



MATERIAL SAFETY DATA SHEET

STATEMENT OF HAZARDOUS NATURE

This product contains crystalline silica, which is classified as a hazardous substance according to the criteria of Worksafe Australia.

Address: 46 Randle Road
Meeandah QLD 4008, Australia
Telephone: 1800 659 850 (General Information and Emergency)

Section 1. Chemical Products and Company Identification

Product Name/Trade Names:

Fibre Reinforced Concrete (FRC) Stormwater Drainpipe
Fibre Reinforced Concrete (FRC) Pipe Fittings

Other Names: Fibre Cement Pipe

Note: This material safety data sheet applies only to products manufactured *after 1987*. Products carrying these names and manufactured before 1987 may contain asbestos. Safety information on pre 1987 products may be obtained in Australia by telephone: 1800-025-563

Use: The above products are principally stormwater drain pipe.

Manufacturer: James Hardie® Australia Pty Limited, 46 Randle Road, Meeandah, QLD, 4008 Australia

Effective date: February 22, 2006. Check to verify the latest version or translation availability.

NOTE: As of the date of the preparation of this document, the information contained herein is believed to be accurate.



Substance Name	CAS Number	UN Number	EINECS Number	Proportion (by weight)
Crystalline Silica (Quartz)	14808-60-7	Not a hazardous material for shipping purposes	238-878-4	10-30%
Calcium Silicate (Hydrate)	1344-95-2	Not a hazardous material for shipping purposes	215-710-8	10-50%
Hydrated Portland Cement	65997-15-1	Not a hazardous material For shipping purposes	266-043-4	20-40%
Cellulose	9004-34-6	Not a hazardous material for shipping purposes	232-674-9	<10%
Other non hazardous ingredients (pigments, fillers)				<10%
Coatings: Solvent based bitumen on some products				<0.1%

Note: *This product does not contain asbestos or asbestiform fragments.* Cellulose comes from wood pulp.

Section 2. Hazards Identification

Risk Phrases: Irritating to respiratory system
Harmful: danger of serious damage to health by prolonged exposure through inhalation

Safety Phrase: Do not breathe dust

Emergency Overview: Not explosive, not a fire hazard

Primary Routes of Entry and Potential Health Effects:

Inhalation:

Acute effects - Dust may cause irritation of the nose, throat, and airways, resulting in coughing and sneezing. Certain susceptible individuals may experience wheezing (spasms of the bronchial airways) on inhaling dust during sanding or sawing operations.

Chronic Effects - Repeated and prolonged overexposures to dust containing crystalline silica can cause silicosis (scarring of the lung) and increases the risk of bronchitis, tuberculosis, lung cancer, renal disease, and scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels, and internal organs). Some studies suggest that cigarette smoking increases the risk of silicosis, bronchitis and lung cancer in persons also exposed to crystalline silica.

Acute silicosis - a sub-chronic disease associated with acute, massive silica exposure, is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include, but are not limited to, shortness of breath, cough, fever, weight loss and chest pain. Such exposure may cause pneumoconiosis and pulmonary fibrosis.



Ingestion:

Unlikely under normal conditions of use, but swallowing the dust from this product may result in -irritation or damage to the mouth and gastrointestinal tract due to alkalinity of dust.

Eye:

Dust may irritate the eyes from mechanical abrasion causing watering and redness.

Skin:

Dust may cause irritation of the skin from friction but cannot be absorbed through intact skin.

Medical conditions generally aggravated by exposure: Pulmonary function may be reduced by inhalation of respirable crystalline silica and/or cellulose. If lung scarring occurs, such scarring could aggravate other lung conditions such as asthma, emphysema, pneumonia or restrictive lung diseases. Lung scarring from crystalline silica may also increase risks to pulmonary tuberculosis.

Smoking:

Some studies suggest that cigarette smoking increases the risk of occupational respiratory diseases, including silica-related respiratory diseases.

Carcinogenicity:

The International Agency for the Research on Cancer (IARC) has classified crystalline silica inhaled in the forms of quartz or cristobalite from occupational sources as carcinogenic to humans.

LD50:

Silicon Dioxide: Rat oral >22,500 mg/kg Mouse oral>10,500 mg/kg

Section 3. Hazardous Ingredients/Identity Information

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Section 4. First Aid Measures

Signs and symptoms of over exposure: Breathlessness, wheezing, cough, sputum production

First Aid:

Swallowed:

If swallowed, dilute by drinking large amounts of water. Do not induce vomiting. Seek medical attention. If unconscious, loosen tight clothing and lay the person on his/her left side. Give nothing by mouth to an individual who is not alert and conscious.

Eye Contact:

Remove contact lens. Flush with running water or saline for at least 15 minutes. Seek medical attention if redness persists or if visual changes occur.

