



SAFETY DATA SHEET

ZIRCON MAGS

Infosafe No.: LPYZB

ISSUED Date : 13/08/2015

ISSUED by: SIBELCO AUSTRALIA LIMITED

1. IDENTIFICATION

GHS Product Identifier

ZIRCON MAGS

Company Name

SIBELCO AUSTRALIA LIMITED

Address

49-55 Woodlands Drive Braeside
Vic 3195 Australia

Telephone/Fax Number

Tel: (03)9586 5400

Fax: (03)9586 5413

Emergency phone number

1800 638 556

Recommended use of the chemical and restrictions on use

No commercial use

Other Names

Name	Product Code
ZIRCON PLANT REJECT	

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture

Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Eye damage/irritation 2A

Skin corrosion/irritation category 2

Signal Word (s)

WARNING

Hazard Statement (s)

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Pictogram (s)

Exclamation mark



Precautionary statement – Prevention

P264 Wash contaminated skin thoroughly after handling

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response

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

P337+P313 If eye irritation persists: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P332+P313 If skin irritation occurs: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before re-use.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Information on Composition**

Contains <0.1% respirable crystalline silica in the form of quartz. Contains isotopes Uranium 238 and Thorium 232. The combined specific Activity of Thorium and Uranium in this product is <53 Bq/g.

Ingredients

Name	CAS	Proportion
Tourmaline		> 50 %
Zircon		<25 %
Monazite		<25 %
Crystalline Silica (Quartz)	14808- 60- 7	<1 %
Thorium	7440- 29- 1	2. 03 %
Uranium	7440- 61- 1	1270ppm

4. FIRST-AID MEASURES**Inhalation**

If inhaled, remove affected person from contaminated area. Blow nose to remove particulates from nasal passage. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

Ingestion

Do not induce vomiting. Wash out mouth thoroughly with water. Seek medical attention.

Skin

Remove all contaminated clothing immediately. Wash affected area thoroughly with soap and water. Wash contaminated clothing before reuse or discard. Seek medical attention.

Eye contact

If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for several minutes until all contaminants are washed out completely. Seek medical attention. Mineral left in contact with the eye may cause complications.

First Aid Facilities

Eyewash, safety shower and normal washroom facilities.

Advice to Doctor

Treat symptomatically.

Other Information

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use appropriate fire extinguisher for surrounding environment.

Hazards from Combustion Products

Under fire conditions this product may emit toxic and/or irritating fumes and gases.

Specific Hazards Arising From The Chemical

The product is not combustible.

Decomposition Temperature

Not available

Precautions in connection with Fire

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Increase ventilation. Evacuate all unprotected personnel. Wear sufficient respiratory protection and full protective clothing to prevent exposure. Vacuum up if possible, otherwise sweep up and re-cycle. If the spilled material is not suitable for re-use, damp down, collect and where possible return to manufacturer for reprocessing. Sweep up material avoiding dust generation or dampen spilled material with water to avoid airborne dust, then transfer material to a suitable container. Wash surfaces well with soap and water. Seal all wastes in labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid inhalation of dust, and skin or eye contact. Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of dust in the work atmosphere. Maintain high standards of personal hygiene i.e. Washing hands prior to eating, drinking, smoking or using toilet facilities.

Trucks should be sheeted to approved standard and tailgate also sealed to prevent dispersion of dust when bulk Mineral Sand Concentrate is transported. Vehicles should be washed down to clean in preference to sweeping. Drivers/Cleaners should wear respiratory protection when cleaning.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area, out of direct sunlight and moisture. Store in suitable, labelled containers. Keep containers tightly closed. Store away from incompatible materials. Ensure that storage conditions comply with applicable local and national regulations.

Under some circumstances, gamma exposure from extended proximity to bulk stockpiles can provide a significant source of radiation exposure. In addition, bulk higher activity material stored in a closed space (e.g. a warehouse) requires ventilation to ensure radon does not accumulate (a minor exposure pathway but one that should be considered).

Storage areas must be identified with radiation controlled signs and restricted entry signs.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

No exposure standards have been established for this material. However, the available exposure limits for ingredients are listed below:

Crystalline Silica (Quartz)

TWA: 0.1 mg/m³ (respirable)

Uranium

TWA: 0.2 mg/m³

STEL: 0.6 mg/m³

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

Radiation Exposure:

Occupational exposure should be as low as reasonably achievable, (ALARA principle), but should not exceed 20 milliseiverts per year (mSv/y) (ICRP)

Recommendation of the International Commission on Radiological Protection, ICRP Publication 60

Biological Limit Values

Determinant: Uranium in urine

Value: 200ug/l

Sampling time: end of shift

Source: American Conference of Industrial Hygienists (ACGIH)

Appropriate Engineering Controls

This substance is hazardous and should be used with a local exhaust ventilation system, drawing solid/dust away from workers' breathing zone. If the engineering controls are not sufficient to maintain concentrations of particulates below the exposure standards, suitable respiratory protection must be worn.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable dust/particulate filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements.

Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection

Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations.

Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Light brown to black sand

Colour

Light brown to black

Odour

Odourless

Decomposition Temperature

Not available

Melting Point

3370°C

Boiling Point

Not available

Solubility in Water

Not available

Specific Gravity

4.0-4.3

pH

Not available

Vapour Pressure

Not available

Vapour Density (Air=1)

Not available

Evaporation Rate

Not available

Odour Threshold

Not available

Viscosity

Not available

Partition Coefficient: n-octanol/water

Not available

Density

Bulk density: 2400-2700kg/m³

Flash Point

Not available

Flammability

Non-combustible solid

Auto-Ignition Temperature

Not available

Explosion Limit - Upper

Not available

Explosion Limit - Lower

Not available

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions of storage and handling.

