

Zero Crystalline Silica

INTRODUCING A NEW ERA IN STONE SURFACES

Specifications & Safety Information

Contents

PRODUCT SPECIFICATIONS	2
SAFETY DATA SHEET	3

Product Specifications

GENERAL SPECIFICATION	TYPICAL	
Slab size nominal	3050 x 1300 x 7mm	
Slab size tolerance	Length +50 Width +10	
Slab thickness tolerance	+/- 0.70 mm	
Slab flatness	+/- 1 mm width/ +/-2mm length	
Gloss	56	
Slab weight	58 kg	
PROPERTIES	TEST METHOD	TYPICAL VALUE
Specific Gravity	ASTM D792	2.40
Hardness	MOHS	7.6
Water Absorption	AS 1756-1989 (AS-3558.1)	0.03%
Colour Fastness	AS 1756-1989 (AS-3558.3)	No change
Impact Resistance	AS 1756-1989 (AS-3558.15)	No cracks or crazing
Impact Resistance	EN14617.9	3.30j unsupported 6.1j supported
Izod Impact Resistance	ASTM D256	2.23ft.lbf
Flexural Strength	ASTM D790	47Mpa
Resistance to Surface Scratching	AS 1756-1989 (AS-3558.4)	Unaffected
Resistance to Surface Scratching	AS/NZS 2924.2.14	6.5N
Wear Index	ASTM D4060	0.58mg/cycle
Heat Resistance	NEMA D2863	No Change
Steam Resistance	AS/NZS 2924.2.23	No Change
Boiling Water Surface	NEMA LD-3	No Change
Stain Resistance	AS 1756-1989 (AS-3558.2)	Pass. Any superficial stains were removed by water, undiluted bleach or Jiff.
Slip Resistance	AS/NZS 4586 Dry	Class F (medium)
Slip Resistance	AS/NZS 4586 Wet	21
Thermal Shock	ASTM C484	No cracks or crazing
Heat Release	AS/NZS 3837	Total Heat Released 50.1 MJ/kg
Average Specific Extinction Area	AS/NZS 3837	153.1 m ² /kg
Critical Heat Flux	ASISO 9239.1	4
Early Fire Hazard Ignitability Index	AS1530.3 0-20	4
Early Fire Hazard Spread of Flame Index	AS1530.3 0-10	0
Early Fire Hazard Heat Evolved Index	AS1530.3 0-10	2
Early Fire Hazard Smoke Development Index	AS1530.3 0-10	2



Safety Data Sheet

**PURESTONE ZERO CRYSTALLINE
SILICA ENGINEERED STONE**

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

MATERIAL IDENTIFICATION

Purestone Zero Crystalline Silica Hard Surface

MATERIAL USE

Zero Crystalline Silica Hard Surfacing for Interior Horizontal and Vertical Worksurfaces.

COMPANY IDENTIFICATION

Purestone Pty Ltd
ACN: 673 470 829
14 Lanyon Street
Dandenong
Victoria 3175 Australia
Ph: 61-3-9794 0515

2. HAZARDS IDENTIFICATION

Not classified as hazardous according to Safe Work Australia criteria as shipped.

Purestone Zero Crystalline Silica Hard Surface

(Mineral content values up to: 00.40% crystalline silica - 81.80% amorphous non-crystalline material - 16.60% Gibbsite - 01.20% Rutile)
(Binder content values up to: 10.00% PMMA)

Safework Australia

"The non-crystalline or amorphous forms of silica do not cause this kind of lung damage"

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[https://www1.health.gov.au/internet/main/publishing.nsf/Content/562CF83B7AECFC8FCA2584420002B113/\\$File/NDDT-Final-Report-June-2021.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/562CF83B7AECFC8FCA2584420002B113/$File/NDDT-Final-Report-June-2021.pdf)

"There are crystalline and non-crystalline forms of silicon-dioxide. While inhalation of the amorphous form does not often cause clinically significant complications, inhalation of the crystalline form can cause lung disease."

