SECTION 1 - IDENTIFICATION OF THE MATERIAL AND SUPPLIER

PRODUCT NAME:	**Metromix Silica Sand Anna Bay**
APPLICABLE IN:	**AUSTRALIA**
OTHER NAMES:	**Metallurgical Sand, Foundry Sand, Fine Aggregate in Mortar and Concrete**
RECOMMENDED USE:	**Foundry Sands, Metallurgical Additive, Aggregates in Concrete, Landscaping and other uses.**
COMPANY NAME:	**Metromix Pty Ltd. (ABN 39 002 886 839)**
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This material safety data sheet (MSDS) is issued by Metromix Pty Ltd in accordance with the Code and guidelines from the Australian Safety and Compensation Council ASCC (formerly NOHSC). The information in it must not be altered, deleted or added to. Metromix Pty Ltd will not accept any responsibility for any changes made to this MSDS by any other person or organization. Metromix Pty Ltd will issue a new MSDS when there is a change in product specifications and/or ASCC standards, guidelines, or regulations.

SECTION 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE:

When Supplied Containing No Free Dust Particles:
The product as supplied is classified as non-hazardous according to the criteria of the Australian Safety and Compensation Council approved criteria for Classifying Hazardous Substances [NOHSC:1008]3rd Edition. Dust created when the product is used and processed contains crystalline silica some of which may be respirable (particles small enough to enter the deep parts of the lung when breathed in). Any fine dust in, on or generated from the supplied product may include respirable crystalline silica, and should be treated as hazardous.

Risk Phrases: R48/20: Danger of serious damage to health by prolonged exposure through inhalation.
Safety Phrases: S22: Do not breathe dust.
ADG Classification: None allocated. **Not a Dangerous Good**.
UN Number: None allocated

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No	Conc,%	TWA (mg/m^3)	STEL (mg/m^3)
Silica (quartz)	14808-60-7	>96 *	0.1	not set

* Analysis also showed small quantities (less than 1% each) of alumina (Al_2O_3) and Ferric oxide (Fe_2O_3)

This is a natural product whose exact ratio of components is variable. Thus, figures provided here are typical only. Minor quantities of other non hazardous ingredients are also likely.

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak "is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

SECTION 4 - FIRST AID MEASURES

GENERAL INFORMATION:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

The following applies to dust from the product:

Swallowed:
Rinse mouth and lips with water. Do not induce vomiting. If symptoms persist, seek medical attention.

Eye Contact:
No effects expected. Do not attempt to remove solid particles embedded in the eye. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until all traces of the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.

Skin Contact:
Remove heavily contaminated clothing. Wash skin thoroughly with water. Use a mild soap if available. Shower if necessary. Seek medical attention for persistent redness, irritation or burning of the skin.

Inhalation:
Remove to fresh air, away from dusty area. If symptoms persist, seek medical attention. Good work practices should be followed when dust is generated, PPE such as dust masks (P2, P1) should be worn.

Ingestion:
Unlikely to occur in harmful quantities. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Advice to Doctor:
Treat symptomatically.

SECTION 5 - FIRE FIGHTING MEASURES

Fire and Explosion Hazards:
Silica sands are non-flammable. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.
No fire decomposition products are expected from this product at temperatures normally achieved in a fire.

Extinguishing Media:
Not Combustible. Use extinguishing media suited to burning materials.

Fire Fighting:
If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point:	Does not burn.
Upper Flammability Limit:	Does not burn.
Lower Flammability Limit:	Does not burn.
Auto ignition temperature:	Not applicable - does not burn.
Flammability Class:	Does not burn.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spills:
Dust is best cleaned up by vacuum device to avoid making dust airborne. Wetting down before sweeping up dust may be a useful control measure. Recommendations on exposure Controls / Personal Protection (see section 8 below) should be followed during spill clean-up if conditions are dusty or dust is generated. Minor spills do not normally need any special cleanup measures. In the event of a major spill, prevent spillage from entering drains or water courses. As a minimum, wear, P2 / P1 class dust masks overalls, goggles and gloves. No special recommendations for clothing materials. Stop leak if safe to do so, and contain spill. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill.

SECTION 7 - HANDLING AND STORAGE

Handling:
Avoid breathing dust. Respirable dust can be generated during processing, handling and storage. When stockpiling and handling large quantities of silica sands, care should be taken to avoid having the faces of the stockpile steeper than the natural angle of repose of the material. Steep faces can fall without warning and trap persons resulting in injury. Keep exposure to this product to a minimum, and minimise the airborne dust generated in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed.

Storage:
Wind blown dust generation can be avoided by wetting down stockpiles to create a protective crust. Avoid storage of materials generating dust in work areas.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

The following applies to **DUST GENERATED** from this product:
National Occupational Exposure Standard (NES) Australian Safety and Compensation Council, ASCC (formerly NOHSC). Exposure to dust should be as low as practicable and below the following NES.
Crystalline Silica as Respirable Dust: < 7 microns particle equivalent aerodynamic diameter

EXPOSURE LIMITS:	**TWA (mg/m^3)**	**STEL (mg/m^3)**
Crystalline Silica (quartz)	0.1 mg/m^3 TWA.	not set
Total Dust (of any type or particle size)	10 mg/m^3 TWA.	

