ATTILA

**SAFETY DATA SHEET**

# NATURAL STONE - QUARTZITE

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## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product Identifier

**Product Name:** NATURAL STONE - QUARTZITE
**Country of Origin:** Brazil, India, Norway, USA, Canada, South Africa
**Synonyms:** Metamorphic quartzite, recrystallized sandstone, silicified sandstone, orthoquartzite

### 1.2 Uses and Uses Advised Against

Natural quartzite is used for benchtops, flooring, wall cladding, exterior facades, pool coping, and high-durability applications. Excellent for kitchen countertops due to exceptional hardness and heat resistance. Suitable for both interior and exterior use in demanding environments. Not recommended for applications requiring workability or easy modification due to extreme hardness.

### 1.3 Emergency Telephone Numbers

**Emergency:** 13 11 26 (Poisons Information Centre)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the Substance or Mixture

**CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA**

The solid quartzite product as supplied is classified as non-hazardous under normal conditions. However, dust created when the product is cut, ground, or machined may contain crystalline silica (typically 80-99% in quartzite) and cause mechanical irritation. Repeated exposure to respirable crystalline silica dust may cause lung fibrosis (silicosis). Quartzite presents the highest silica exposure risk of all natural stones.

**Physical Hazards:** Not classified as a Physical Hazard
**Health Hazards:** Carcinogenicity: Category 1A (when dust is generated)
**Environmental Hazards:** Not classified as an Environmental Hazard

### 2.2 GHS Label Elements

**Signal Word:** DANGER
**Hazard Statements:** H350i May cause cancer by inhalation
**Pictograms:** [Health Hazard Symbol]

**Prevention Statements:**

- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood
- P280 Wear protective gloves/protective clothing/eye protection/face protection

**Response Statements:**

- P308 + P313 IF exposed or concerned: Get medical advice/attention

**Storage Statements:**

- P405 Store locked up

**Disposal Statements:**

- P501 Dispose of contents/container in accordance with relevant regulations

### 2.3 Other Hazards

Quartzite is chemically inert and highly resistant to acids, alkalis, and weathering. Extreme hardness makes cutting and fabrication challenging, increasing dust generation risk. Heavy slabs present significant manual handling hazards. Sharp edges may cause cuts during handling.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances/Mixtures

| Ingredient | CAS Number | EC Number | Content (w/w) |
|---|---|---|---|
| QUARTZ (CRYSTALLINE SILICA) | 14808-60-7 | 238-878-4 | 80-99% |
| SILICA ($SiO_2$) TOTAL | 7631-86-9 | 231-545-4 | 85-99% |
| FELDSPAR | 68476-25-5 | 270-666-7 | 0-10% |
| MICA | 12001-26-2 | 310-127-6 | 0-5% |
| IRON OXIDES ($Fe_2O_3$) | 1309-37-1 | 215-168-2 | 0-3% |
| ALUMINIUM OXIDE ($Al_2O_3$) | 1344-28-1 | 215-691-6 | 0-3% |
| CALCIUM OXIDE (CaO) | 1305-78-8 | 215-138-9 | 0-2% |
| MAGNESIUM OXIDE (MgO) | 1309-48-4 | 215-171-9 | 0-1% |
| TRACE MINERALS | Various | Various | 0-2% |

**Ingredient Notes:** Quartzite is primarily recrystallized quartz with minimal other minerals. Represents the highest crystalline silica content of all natural stones, creating maximum occupational health risk during fabrication.

## 4. FIRST AID MEASURES

### 4.1 Description of First Aid Measures

**Eye (Dust exposure):** Flush gently with running water for at least 15 minutes, irrigating under eyelids. Remove contact lenses if present and easily removable. Seek medical attention if irritation persists.

**Cuts (Sharp edges):** Control bleeding with direct pressure. Clean wound thoroughly and apply sterile dressing. Seek medical attention for deep cuts or if quartz particles remain in wound.

**Inhalation (Dust exposure):** Remove from contaminated area to fresh air immediately. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek immediate medical attention due to very high silica exposure risk.

**Skin (Dust exposure):** Remove contaminated clothing. Wash skin thoroughly with soap and water. Seek medical attention if irritation develops or persists.

**Ingestion:** Due to product form and application, ingestion is considered unlikely. If ingested, do not induce vomiting. Rinse mouth with water and seek medical advice.