Not classified as Engineered Stone in accordance as defined by:

Occupational Health and Safety Act 2004

From 1 July 2024, engineered stone is defined as an artificial product that

contains one per cent or more crystalline silica, determined as a weight/weight (w/w) concentration, and

is created by combining natural stone materials with other chemical constituents such as water, resins or pigments, and

becomes hardened

The solid product as supplied is classified as non-hazardous under normal conditions and does not present an inhalation, ingestion, skin, or eye hazard. Uncontrolled dust generated during machining operations such as dry cutting, dry drilling, dry grinding etc., can generate some crystalline silica and amorphous non-crystalline silica in a respirable form. These levels are up to 00.40% crystalline silica - 81.80% amorphous non crystalline material - 16.60% Gibbsite - 01.20% Rutile, proportionally. Although over exposure to airborne crystalline silica in a respirable form can cause silicosis, the level of crystalline silica up to 00.40% is below the 1% crystalline silica level and is not classified as an engineered stone in accordance to the meaning as defined by:

Occupational Health and Safety Act 2004, Occupational Health and Safety Amendment (Crystalline Silica) Regulations 2021, S.R. No.137/2021, Worksafe Victoria and Safework Australia state:

"The non-crystalline or amorphous forms of silica do not cause this kind of lung damage"

CDC - Agency for Toxic Substances and Disease Registry (ATSDR) state:

<https://www.atsdr.cdc.gov/toxfaqs/tfacts211.pdf>

"There are no known health effects from exposure to amorphous silica at the levels found in the environment or in commercial products"

"A few reports suggest that amorphous silica can cause respiratory diseases (but no silicosis) in workers."

"Studies of amorphous silica in workers and lab animals have not found cancer."

National Toxicology Program (NTP) state:

https://ntp.niehs.nih.gov/ntp/newhomeroc/other_background/silica_no_app_508.pdf

"cancer risks are associated with exposure to quartz and cristobalite but not to amorphous silica."

<https://ntp.niehs.nih.gov/ntp/roc/content/profiles/silica.pdf>

"Human cancer risks are associated with exposure to respirable quartz and cristobalite but not to amorphous silica."

Although there are no exposure guidelines nominated by Safework Australia, Worksafe Victoria and OSHA, it is highly recommended the product be machined under suitable exposure controls that minimise the risk of exposure to generated dust for example using tools with dust collection attachments connected to H Class vacuums or alternatively equipment fitted with water suppression (wet cutting) and local exhaust ventilation.

During machining operations use a mask with minimum of P2 filter suitable for dust or mist. Respirators should be selected based on type and concentration of contaminant in the air. Advice from safety equipment suppliers should be sought before selection of filters. Reference to AS/NZS 1715 and AS/NZS 1716 should be made. Please see 8. Exposure Controls / Personal Protection.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT
Quartz containing crystalline silica	14808-60-7	Up to 00.04%
Amorphous non crystalline material		Up to 82.00%
Gibbsite		Up to 17.00%
Rutile		Up to 01.00%
Poly(methyl methacrylate)	9011-14-7	Up to 10.00%

4. FIRST AID MEASURES

INHALATION

If breathing difficulties arise after inhalation of dusts during machining, remove to fresh air. Give oxygen and seek medical attention.

EYE

Flush open eye with copious amounts of fresh clean water, if symptoms persist seek medical attention.

HAND

Always use leather or cotton gloves and proper foot protection when moving sheets.

EAR

Ear plugs or ear muff protection is required during machining operations.

SKIN

After machining operations wash skin with soap and water and apply a moisturiser.

INGESTION

Not likely to be hazardous by ingestion, however if large amounts are ingested seek medical attention.

ADVICE TO PHYSICIAN

Treat symptomatically

PROTECTIVE CLOTHING

Cotton overalls buttoned at the neck and wrist should be worn during machining operations.

HYGIENE

Wash hands with soap and water after machining operations. The use of moisturisers is also recommended.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES	Not flammable.
FLASH POINT	NA
AUTOIGNITION TEMPERATURE	Above 550 deg C.
FLAME PROPAGATION RATE	Flame will not be supported.

Vapours produced in a fire are carbon dioxide, methyl methacrylate, water. No explosion hazard exists

EXTINGUISHING MEDIA

SPECIAL FIRE FIGHTING PRECAUTIONS / INSTRUCTIONS

Use self contained breathing apparatus. Dry chemical, CO₂, Foam.

HAZCHEM CODE

None allocated

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

ENVIRONMENTAL PRECAUTIONS

Prevent product from entering drains and waterways.

In the event large quantities enter the waterways contact the local authorities.

METHODS OF CLEANING UP

Gather up minimally damaged material for reuse.

7. HANDLING AND STORAGE

CONDITIONS FOR SAFE HANDLING AND STORAGE

Uncrated slabs should always be carried on a vertical plane.

Store indoors on a flat surface.

Store away from incompatible materials.

PRECAUTIONS FOR SAFE HANDLING

Before use carefully read the product label. Use of safe work practices are recommended

Observe good personal hygiene, including washing hands before eating.