ENGINEERING CONTROLS:
Keep exposures to dust as low as practicable, with the aim of maintaining respirable crystalline silica dust levels to below 0.05 mg/m^3 TWA (time-weighted average).

Ventilation:
No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that dusts are minimised. Work in the open air and the opening of external openings (such as doors and windows in buildings) generally provides adequate ventilation. Local mechanical ventilation or extraction may be required in areas where dust could escape into the working environment. Local dust extraction and collection may be used, if necessary, to control airborne dust levels. If generated dust cannot be avoided follow personal protection recommendations. Where possible vacuum or wash down all gear, equipment or mobile plant prior to maintenance and repair work, If compressed air cleaning cannot be avoided wear eye and respiratory protection, and clothing as listed below.

PERSONAL PROTECTION:

Skin Protection:

Wear loose comfortable clothing and gloves. Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**
Wash work clothes regularly. Wash hands before eating, or smoking. The information at hand indicates that this product is not harmful and that normally no special skin protection is necessary. However, we suggest that you routinely avoid contact with all chemical products and that you wear suitable gloves (preferably elbow-length) when handling this product.

Eye Protection:

When dust generation is possible and if in doubt, wear suitable protective glasses or goggles. Safety glasses with side shields or safety goggles or a face shield should be worn. Industrial Eye Protection: **AS1336**

Respiratory Protection:

None required if engineering and handling controls are adequate to minimise dust generation and dust exposure or product is supplied in washed large particle size containing minimal traces of dust. Where engineering and handling controls are not enough to minimise exposure to total dust and to respirable crystalline silica, personal respiratory protection may be required.
The type of respiratory protection required depends primarily on the concentration of the respirable crystalline silica dust in the air and the frequency and length of exposure time. Amount of physical exertion required and personal comfort during the work are other considerations in choice of respirator. A suitable P2 or P1 particulate respirator chosen and used in accordance with **AS/NZS 1715, AS/NZS 1716** Respiratory equipment: may be sufficient for many situations, but where high levels of dust are encountered, more efficient cartridge type or powered respirators or supplies air helmets or suits may be necessary. If there is a significant chance that dusts are likely to build up in the area where this product is being used, we recommend that you use a suitable Dust Mask. Use a P1 mask, designed for use against mechanically generated particles eg silica & asbestos.
Use only respirators that bear the Australian Standards mark and are fitted and maintained correctly.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical Appearance	
Description & Colour:	Fine free flowing solid particles clear, opaque, varying in size.
Odour:	None.
pH at stated concentration:	Not applicable.
Vapour Pressure:	Not Applicable no vapour emitted
Vapour Density:	Not Applicable no vapour emitted.
Boiling Point:	Not Applicable.
Freezing/Melting Point:	No specific data. Solid at normal temperatures.
Specific Gravity:	2.0-3.2 (H_2O =1)
Water Solubility:	Insoluble.
Evaporation Rate:	Not Applicable.
Flammability Limits:	Not Applicable.
Flash Point:	Not Applicable
Explosive Properties:	Not flammable or explosive

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability: Stable

Reactivity:

This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: Dust Generation.

Incompatibilities: No particular incompatibilities.

Hazardous Decomposition Products:

None. No significant quantities of decomposition products are expected at temperatures normally achieved in a fire.

Hazardous Polymerisation:

None. This product is unlikely to undergo polymerisation processes.

SECTION 11 - TOXICOLOGICAL INFORMATION

Typically, silica sands will have no specific toxicity data available as they are of very low acute toxicity to plants animals and humans.

HEALTH EFFECTS ACUTE (short term):

Ingestion:
Unlikely under normal industrial use. Mildly abrasive to mouth and throat if swallowed. This product is unlikely to cause any irritation problems in the short or long term.

Eye Contact:
This product may be mildly irritating to eyes, but is unlikely to cause anything more than mild discomfort which should disappear once product is removed. Particles impacting on the eye may cause eye injury. Exposure to dust may aggravate pre-existing eye conditions.

Skin Contact:
Dust may be mildly irritating and drying to the skin due to its physical characteristics. Available data indicates that this product is not harmful. It should present no hazards in normal use. In addition product is unlikely to cause any discomfort in normal use.

Inhalation:
Dust is mildly irritating to the nose, throat and respiratory tract and may cause coughing and sneezing. To pose a danger to the lungs, a dust particle must be respirable. A dust particle is considered respirable if it is smaller than 10 micrometers. Dust particles that are respirable are capable of being inhaled into the conducting airways and gas exchange regions of the lungs. Dust particles larger than 10 micrometers are not capable of penetrating the defence mechanisms of the lung to produce injury to the important lower regions of the lung where oxygen transfer takes place.

HEALTH EFFECTS CHRONIC (long term exposure):

Eye Contact:
Dust may cause irritation and inflammation of the eyes and aggravate pre-existing eye conditions.