### 4.2 Most Important Symptoms and Effects

Primary hazard is from dust generation during cutting, grinding, or polishing operations. Symptoms may include severe respiratory irritation, coughing, and potential long-term lung effects from silica exposure. Extreme silica content (80-99%) creates maximum health risk of all natural stones.

### 4.3 Immediate Medical Attention and Special Treatment Needed

Treat symptomatically. Inform medical personnel of potential very high crystalline silica dust exposure and quartzite composition. Immediate medical evaluation recommended for any significant dust exposure.

**First Aid Facilities:** Eye wash stations, emergency showers, and comprehensive first aid supplies must be available in all work areas where quartzite dust generation is possible.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing Media

**Suitable:** Use extinguishing media appropriate for surrounding fire.
**Unsuitable:** None known.

### 5.2 Special Hazards Arising from the Substance

Non-combustible. Chemically inert under fire conditions. No toxic gases produced under normal fire conditions. May crack due to thermal expansion at very high temperatures.

### 5.3 Advice for Firefighters

No special fire fighting procedures required. Wear standard firefighting protective equipment. Be aware that quartzite surfaces may retain heat for extended periods due to high thermal mass.

### 5.4 Hazchem Code

None allocated.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Wear maximum level PPE as outlined in Section 8. Ensure excellent ventilation. Strictly avoid generating dust clouds. Use highest level respiratory protection due to extreme silica content. Evacuate area if significant dust cloud generated.

### 6.2 Environmental Precautions

Prevent material from entering drains, waterways, or soil. Quartzite is not environmentally hazardous and is chemically inert.

### 6.3 Methods of Cleaning Up

**Large pieces:** Collect manually with appropriate lifting equipment. Use mechanical aids for heavy pieces.
**Dust/Small pieces:** Use HEPA vacuum or wet sweeping methods only. Never dry sweep quartzite dust. Maximum dust control essential due to extreme silica content. Dispose of waste according to local regulations with special handling for high-silica waste.

### 6.4 Reference to Other Sections

See Sections 8 and 13 for exposure controls and disposal requirements.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for Safe Handling

Use appropriate manual handling techniques for heavy slabs. Ensure excellent ventilation when cutting or grinding. Wet cutting methods absolutely mandatory - never dry cut quartzite. Wear maximum level PPE during fabrication. Extreme dust control critical due to very high silica content. Consider specialized fabrication facilities with enhanced controls.

### 7.2 Conditions for Safe Storage

Store in dry, well-ventilated areas. Protect from impact. Store slabs vertically in appropriate racking systems with maximum support due to weight and brittleness. Ensure structural adequacy of storage systems.

### 7.3 Specific End Uses

Premium kitchen and bathroom countertops, high-end flooring, exterior facades, pool coping, monuments, and ultra-high-durability architectural applications.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control Parameters

**Exposure Standards:**

| Ingredient | Reference | TWA (mg/m³) | STEL (mg/m³) |
|---|---|---|---|
| Quartz (respirable dust) | SWA [AUS] | 0.05 | - |
| Silica (total dust) | SWA [AUS] | 10 | - |

### 8.2 Exposure Controls

**Engineering Controls:** Maximum level local exhaust ventilation mandatory during all cutting/grinding operations. Wet cutting methods absolutely required. Ensure excellent general ventilation. Specialized dust control systems essential due to extreme silica content. Consider enclosed fabrication areas with negative pressure.

**Personal Protective Equipment:**

- **Respiratory:** P3 particulate respirator minimum when any dust generation is possible; powered air-purifying respirator (PAPR) strongly recommended for extended operations
- **Eye/Face:** Safety glasses with side shields mandatory; full face dust goggles during cutting operations
- **Hands:** Cut-resistant gloves for handling; chemical-resistant gloves if using cutting lubricants/coolants
- **Body:** Long-sleeved shirts and long pants minimum; full protective coveralls mandatory during dusty operations
- **Feet:** Safety boots with slip-resistant soles

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical and Chemical Properties

| Property | Value |
|---|---|
| Appearance | Fine to medium-grained metamorphic rock, various colors |
| Odour | Odourless |
| Density | 2.6-2.7 g/cm³ |
| Hardness (Mohs) | 7-8 |
| Porosity | 0.1-2% |
| pH | 6-7 (neutral) |
| Solubility | Insoluble in water and most acids |
| Melting Point | 1670-1710°C |
| Thermal Conductivity | 3.0-6.0 W/m·K |
| Compressive Strength | 150-400 MPa |
| Flexural Strength | 15-40 MPa |
| Thermal Expansion | 8-12 × $10^{-6}$ /°C |
| Abrasion Resistance | Excellent |

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Chemically inert under normal conditions. Highly resistant to acids, alkalis, and all common chemicals.

