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MATERIAL SAFETY DATA SHEET (MSDS) ZIRCON SAND PRODUCTS

IDENTIFICATION & COMPOSITION

Product Name	: MOMA STANDARD GRADE ZIRCON
CAS Number	: 14940-68-2
EINECS No.	: 239-019-6
Dangerous Goods	
Class and Subsidiary Risk	: None Allocated
Hazchem Code	: None Allocated
Poisons Schedule	: None Allocated
Uses	: Raw material for steelmaking refractories, glassmaking refractories, traditional ceramics, zirconia manufacture, zirconium manufacture, glass additive and foundry uses.

Physical Description/Properties	
Appearance (Dry)	: Brownish free flowing sand. Odourless and tasteless.
Melting Point/Boiling Point	: 2200°C
Vapour Pressure	: Not applicable
Specific Gravity	: 4.6 - 4.8
Flashpoint	: Not applicable
Flammability	: Not applicable
Solubility in Water	: Insoluble
Other Properties	
pH	: 4 - 8
Bulk Density	: 2700 – 2900 Kg/m ³
Grain size (D50)	: 55 – 100 micron

Ingredients

Ingredients	CAS Number	Weight %
Zircon	149040-68-2	98 - 99%
Rutile	1317-80-2	0 – 0.2%
Leucoxene/Zircon	103170-28-1	0-0.2%
Monazite		0.2% approx
Kyanite	149040-68-2	0.1-1.5%
Quartz	14808-60-7	up to 0.5%

Chemical Analysis

Chemical Name	Typical Weight
ZrO ₂ + HfO ₂	65.0 – 66.8%
SiO ₂	31 – 33.5%
TiO ₂	0.05 – 0.25%
Fe as Fe ₂ O ₃	0.05 – 0.2%
Cr ₂ O ₃	<35ppm
Al ₂ O ₃	0.25 – 1.0%
MgO	0.01 – 0.05%
CaO	0.01 – 0.05%
P ₂ O ₅	0.06 – 0.15%
Pb	<80ppm
U + Th	450 –500 ppm



Kenmare Moma Processing (Mauritius) Limited

Company R.E.L No. 100018098
Company NUIT No. 40099812

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Health Effects

Acute:

Swallowed

Non-toxic. There are no known hazards resulting from accidental ingestion as may occur during normal handling. Swallowing a large amount may cause irritation to the digestive system due to abrasiveness.

Eye

Solid and dust can be moderately irritating due to abrasiveness.

Skin

Low hazard.

Inhaled

Normally regarded as general nuisance dust, but can be irritating if inhaled at high concentration.

First Aid

Swallowed: First aid is unlikely to be required, but if necessary wash mouth out with water ensuring the mouthwash is not swallowed. Seek medical attention as a precaution if discomfort occurs.

Eye: Hold eyelid open and flush with plenty of clean water. Continue for at least 15 minutes or until grit is removed. Seek medical attention if soreness or irritation persists.

Skin: Gently remove contaminated clothing to avoid generating dust. Wash material from the skin. If repeated contact results in skin irritation, seek medical advice. Launder clothing before re-use.

Inhaled: Move to fresh air. Blow nose to remove particulates from nasal passages. If any adverse reaction develops, seek medical attention.

First Aid Facilities: Eye wash facilities

Advice to Doctor Treat symptomatically

Chronic:

Silica Crystalline silica is a known cause of lung fibrosis (silicosis). It has also been classified as a human carcinogen. Zircon Sand contains a small amount of free quartz, and precautions should be taken to avoid inhaling the dust.

Radiation: In common with many minerals, Zircon contains very low levels of naturally occurring radioactive elements of the uranium and thorium series. The main radiological hazard from the product is internal exposure to alpha particles given off by inhaled dust. Prolonged exposure to low level gamma radiation from bulk or bagged stockpiles of Zircon may present a lesser, external hazard.

Precautions for use

Exposure Standards: Inhalable general nuisance dust TWA – 10mg/m³ (Occupational)

Respirable free silica TWA – 0.2mg/m³

Radiation (combined alpha and gamma) exposure should be as low as reasonably achievable, (ALARA), but should not exceed a total of 100 milli-seiverts over 5 consecutive years.

Engineering Controls: Ventilation requirements will depend on handling methods and the amount in use, but should be sufficient maintain dust levels below exposure limits. Points of dust generation such as conveyor and hopper discharges should be equipped with an effective extraction system.

Personal Protection: Safety glasses or goggles. If risk of inhaling dust is present, wear at minimum, an approved P1 respirator (disposable or cartridge type)

Flammability: Not applicable

SAFETY HANDLING INFORMATION

Transport may be regulated in some countries, although the product is not generally regarded as a transport hazard. Not classified as radioactive pursuant to paragraph 107 of IAEA TS-R-1 regulations. Trucks however should be covered when transporting dry bulk product to prevent dust creation. Storage areas should be ventilated and dust generation minimised when handling.

Spills and Disposal: Wear safety equipment as for normal handling. Avoid generating dust. Vacuum up if possible, otherwise sweep up and re-cycle. If the spilled product is not suitable for re-use, damp down, collect and where possible return to manufacturer for re-processing.

Otherwise dispose of to an approved landfill site and cover with clean fill.

Fire/Explosion Hazard: Not applicable

Other Information:

The material is unlikely to cause any environmental damage. It is insoluble in water and is unlikely to contaminate waterways or food chains.

Additional Contact Points

Process Manager: +258 843025671

Environmental Manager: +258 8439 81681

Emergency Number (24hours): +258 8226 65870