Skin Contact:

Wash with mild soap and water. Contact physician if irritation persists or later develops.

Inhaled:

Remove to fresh air. If shortness of breath or wheezing develops, seek medical attention.

ADVICE TO DOCTOR: Treat symptomatically

Section 5. Fire Fighting Measures

James Hardie® fibre reinforced concrete pipes are neither flammable nor explosive.

Fire and Explosion Hazard:

1. Flash Point: Not applicable
2. Auto-ignition: Not applicable
3. Non-flammable and non-explosive

Extinguishing Media: This material is not combustible. Appropriate extinguishing media (carbon dioxide, foam, water, or dry chemical) for surrounding fire should be used.

Fire Fighting: Fire fighting personnel should wear normal protective equipment and positive self-contained breathing apparatus.

Section 6. Accidental Release Measures

No special precautions are necessary to pick up product that has been dropped. The following applies to spills or releases of dust generated during cutting or sanding of the material.

Precautions: Good housekeeping practices are necessary for cleaning up areas where leaks or spills have occurred, dust has accumulated, including leaks and spills. Take measures to either eliminate or minimize the creation of dust. Respirable dust and silica levels should be monitored regularly.



Wherever possible, practices likely to generate dust should be controlled with engineering controls such as local exhaust ventilation, dust suppression with water and containment, enclosure or covers.

Use respiratory protection as described in Section 8.

Cleanup Methods: A fine water spray should be used to suppress dust when sweeping (dry sweeping should not be attempted). Vacuuming with an industrial vacuum cleaner outfitted with a high-efficiency particulate air (HEPA) filter, is preferred to sweeping. Waste may be disposed of by landfill in compliance with federal, state and local requirements.

In the event of an accidental release, observe all protection measures set out in this MSDS. Avoid using materials and products that are incompatible with the product. (refer to Section 10)

Section 7. Handling and Storage

Note: The fibre reinforced concrete pipes in their intact state do not present a health hazard. The controls below apply to dust generated from the pipes by cutting, drilling, sawing, crushing, or otherwise abrading, and cleaning or moving dust.

James Hardie ®'s recommendation: Keep exposure to dust as low as reasonably possible. Respirable crystalline silica levels should not exceed those specified by Worksafe Australia, the Commonwealth National Occupational Health and Safety Commission and identified in this MSDS. Exposure to respirable (fine) silica dust depends on a variety of factors, including activity rate (e.g. cutting rate), method of handling, environmental conditions (e.g. weather conditions, workstation orientation) and control measures used.

Practices likely to generate dust should be carried out in adequately ventilated areas. The work practices and engineering controls set out in Section 8 should be followed to reduce silica exposures.

Keep away from reactive products. Do not store near food, beverages or smoking materials. Avoid spilling and creating dust. Maintain appropriate dust controls during handling. Use appropriate respiratory protection during handling as described in Section 8.

Storage and Transport: Pipes should be adequately chocked to prevent rolling and possible crush injury to installers or to the public.



Section 8. Exposure Controls and Personal Protection

EXPOSURE STANDARDS: WORKSAFE AUSTRALIA

Ingredients

Occupational Exposure Standards

Crystalline Silica (Quartz)	0.1 mg/m ³ time-weighted average (TWA) respirable dust
Dust (NOS - not otherwise specified)	10 mg/m ³ TWA as inspirable dust
Calcium Silicate	10 mg/m ³ TWA as inspirable dust
Cellulose (paper fibre)	10 mg/m ³ TWA as inspirable dust

Where a state or local authority prescribes a lower standard, the lower standard applies.

Personal Protection

Respiratory: When performing tasks with this product that may generate silica dust, always wear a properly-fitted, approved dust mask or respirator (e.g. P1 or P2) in accordance with applicable government regulations and manufacturers instructions. Use and maintain respirators in accordance with AS/NZS 1715 & 1716 for particulate respirators. Select respirators based on the level of exposure to crystalline silica. Use respirators that offer protection to the highest concentrations of crystalline silica if actual concentrations are unknown. Comply with all other federal and state laws.

Eye: If cutting materials with power tools, dust resistant safety goggles/glasses should be worn. AS/NZS1336 “Recommended Practices for Eye Protection in the Industrial Environment” provides further guidance.

Skin: Loose comfortable clothing should be worn. Direct skin contact with dust and debris should be avoided by wearing long sleeved shirts and long trousers, a cap or hat, and gloves - standard duty leather or equivalent AS 2161 “Industrial Safety Gloves and Mittens”. Work clothes should be washed regularly.



Engineering Controls:

1. Dust generating activities should only be conducted outdoors.
2. Position dust-generating activity so that wind will blow dust away from user or others in working area and allow for ample dissipation.
3. For creating small openings, break through with a hammer and pick.
4. For openings requiring a powered tool use wet cutting methods only.