### 10.2 Chemical Stability

Extremely stable under normal conditions. Outstanding resistance to weathering and chemical degradation.

### 10.3 Possibility of Hazardous Reactions

**Hydrofluoric Acid:** May react very slowly with concentrated HF. No other significant chemical reactions under any normal conditions.

### 10.4 Conditions to Avoid

Minimize dust generation during processing. Avoid extreme thermal shock which may cause cracking due to brittleness.

### 10.5 Incompatible Materials

Hydrofluoric acid and HF-containing compounds only.

### 10.6 Hazardous Decomposition Products

Silica vapors at extremely high temperatures (>1600°C).

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects

**Acute Toxicity:** Low toxicity for solid material. Pure silicate minerals have low acute toxicity.

**Skin Contact:** May cause mechanical irritation from dust. Not a skin sensitizer.

**Eye Contact:** Dust may cause severe mechanical irritation due to hardness. Not corrosive.

**Inhalation:** Dust may cause severe respiratory tract irritation. Maximum concern due to extreme crystalline silica content (80-99%) - highest risk of all natural stones.

**Ingestion:** Large amounts may cause gastrointestinal discomfort. Not expected to be toxic.

**Carcinogenicity:** Crystalline silica component is classified as Group 1 carcinogen by IARC. Quartzite presents maximum carcinogenic risk due to very high silica content.

**Chronic Effects:** Prolonged inhalation of respirable dust will likely cause silicosis. Maximum risk due to extreme silica content - fastest progression to disease of all natural stones.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Not expected to be toxic to aquatic or terrestrial organisms.

### 12.2 Persistence and Degradability

Highly persistent in environment. Extremely resistant to all forms of weathering.

### 12.3 Bioaccumulative Potential

No bioaccumulation expected.

### 12.4 Mobility in Soil

Very low mobility due to complete insolubility and stability.

### 12.5 Other Adverse Effects

No adverse environmental effects expected.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

**Reuse:** Preferred option - excellent for reclamation in high-end construction and landscaping applications.
**Recycling:** Can be crushed for premium aggregate applications, high-grade concrete, and specialty construction uses.
**Disposal:** Non-hazardous waste but requires special handling due to high silica content. Dispose at licensed facilities with dust control measures.

## 14. TRANSPORT INFORMATION

**NOT CLASSIFIED AS DANGEROUS GOODS**

No special transport requirements. Secure loads properly to prevent shifting during transport. Consider weight distribution due to density and potential for breakage.

## 15. REGULATORY INFORMATION

### 15.1 Regulatory Status

**AIIC:** All components listed on Australian Inventory of Industrial Chemicals.
**SUSMP:** No poison schedule assigned.
**Work Health and Safety:** Strict compliance with WHS regulations for respirable crystalline silica mandatory. Maximum level controls required due to extreme silica content (80-99%).

## 16. OTHER INFORMATION

**Revision Information**

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**Date of Preparation:** 18.07.25
**Prepared by:** Attila's Natural Stone and Tiles Pty Ltd
**Revision:** 1

**Additional Information**

This SDS applies to natural quartzite products from various global sources. Composition is relatively consistent globally due to metamorphic origin. Maximum level dust control measures mandatory during all fabrication due to extreme crystalline silica content.

**CRITICAL SAFETY WARNINGS:**

- **HIGHEST HEALTH RISK**: Quartzite contains 80-99% crystalline silica - the highest of any natural stone
- **MANDATORY WET CUTTING**: Never dry cut quartzite under any circumstances
- **MAXIMUM RESPIRATORY PROTECTION**: P3 minimum, PAPR strongly recommended
- **SPECIALIZED FACILITIES**: Consider dedicated fabrication areas with enhanced controls
- **IMMEDIATE MEDICAL ATTENTION**: Required for any significant dust exposure incidents

**Fabrication Considerations:**

- Extremely difficult to cut and shape due to hardness
- Requires diamond tooling and specialized equipment
- Generates significant amounts of very hazardous dust
- May require specialized fabrication contractors with appropriate facilities

**Health Risk Comparison:** Quartzite presents the highest occupational health risk of all natural stone products due to its extreme crystalline silica content approaching 99% in some varieties.

**Emergency Contact:** 13 11 26 (Poisons Information Centre)