MATERIALS SAFETY DATA SHEET

Granite

Section 1 — PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Natural Stone- Granite
Recommended Use:	Architectural & building applications
	i.e. benchtops, tiles, wall cladding.
Details of Manufacturer/Importer:	APEX STONE PTY LTD
	71 Dohertys Rd, Laverton North, VIC, 3026
	apexstone.com.au
	info@apexstone.com.au
	(03) 9360 0133
Emergency Number:	Poisons Information Centre
	13 11 26
Avoidance:	Do not subject the product to dry processes which may generate large amount of fine dust.

Section 2 — HAZARD IDENTIFICATION

The finished stone product poses no health hazard. However, dust derived from fabrication and decorative carving and sculpting (including crushing, cutting, grinding, chipping sanding, drilling, polishing, sweeping/cleaning etc.) generates fine dust which can cause eye, skin and/or respiratory irritation. Natural stone contains variable amounts of respirable crystalline silica (microcrystalline silica). Therefore, workers who are involved in the above processes may be at risk of crystalline silica exposure, which can result in the loss of respiratory functions and severe pulmonary damages. Personnel undertaking such work must consider the following health and safety information and take necessary precautions before the commencement of such work.

PLEASE READ CAREFULLY

DANGER![1]

GHS08 (Health Hazard)
Category 1A (Carcinogenicity) (H350, H372)

GHS07 (Health Hazard)
Category 3 (Respiratory tract irritation) (H319, H335)

[1] Work Health and Safety Regulations: Classification and Labelling for Workplace Hazardous Chemical, Safe Work Australia

HAZARD STATEMENTS:[2]

H350: May cause CANCER (inhalation)

H372: Causes damage to organ (lungs) through prolonged and repeated exposure if inhaled

H319: May cause eye irritation

H335: May cause respiratory tract irritation

PREVENTIONS STATEMENTS:[3]



P202: Do not handle until all safety precautions have been read and understood

P260: Do not breathe in dust particles generated during processing, working and cleaning

P264: Wash face and hands thoroughly after handling

P270: Do not eat, drink or smoke when using this product

P284: Wear respiratory protection for particles (P3 filters)

Refer to Section 7 for safe handling and storage, and, to Section 8 for dust exposure controls

FIRST AID MEASURES:

P314: Get medical advice/attention if you feel unwell after working with the product

POTENTIAL HEALTH EFFECTS:[4]

Inhalation: Do not inhale dust.

Workers who have been repeatedly exposed to microcrystalline silica particles are at risk of developing silicosis – an incurable, progressive and degenerating disease which may cause severe inflammation and scaring of the lungs that can lead to permanent lung damage. Respirable fine silica particles, when inhaled into airways, become trapped in lung tissue and block small air sacs (alveoli) where gas exchange occurs, reducing the lungs' ability to take in oxygen and causing irreversible lung injuries. In addition, lung cells engulfed with silica particles may also leave lung tissue and enter the blood stream to different parts of the body, creating other health hazards. Several studies also indicated links between prolonged exposure to respirable silica and the development of chronic obstructive pulmonary disease, renal (kidney) disease and auto immune disorder.

The condition where damage is caused by respirable silica to lung tissue causing it to scar and alter normal functions, is known as **Silicosis**. Its symptoms, depending on the severity of the damage, include shortness of breath, persistent cough, chest pain, respiratory failure and may eventually lead to death.

[2] Globally Harmonized System of Classification and Labelling of Chemicals (GHS)-Safe Work Australia
[3] Precautionary Statements – Globally Harmonized System of Classification and Labelling of Chemicals, Safe Work Australia
[4] Silicosis Fact Sheet – Lung Foundation Australia, and, Crystalline Silica Fact Sheet – Safe Work Australia

Skin and Eye Contact:

Mineral dust contact may cause temporary irritation to skin such as redness and itching, and, can cause eye irritation with symptoms of burning, redness and tearing.

Aggravation of Pre-existing conditions:

Workers with pre-existing respiratory or skin/eye disorders may be more susceptible to the effects of this product during processing work. Pre-existing conditions such as asthma, emphysema, tuberculosis and other skin/eye allergies or diseases may be adversely aggravated where airborne silica particles are produced.

RESPONSE STATEMENTS:

P304+P340: IF INHALED: Move person to fresh air and keep comfortable for breathing.

P302+P350: IF ON SKIN: Wash with plenty of soap and water.

P333+P313: IF SKIN IRRITATION/RASH OCCURS: Seek medical advice/attention.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes, remove contact lenses if present and easy to do. Continue rinsing.

DISPOSAL STATEMENTS:

P501: Dispose of products and by products according to local, regional, national and international regulations

Section 3 — COMPOSITION AND INFORMATION

Natural stone may contain crystalline silica (SiO2) in the form of quartz which can become respirable airborne silica while being processed. Respirable silica particles are hazardous to human health and proper precautions are needed before the commencement of working with the product. Refer to Section 2 and Section 8 for further information. Typical percentage concentration estimations listed below are taken from Safe Work Australia website[5].