**IMPORTANT
NOTES:**

1. For reducing dust levels, James Hardie recommends always using manual methods when feasible. (if powered tools are required, wet methods should be used).
2. **ALWAYS** wear a properly-fitted dust mask or respirator (e.g., P1 or P2) when creating dust with this product.
3. **NEVER** create dust indoors
4. **NEVER** dry sweep – Use wet suppression or HEPA Vacuum
5. **ALWAYS** follow tool manufacturer's safety recommendations



Section 9. Physical and Chemical Properties

Appearance and Odour: Solid pipes of varying diameters, thicknesses and lengths coloured through grey.

Vapour Pressure: Not Relevant

Specific Gravity: Not Relevant

Flammability Limits: Not Relevant

Boiling Point: Not Relevant

Melting Points: Not Relevant

Flash Point: Not Relevant

Autoignition Temp: Not Relevant

Volatility: Not Relevant

Solubility in Water: Not Relevant

Evaporation Rate: Not applicable

Section 10. Stability and Reactivity

Stability: Crystalline silica is stable under ordinary conditions.

Conditions to Avoid: Excessive dust generation during storage and handling.

Materials to Avoid:

Incompatibility: Hydrofluoric acid will dissolve silica and can generate silicon tetrafluoride, a corrosive gas. Contact with strong oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride or oxygen difluoride may cause fires and/or explosions.

Section 11. Toxicological Information

The product is not toxic in its intact form. The following applies to dust that may be generated during cutting, sanding, drilling, routing, crushing, otherwise abrading the product, or moving dust during cleaning process:

Chronic Effects:

Inhaled:

Repeated and prolonged overexposures to dust containing crystalline silica can cause silicosis (scarring of the lung) and increases the risk of bronchitis, tuberculosis, lung cancer, renal disease and scleroderma (a disease affecting the connective tissue of the skin, joints, blood vessels and internal organs). Some studies suggest that cigarette smoking increases the risk of silicosis, bronchitis, and lung cancer in persons also exposed to crystalline silica. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include, but are not limited to: shortness of breath, cough, fever, weight loss and chest pain. Such exposure may cause pneumoconiosis and pulmonary fibrosis.

The following relates to health effects of cellulose: Based on limited animal research, it is possible that repeated chronic inhalation exposure to cellulose fiber dust over time may lead to inflammation and scarring of the lung in humans. Precautions taken for crystalline silica dust will protect against cellulose.



Section 12. Ecological Information

There is a very limited amount of ecological data available on the effects of releases that may occur from this product being released into the environment. Clean up of the spilled product would not be expected to leave any hazardous material that could cause a significant adverse impact. There is a limited amount of ecological data available on crystalline silica, primarily because it is a naturally occurring mineral. An adequate representation of this data is beyond the scope of this document.

Section 13. Disposal Consideration

Dispose of material as inert, non-metallic mineral in conformance with local, state and federal regulations.

Section 14. Transport Information

There are no special requirements for storage and transport.

UN No:	None Allocated
Dangerous Goods Class:	None Allocated
Hazchem Code:	None Allocated
Poisons Schedule:	None Allocated
Packing Group:	Not Applicable
Label:	Local regulations may apply

Section 15. Regulatory Information

Regulatory information is provided within the relevant sections of this material safety data sheet, as appropriate.



Section 16. Other Information

WARNING

DO NOT BREATHE DUST AND CUT ONLY IN WELL VENTILATED AREA

James Hardie products contain sand, a source of respirable crystalline silica which is considered by some international authorities to be a cause of cancer from some occupational sources. Breathing excessive amounts of respirable silica dust can also cause a disabling and potentially fatal lung disease called silicosis, and has been linked with other diseases. Some studies suggest smoking may increase these risks. During installation or handling: (1) work in outdoor areas with ample ventilation; (2) minimise dust when cutting with power tools by using wet cutting methods or use a HardiBlade® Saw Blade and dust-reducing circular saw attached to a HEPA vacuum; (3) warn others in the immediate area to avoid breathing dust; (4) wear a properly-fitted, approved dust mask or respirator (e.g. P1 or P2) in accordance with applicable government regulations and manufacturer instructions to further limit respirable silica exposures. During clean-up, use HEPA vacuums or wet cleanup methods - never dry sweep. For further information, refer to our installation instructions and Material Safety Data Sheets available at www.jameshardie.com.au. **FAILURE TO ADHERE TO OUR WARNINGS, MATERIAL SAFETY DATA SHEETS, AND INSTALLATION INSTRUCTIONS MAY LEAD TO SERIOUS PERSONAL INJURY OR DEATH.**

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