotton or leather work gloves should be worn when cutting this product to minimize skin exposure to dust and/or cuts.

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· Eye protection:



Use dust-proof goggles or safety glasses with side shields. Contact lenses may absorb irritants. Do not wear contact lenses in work areas.

· Body protection: Protective work clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Physical state	Solid
· Color:	Different according to coloring
· Odor:	Odorless
· Odor threshold:	Not determined.
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	≥ 2200 °C (≥ 3,992 °F) (≥3992 °F)
· Flammability:	Non-flammable mixture
· Explosion limits:	
· Lower:	Not applicable.
· Upper:	Not applicable.
· Flash point:	Not applicable.
· Decomposition temperature:	Not applicable.
· pH-value:	Not applicable.
	Mixture is non-soluble (in water).
· Viscosity:	
· Kinematic:	Not applicable.
· Dynamic:	Not applicable.
· Solubility in / Miscibility with	
· Water:	Insoluble.
· Partition coefficient (n-octanol/water):	Not applicable.
· Vapor pressure:	Not applicable.
· Vapor pressure:	
· Density at 20 °C (68 °F):	2.4-2.7 g/cm ³ (20.028-22.532 lbs/gal) (20.028-22.532 lbs/gal)
· Vapor density	Not applicable.
· Particle characteristics	Not determined.

· Other information

· Appearance:	
· Form:	Solid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Solvent content:	
· VOC content:	0.00 %
· Change in condition	
· Evaporation rate	Not applicable.

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10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Protect from heat and direct sunlight.
- **Incompatible materials:** Keep away from: strong acids, strong bases and oxidation agents.
- **Hazardous decomposition products:** No dangerous decomposition products known.

*11 Toxicological information

- **Information on toxicological effects** Potential Health Effects: none for intact tile.
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
CAS: 14808-60-7 Quartz (SiO₂)		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)

- **Primary irritant effect:**
Symptoms/Injuries After Inhalation: for particulates or dust from processing: irritation of the respiratory tract and the other mucous membranes. Cough, dyspnea (breathing difficulty), wheezing; decreased pulmonary function, progressive respiratory symptoms (silicosis). The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels.
- **on the skin:**
Symptoms/Injuries After Skin Contact: for particulates or dust from processing: exposure may cause skin irritation. Direct contact may cause irritation by mechanical abrasion.
- **on the eye:**
Symptoms/Injuries After Eye Contact: for particulates or dust from processing: may cause slight irritation to eyes. Contact may cause irritation due to mechanical abrasion.
- **Carcinogenicity**
Respirable Crystalline Silica (RCS)
Respirable crystalline silica is classified by the International Agency for Research on Cancer (IARC) as a Group I Carcinogen (carcinogenic to humans). The National Toxicology Program lists respirable crystalline silica as "Known to be a Human Carcinogen". USDOL/OSHA and NIOSH regulated crystalline silica as carcinogenic.

· **Additional toxicological information:**

Exposure to respirable crystalline quartz may cause delayed (chronic) lung injury - silicosis. Acute or rapidly developing silicosis may occur in a short period of time in heavy exposure. Silicosis is a form of disabling pulmonary fibrosis which can be progressive and may lead to death.

Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica.

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
CAS: 14808-60-7	Quartz (SiO ₂)	1

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CAS: 14807-96-6	Talc ($Mg_3H_2(SiO_3)_4$)	2A
· NTP (National Toxicology Program)		
CAS: 14808-60-7	Quartz (SiO_2)	K
· OSHA-Ca (Occupational Safety & Health Administration)		
None of the ingredients is listed.		

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects**
- **Additional ecological information:**
- **General notes:**
- Water hazard class 1 (Self-assessment): slightly hazardous for water
- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Disposal must be made according to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	
· DOT, ADR/RID/ADN, IMDG, IATA	Void
· UN proper shipping name	
· DOT, ADR/RID/ADN, IMDG, IATA	Void
· Transport hazard class(es)	
· DOT, ADR/RID/ADN, ADN, IMDG, IATA	
· Class	Void
· Packing group	
· DOT, ADR/RID/ADN, IMDG, IATA	Void
· Environmental hazards:	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

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· Transport/Additional information:	Not dangerous according to the above specifications.
· Special precautions for user	Not applicable.
· UN "Model Regulation":	Void

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed or exempt.

CAS: 68476-25-5	Feldspar	ACTIVE
CAS: 1332-58-7	Kaolin	ACTIVE
CAS: 14808-60-7	Quartz (SiO ₂)	ACTIVE
CAS: 14807-96-6	Talc (Mg ₃ H ₂ (SiO ₃) ₄)	ACTIVE

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 14808-60-7 Quartz (SiO₂)

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

CAS: 1332-58-7	Kaolin	A4
CAS: 14808-60-7	Quartz (SiO ₂)	A2
CAS: 14807-96-6	Talc (Mg ₃ H ₂ (SiO ₃) ₄)	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

CAS: 14808-60-7 Quartz (SiO₂)

*16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

The information contained within this Safety Data Sheet is believed to be accurate and have been compiled from sources believed to be reliable. It is offered for consideration, investigation and verification. It is the users

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responsability to follow the guidelines as outlined within this SDS. The user assumes all risk of use, storage and handling in compliance with applicable laws and regulations.

For more information, contact 'hse@refin.it' and follow the instructions in the guide for the processing of material available on website www.refin.it.

· **Version number of previous version: 2**

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· **Abbreviations and acronyms:**

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals

CLP: Classification, Labelling and Packaging

TLV: Threshold Limit Value

TLV-TWA: Threshold Limit Value - Time Weighted Average

TLV-STEL: Threshold Limit Value - Short Term Exposure Limit

PEL: Permissible Exposure Limits (Limiti di esposizione consentiti)

REL: Recommended Exposure Limits (Limiti di esposizione raccomandati)

IOELV: Indicative Occupational Exposure Limit Value

WEELs: Workplace Environmental Exposure Limits (Limiti di esposizione ambientale sul posto di lavoro)

BEI: Biological Exposure Indices

LC50: Lethal Concentration, 50 percent

EC50: Effective Concentration, 50 percent

ErC50: Effective Concentration, 50 percent, reduction of growth rate

LL50: Lethal Loading, 50 percent

EL50: Effective Loading, 50 percent

NOEC: No-Observed Effect Concentration

NOELR: No Observed Effect Loading Rate

Kow: Octanol-Water partition coefficient

BCF: BioConcentration Factor

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

WGK: Wassergefährdungsklasse - Water hazard class, Germany

Eye irritation 2A: Serious eye damage/eye irritation – Category 2A

Carcinogenicity 1A: Carcinogenicity – Category 1A

Specific target organ toxicity (single exposure) 3: Specific target organ toxicity (single exposure) – Category 3

Specific target organ toxicity (repeated exposure) 1: Specific target organ toxicity (repeated exposure) – Category 1

· *** Data compared to the previous version altered.**