Ingredient	Formula	CAS Number	%	Concentration estimated mean
Quartz **(crystalline silica)**	SiO_2	14808-60-7		20-45% (typically 30)
Other	Unknown	Unknown		80-55%

GRANITES EXAMPLES	QUARTZ (CRYSTALLINE SILCA) CONTENT (W/W) %
ATLANTIC STONE	29
BLACK FOREST	26
COLONIAL WHITE	20
GREY FANTASY	32
JET BLACK	<1
PATAGONIA	<1
PINK PATAGONIA	23
STEEL GREY	7
TITANIUM	23
VISCOUNT WHITE	27
WHITE ICE	30

Note: The above values are indicative only. Natural stone slabs and blocks are unique and silica content can vary depending on the sample analysed. These values are to be used as a guide only.

Section 4 — FIRST AID MEASURES

[5] https://www.safeworkaustralia.gov.au/safety-topic/hazards/crystalline-silica-and-silicosis

Natural stone slabs and tiles in their normal state exert minimal health hazards. However, harmful silica particles may be produced during processing activities. The following necessary first aid measures must be observed in the event of any incident/accident.

Eyes	Immediately flush with plenty of water for at least 15 minutes. Hold eyelids apart. Remove contact lens if present and easy to do. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Seek medical attention if irritation develops or persists.
Skin	Wash off with soap and water. Seek medical attention if irritation develops and persists.
Inhalation	Move person to fresh air. Call a physician if symptoms develop or breathing stops.
Ingestion	Rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical attention.
Notes	Provide general supportive measures and treat symptomatically. Keep victim under observation as symptoms may be delayed. Ensure that medical personnel and first aiders are aware of the materials involved and take appropriate precautions to protect themselves. Pre-existing medical conditions may be aggravated by the exposure. Personnel with eye, skin and lung conditions, as well as tobacco smoking should avoid further exposure.

Section 5 — FIREFIGHTING MEASURES

Suitable Extinguishing Media	Non-combustible, non-flammable material, use fire extinguishing media appropriate for surrounding materials.
Special Protective Equipment	Use appropriate protective equipment for surrounding materials. No specific precautions noted as the product is an inert material.
General Information	No unusual fire or explosion hazards.

Section 6 — ACCIDENTAL RELEASE MEASURES

This product does not represent a risk of spillage

CLEAN UP AND DISPOSAL

Solid Slabs:	Can be disposed in accordance with local/state/federal regulations
Dust:	When a large amount of dust is generated, clean-up personnel may be exposed to respirable crystalline silica-containing dust. Wear appropriate protective clothing and equipment (e.g. dust-proof goggles, rubber gloves, Class P3 respirator, coveralls and rubber boots). Do not dry sweep or use compressed air for dust clean-up. Misting of spilled material and collect it in sealable containers for disposal. Do not discharge fine particulates into drains or waterways.

Section 7 — HANDLING AND STORAGE

Storage:	Avoid dust formation and accumulation. Store in ventilated area.
Handling:	Do not handle until all safety precautions have been read and understood. Stone blocks/slabs are very heavy, use safe lifting methods and equipment to avoid injuries. Keep airborne dust formation to a minimum and provide proper exhaust and ventilation at places where dust may be generated. Wear appropriate personal protective equipment. Do not breathe dust and avoid prolonged exposure.
Hygiene:	Observe good personal/industrial hygiene practices, including removing and washing dusty clothing immediately after use, washing hands before eating, prohibit eating, drinking and smoking in contaminated areas.

Section 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Guideline: Permissible Exposure Limit (PEL), PEL regulations vary in different country, check PEL in country of use.

There is no PEL associated with the finished natural stone product in the Workplace Exposure Standard for Airborne Contaminants, Safe Work Australia (1/10/2022).

However, dust containing respirable crystalline silica (SiO2) and other minerals (such as various clay / mica minerals and calcium carbonate) may be generated during processing of the product.

Exposure Standards:		WES/TWA
	Respirable Crystalline Silica (Quartz – 14808-60-7):	0.05mg/m^3
	Mica	2.5mg/m^3

Abbreviations:
WES: Work Exposure Standards
TWA: Time Weighted Average - 8-hour time weighted average: the maximum average of an airborne concentration of a substance when calculated over an 8-hour working day, for a 5-day working week.

Employers should consult a qualified occupational safety and health professional (e.g. Certified Occupational Hygienist) to perform air monitoring in the workplace to determine the airborne concentrations of various contaminants.

Details in Exposure Control, Environmental/Health Monitoring and Personal Protective Measures can be found in the "Working with Silica and Silica Containing Products" – National Guidance Material, 18th February 2022, Safe Work Australia.