Skin Contact:
Repeated heavy contact with the dust may cause drying of the skin and can result in skin rash (dermatitis) typically affecting the hands. Over time this may become chronic and can also become infected.

Inhalation:
Repeated exposure to the dust may result in increased nasal and respiratory secretions and coughing. Inflammation of lining tissue of the respiratory system may follow repeated exposure to high levels of dust with increased risk of bronchitis and pneumonia. Pre-existing upper respiratory and lung diseases including asthma and bronchitis may be aggravated. To pose a danger to the lungs, a dust particle must be respirable. A dust particle is considered respirable if it is smaller than 10 micrometers. Dust particles that are respirable are capable of being inhaled into the conducting airways and gas exchange regions of the lungs. Dust particles larger than 10 micrometers are not capable of penetrating the defence mechanisms of the lung to produce injury to the important lower regions of the lung where oxygen transfer takes place.

The product may contain a proportion of respirable free crystalline silica. Long term occupational over-exposure or prolonged breathing in (or inhalation) of crystalline silica dust at levels above the NES carries the risk of causing serious and irreversible lung disease, including bronchitis and silicosis a fibrotic lung disease (scarring of the lung), including acute and/or accelerated silicosis. It is the primary health risk from breathing silica and the oldest known occupational disease, there are three different types of silicosis. **Chronic silicosis** may result from prolonged inhalation of excessive levels of respirable silica dust, and may take many years of exposure to develop. A second type, **accelerated silicosis**, may occur in a relatively shorter period of time from the inhalation of intense excessive levels of respirable silica dust. **Acute silicosis**, the third type, develops rapidly and has been reported in occupations such as sand blasting and drilling through silica-containing rock. Cases of acute silicosis and complicated cases of chronic silicosis and accelerated silicosis can be fatal. It may also increase the risk of other irreversible and serious disorders including scleroderma (a disease affecting the skin, joints, blood vessels and internal organs) and other auto-immune disorders.

Carcinogen Status:
Inhalation of dust, including crystalline silica dust, is considered by medical authorities to increase the risk of lung disease due to tobacco smoking. Crystalline silica (inhaled in the form of quartz or cristobalite from occupational sources) has been classified by The International Agency for Research on Cancer (IARC) as carcinogenic to humans (Group 1). However the research on this is inconclusive and ASCC/NOHSC has not classified crystalline silica as a carcinogen,

ASCC/NOHSC: No significant ingredient is classified as carcinogenic by NOHSC.

NTP: Silica (quartz) is classed by NTP as a known carcinogen to humans.
IARC: Silica (quartz) is classed by IARC as being carcinogenic to humans.
As discussed above, this assessment relates only to silica that is capable of being inhaled into the oxygen exchange areas of the lungs.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:
Silica Sands form a neutral slurry when mixed with water; are non-toxic to aquatic and terrestrial organisms; and are not biodegradable.
Persistence and degradability:
Persistent and have a low degradability.
Mobility:
Low mobility expected in a landfill situation.

SECTION 13 - DISPOSAL CONSIDERATIONS

Silica Sands and crystalline silica itself can be treated as a common waste for disposal, or dumped into a landfill site in accordance with local authority guidelines. Recycling into construction activities is usually a practicable alternative.

Measures should be taken to prevent dust generation during disposal and exposure and personal precautions should be observed (see section 8 above).

SECTION 14 - TRANSPORT INFORMATION

UN Number:	None allocated.
Class:	None allocated.
Subsidiary Risk 1:	None allocated.
Packaging Group:	None allocated.
Hazchem Code:	None allocated.
DG Class:	None allocated
EPG:	None.
Incompatibilities:	None
Proper Shipping Name:	None allocated.
Marine Pollutant:	No.

SECTION 15 - REGULATORY INFORMATION

Poisons Schedule: Not scheduled.

Crystalline silica in the form of respirable dust is classified as **hazardous** according to the Australian Safety and Compensation Council ASCC (formerly NOHSC) Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3rd Edition.

Silica Sands and crystalline silica itself are classified as Non-Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Exposures by inhalation to high levels of dust may be regulated under the Hazardous Substances Regulations (State and Territory) as they are applicable to Respirable Crystalline Silica, requiring exposure assessment, and control of inhalation exposure below the NES.

Persons who have potential for exposure to respirable crystalline silica dust above the NES may be required by regulations to have a periodic health surveillance including chest x-ray (see relevant State Government Regulations and ASCC/NOHSC documentation).

SECTION 16 - OTHER INFORMATION

Emergency Contact Numbers:

Poisons Information Centre: 13 11 26
Emergency Services: 000

Additional Information:
Australian Standards References:

AS/NZS 1336	Recommended practices for occupational eye protection
AS/NZS 1715	Select, use and maintenance of respiratory protective devices
AS/NZS 1716	Respiratory protective devices
AS 2161	Industrial safety gloves and mittens (excluding electrical and medical gloves)

National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003), April 2003, National Occupational Health and Safety Commission.

Please read all labels/dockets carefully before using product.

END OF MSDS