Reactivity and Stability

Not available

Conditions to Avoid

Extremes of temperature and direct sunlight. Moisture.

Incompatible materials

Not available

Hazardous Decomposition Products

Thermal decomposition may result in the release of toxic and/or irritating fumes.

Possibility of hazardous reactions

Not available

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information

No toxicity data available for this product.

Ingestion

Ingestion of this product may irritate the gastric tract causing nausea and vomiting.

Inhalation

Inhalation of dusts may irritate the respiratory system.

Skin

Causes skin irritation. Skin contact will cause redness, itching and swelling. Repeated exposure may cause skin dryness and cracking and may lead to dermatitis.

Eye

Causes serious eye irritation. On eye contact this product will cause tearing, stinging, blurred vision, and redness.

Respiratory sensitisation

Not expected to be a respiratory sensitiser.

Skin Sensitisation

Not expected to be a skin sensitiser.

Germ cell mutagenicity

Not considered to be a mutagenic hazard.

Carcinogenicity

Not considered to be a carcinogenic hazard.

Thorium is listed as a Group 1: Carcinogenic to humans according to International Agency for Research on Cancer (IARC).

Reproductive Toxicity

Not considered to be toxic to reproduction.

STOT-single exposure

Not expected to cause toxicity to a specific target organ.

STOT-repeated exposure

Not expected to cause toxicity to a specific target organ.

Aspiration Hazard

Not expected to be an aspiration hazard.

Other Information

RADIATION: In common with many naturally occurring mineral products, this product contains extremely low levels of naturally occurring radioactive elements - principally uranium and thorium. The main radiological hazard from the product is internal exposure to alpha particles given off in small amounts by inhaled dust. Low level gamma radiation from bulk or bagged stockpiles may present a lesser, external hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

No ecological data are available for this material.

Persistence and degradability

Not available

Mobility

Not available

Bioaccumulative Potential

Not available

Other Adverse Effects

Not available

Environmental Protection

Prevent this material entering waterways, drains or sewers.

13. DISPOSAL CONSIDERATIONS

Disposal considerations

Disposal must be in accordance with Federal, State and Local Council regulations. If approved, may be transferred to an approved landfill site or returned to the manufacturer for disposal.

Note: Many states are developing new regulations for the disposal of waste containing Naturally Occurring Radioactive Materials (NORM). Consult and comply with current regulations.

14. TRANSPORT INFORMATION

Transport Information

This material is classified as a Class 7 (Radioactive Material) Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition)

Class 7 Dangerous Goods are incompatible in a placard load with any of the following:

- Class 1, Explosives
- Division 2.1, Flammable Gases
- Class 3, Flammable Liquids
- Division 4.1, Flammable Solids
- Division 4.2, Spontaneously Combustible Substances
- Division 4.3, Dangerous When Wet Substances
- Division 5.1, Oxidising Agents
- Division 5.2, Organic Peroxides
- Class 8, Corrosive Substances

And are incompatible with food and food packaging in any quantity.

Reference should also be made to the Code for the Safe Transport of Radioactive Material.(2014)

Marine Transport (IMO/IMDG):

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

Class/Division: 7

UN No:

2912

Proper Shipping Name: RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I)

Packing Group: Not applicable

EMS: F-I, S-S

Special Provisions: 172, 317, 325

Air Transport (ICAO/IATA):

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

Class/Division: 7

UN No:

2912

Proper Shipping Name: RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I)

Packing Group: Not applicable

Packaging Instructions (passenger & cargo):

Not available

Packaging Instructions (cargo only):

Not available

Hazard Label:

Radioactive

Special Provisions:

A23, A78, A139

U.N. Number

2912

UN proper shipping name

RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I)

Transport hazard class(es)

7

IERG Number

43

IMDG Marine pollutant

No

Transport in Bulk

Not available

Special Precautions for User

Not available

15. REGULATORY INFORMATION

Regulatory information

Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule

Not Scheduled

Other Information

The regulations pertaining to radiological protection vary from country to country. It is the responsibility of the buyer to ensure that those regulations are met in accordance with his/her country's laws. Some of the regulating bodies for Australia are:

Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)

State Environmental Protection Authorities

Federal Department of the Arts, Sports, Environment, Tourism and Territories

State Environmental Protection Authorities

State Departments of Mines

State Departments of Safety and Health

16. OTHER INFORMATION

Date of preparation or last revision of SDS

SDS Reviewed: August 2015

Supersedes: June 2015

References

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice

Standard for the Uniform Scheduling of Medicines and Poisons.

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants, Safe work Australia.

American Conference of Industrial Hygienists (ACGIH)

Globally Harmonised System of classification and labelling of chemicals.

Contact Person/Point

Emergency Advice: Chemical Safety International ERS - 1800 638 556 (24 Hours)

PLEASE NOTE:

The information contained herein is based on data available to Sibelco Australia Limited from both our own technical sources and from recognised published references and is believed to be both accurate and reliable. Sibelco Australia Limited has made no effort to censor nor to conceal deleterious aspects of this product. Since we cannot anticipate or control the many different conditions under which this information and our products may be used, each user should review these recommendations in the specific context of the intended application and confirm whether they are appropriate. It is

therefore recommended that you undertake your own risk assessment in relation to your method of handling and proposed use of this product. Sibelco Australia Limited accepts no liability whatsoever for damage or injury caused from the use of this information or of suggestions contained herein.

END OF SDS

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