Section 9 — PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid natural stone	Density:	Unknown
Solubility:	Insoluble in water	Odour:	Odourless
Colour:	Coloured – Various	Thermal Expansion:[6]	-
pH:	N/A	Flammability:	N/A
Melting Point:	N/A	Viscosity:	N/A
Boiling Point:	N/A	Auto-Ignition Temp:	N/A
Flash Point:	N/A	Decomposition Temp:	N/A
Burning Time:	N/A	Burning Rate:	N/A
Evaporation Rate:	N/A		

Section 10 — STABILITY AND REACTIVITY

Reactivity:	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability:	The material is stable under normal conditions.
Hazardous Reaction:	No dangerous reaction known under conditions of normal use.
Physical Stability:	Avoid strong impacts which may cause material to break.
Conditions to Avoid:	Avoid contact with strong oxidizing agents.

[6]S. S. Kirk and D. M. Williamson (2012). STRUCTURE AND THERMAL PROPERTIES OF POROUS GEOLOGICAL MATERIALS, AIP Conference Proceedings 1426, 867.

	When heated to extremely high temperature (>860°C), quartz gradually converts to tridymite or cristobalite – forms of crystalline silica which are considered to be more hazardous than quartz.
Incompatible Materials:	Crystalline silica may react violently with strong oxidizing agents, causing fire and explosions.
Decomposition products:	Silica dissolves in hydrofluoric acid producing a corrosive gas, silicon tetrafluoride.

Section 11 — TOXICOLOGICAL INFORMATION

Acute toxicity:	No acute or chronic effects are known from the exposure to the intact product. However, dust in contact with skin and eyes may cause mechanical irritation. Temporary inhalation of dust may result in acute respiratory irritation, such as discomfort in the chest, shortness of breath and coughing.
Primary routes of exposure:	None for intact product. However, dust emitted from the fabrication process may be in contact with eyes, hand, lungs or other body parts by exposure or inhalation.
Respiratory effects:	Repeated inhalation of respirable crystalline silica (< 10μm) may cause silicosis, an incurable, progressing fibrosis (scarring) of the lungs. Silicosis increases the risk of contracting pulmonary tuberculosis, and, may cause other adverse conditions such as lung and kidney cancer (according to some studies). Safety measures including environmental measures such as proper ventilation and extraction, filtering systems and wet processing. The use of effective personal protection particularly respiratory protection will also reduce the risk of dust inhalation.
Carcinogenicity	Respirable crystalline silica is classified according to the following organisation:

IARC	NTP	NIOSH	ACGIH	WHO/NIH
Human carcinogen (Group 1)	Definitely a lung carcinogen	Potential occupational carcinogen	A2 suspected human carcinogen	Known human carcinogen

Sensitization	No respiratory sensitizing effects known.
Mutagenicity	No data.

Section 12 — ECOLOGICAL INFORMATION

Not expected to be toxic to aquatic organisms as the product is insoluble in water. However, discharging dust and fine particles into waterways may increase the total suspended particulate (TSP) level that can be harmful to certain aquatic species.

Degradability	N/A
Bioaccumulative	N/A
Mobility in Soil	N/A
Other adverse effects:	No other adverse environmental effects caused by this product are known.

Section 13 — DISPOSAL CONSIDERATIONS

Disposal methods	Do not allow fine particles to enter into sewers/water supplies. Do not contaminate ponds, waterways or ditches with dust. Dispose of product in accordance with local/regional/national/international regulations.
Hazardous waste code	Not regulated.
Residue/Unused products	Dispose products and residue in accordance with local regulations. Empty containers may retain product residues. All product residues and unused materials may be disposed in a safe manner.
Contaminated Packaging	Follow packaging labels. Empty packaging materials should be recycled or disposed of in accordance with appropriate regulations and practices.

Section 14 — TRANSPORTATION INFORMATION

ADG Code of Classification	None
DOT Hazard Classification	None
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.

Section 15 — REGULATORY INFORMATION

Crystalline Silica is listed as a carcinogenic material in WHS, IARC, NTP, NIOSH, ACGIH and WHO/NIH and is a low-moderate component of this product. Respirable crystalline silica has a workplace exposure standard of 0.05 mg/m^3 averaged over eight hours according to WHS regulations.

Section 16 — OTHER INFORMATION

Abbreviations:

WHS:	Work Health and Safety
IARC:	International Agency for Research on Cancer
NTP:	National Toxicology Program
NIOSH:	National Institute for Occupational Safety and Health
ACGIH:	American Conference of Governmental Industrial Hygienists
WHO/NIH:	World Health Organisation/National Institutes of Health
OSHA:	Occupational Safety and Health Administration, US Department of Labour
DOT:	US Department of Transportation

FOR FURTHER INFORMATION Apex Stone Pty Ltd	CONTACT: info@apexstone.com.au
MSDS Preparation Date	2.10.2023

NOTICE:
Apex Stone & Stone Initiatives believes that the information contained on this Material Safety Data Sheet is accurate. The suggested precautions and recommendations are based on 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 not all use circumstances can be anticipated. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulation, rules or insurance requirement. However, the product must not be used in a manner which could result in harm.

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