Prohibit eating, drinking and smoking in working areas

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

The solid product as supplied is classified as non-hazardous under normal conditions and does not present an inhalation, ingestion, skin, or eye hazard. Uncontrolled dust generated during machining operations such as dry cutting, dry drilling, dry grinding etc., can generate some crystalline silica and amorphous non-crystalline silica in a respirable form. These levels are up to 00.04% crystalline silica - 82.00% amorphous non crystalline material - 17% Gibbsite - 1% Rutile, proportionally. Although over exposure to airborne crystalline silica in a respirable form can cause silicosis, the level of crystalline silica up to 00.04% is far below the 40% crystalline silica level and is not classified as an engineered stone in accordance to the meaning as defined by:

Occupational Health and Safety Act 2004, Occupational Health and Safety Amendment (Crystalline Silica) Regulations 2021, S.R. No.137/2021, Worksafe Victoria and Safework Australia state:

"The non-crystalline or amorphous forms of silica do not cause this kind of lung damage"

Although there are no exposure guidelines nominated by Safework Australia, Worksafe Victoria and OSHA, it is highly recommended the product be machined under suitable exposure controls that minimise the risk of exposure to generated dust for example using tools with dust collection attachments connected to H Class vacuums or alternatively equipment fitted with water suppression (wet cutting) and local exhaust ventilation.

PERSONAL PROTECTIVE EQUIPMENT

EYE

Safety glasses with side shields according local standards should be worn during machining operations small chips can fly off blunt cutting edges.

RESPIRATORY

During machining operations use a mask with minimum of P2 filter suitable for dust or mist. Respirators should be selected based on type and concentration of contaminant in the air. Advice from safety equipment suppliers should be sought before selection of filters. Reference to AS/NZS 1715 and AS/NZS 1716 should be made. Please see 8. Exposure Controls / Personal Protection.

HAND

Always use leather or cotton gloves and proper foot protection when moving sheets.

PROTECTIVE CLOTHING

Cotton overalls buttoned at the neck and wrist should be worn during machining operations.

HYGIENE

Wash hands with soap and water after machining operations. The use of moisturisers is also recommended.

EXPOSURE CONTROLS**INGREDIENT NAME**

Silica, Crystalline (Quartz)

SAFE WORK AUSTRALIARespirable dust (0.05mg/m³/%SiO₂+2 for 8Hr time weighted average)**Worksafe Victoria**Respirable dust (0.02mg/m³/%SiO₂+2 for 8Hr time weighted average)**OSHA**Respirable dust (25ug/m³/%SiO₂+2 for 8Hr time weighted average)**INGREDIENT NAME**

Amorphous Non-Crystalline Silica

SAFE WORK AUSTRALIA

Not applicable

Worksafe

Not applicable

OSHA

Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Solid homogenous one piece material

ODOUR

Odourless

SPECIFIC GRAVITY

2.4

pH

NA

SOLUBILITY IN WATER

Insoluble

STABILITY

Stable

INCOMPATIBILITIES

None foreseen

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition may lead to the release of various hydrocarbons, carbon oxides and water.

HAZARDOUS POLYMERIZATION

Will not occur.

AUTOIGNITION TEMPERATURE

Above 550 deg C.

10. STABILITY AND REACTIVITY

STABILITY

Stable under recommended conditions of storage.

INCOMPATIBILITIES

None foreseen.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition may lead to the release of various hydrocarbons, carbon oxides and water.

HAZARDOUS POLYMERIZATION

Will not occur.

CONDITIONS TO AVOID

Avoid heat, sparks, open flames and other ignition sources.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

This product is expected to be of low toxicity. Ingestion is considered unlikely due to product form.

SKIN

Mechanical irritant. Prolonged or repeated contact may result in mild irritation due to mechanical action.

EYE

Due to product form and nature of use, the potential for exposure is reduced. Product may only present a hazard during machining operations such as cutting, drilling or sanding with dust generation, which may result in mechanical irritation.

MUTAGENICITY

Not classified as a mutagen.

REPRODUCTIVE

Not classified as a reproductive toxin.

ASPRIATION

Not applicable for solid product form as supplied.

CARCINOGENICITY

CDC - Agency for Toxic Substances and Disease Registry (ATSDR) state:

<https://www.atsdr.cdc.gov/toxfaqs/tfacts211.pdf>

"There are no known health effects from exposure to amorphous silica at the levels found in the environment or in commercial products"

"A few reports suggest that amorphous silica can cause respiratory diseases (but no silicosis) in workers."

"Studies of amorphous silica in workers and lab animals have not found cancer."

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"cancer risks are associated with exposure to quartz and cristobalite but not to amorphous silica."

<https://ntp.niehs.nih.gov/ntp/roc/content/profiles/silica.pdf>

"Human cancer risks are associated with exposure to respirable quartz and cristobalite but not to amorphous silica."

Respirable crystalline silica quartz is classified as carcinogenic to humans (IARC Group 1).

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"There are crystalline and non-crystalline forms of silicon-dioxide. While inhalation of the amorphous form does not often cause clinically significant complications, inhalation of the crystalline form can cause lung disease."

12. ECOLOGICAL INFORMATION

AQUATIC

No ecological information is available, however toxicity is expected to be low due to insolubility in water.

BIOACCUMULATIVE POTENTIAL

The substance is inert and will not be absorbed and accumulate in tissues.

MOBILITY IN SOIL

No information available.

OTHER ADVERSE EFFECTS

Not anticipated to cause any adverse effects to plants or animals.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Recycle.

Landfill in accordance with local, state and federal government regulations.

14. TRANSPORT INFORMATION

Not regulated. Not classified as dangerous goods.

U.N. NUMBER

Not allocated.

HAZCHEM CODE

Not allocated.

15. REGULATORY INFORMATION

POISONS SCHEDULE

Not allocated

CLASSIFICATION

Not classified as hazardous according to Safe Work Australia criteria as shipped.

Purestone Zero Crystalline Silica Engineered Stone

(values at: up to 0.04% crystalline silica - up to 99.96% amorphous non-crystalline silica - 10% PMMA binders)

Safework Australia**"The non-crystalline or amorphous forms of silica do not cause this kind of lung damage"**

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[https://www1.health.gov.au/internet/main/publishing.nsf/Content/562CF83B7AECFC8FCA2584420002B113/\\$File/NDDT-Final-Report-June-2021.pdf](https://www1.health.gov.au/internet/main/publishing.nsf/Content/562CF83B7AECFC8FCA2584420002B113/$File/NDDT-Final-Report-June-2021.pdf)**"There are crystalline and non-crystalline forms of silicon-dioxide.****While inhalation of the amorphous form does not often cause clinically significant complications, inhalation of the crystalline form can cause lung disease."****Not classified as Engineered Stone in accordance as defined by:****Occupational Health and Safety Act 2004****Occupational Health and Safety Amendment (Crystalline Silica) Regulations 2021****S.R. No. 137/2021****"engineered stone means a manufactured composite stone material that contains—****(a) resins; and****(b) 40% or more crystalline silica;"****Worksafe Victoria**https://www.worksafe.vic.gov.au/changes-protect-victorians-working-crystalline-silica?utm_source=Newsletter&utm_medium=Email&utm_campaign=WorkWell%20Wednesday&utm_term=Work%20design&utm_content=work%20design**International Agency for Research on Cancer (IARC) made the following evaluation:****Crystalline silica inhaled in the form of quartz or cristobalite from work-related sources is carcinogenic to humans (Group 1).****National Toxicology Program (NTP) state:**https://ntp.niehs.nih.gov/ntp/newhomeroc/other_background/silica_no_app_508.pdf**"cancer risks are associated with exposure to quartz and cristobalite but not to amorphous silica."**<https://ntp.niehs.nih.gov/ntp/roc/content/profiles/silica.pdf>**"Human cancer risks are associated with exposure to respirable quartz and cristobalite but not to amorphous silica."****CDC - Agency for Toxic Substances and Disease Registry (ATSDR) state:**<https://www.atsdr.cdc.gov/toxfaqs/tfacts211.pdf>**"There are no known health effects from exposure to amorphous silica at the levels found in the environment or in commercial products"****"A few reports suggest that amorphous silica can cause respiratory diseases (but no silicosis) in workers."****"Studies of amorphous silica in workers and lab animals have not found cancer."****INVENTORY LISTINGS**

AICS (Australian Inventory of Chemical Substances): Components are listed on AICS, or are exempt

16. OTHER INFORMATION

MEDICAL USE

Do not use in medical uses involving implanting into human body.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

Protective equipment contained within this report is provided as a guide.

Product form, product classification, method of application, working environment, quantity used, engineering controls should be considered before selection of PPE.

HEALTH EFFECTS FROM EXPOSURE:

Product form, product classification, method of application, working environment, quantity used, engineering controls should be considered before selection of PPE.

Users must assess the risks and apply control methods where appropriate.

The data in this SDS refers to the specific material and not to other materials used in combination with this material.