



SAFETY DATA SHEET MICROSILICA/SILICA FUME REVISION 3, DATE 01 JAN 22

1. IDENTIFICATION

Product Name	Microsilica/Silica Fume
Other Names	Amorphous silica fume; Densified Microsilica; Undensified Microsilica
Uses	Used as concrete additive, refractory applications, strengthening agent.
Chemical Family	No Data Available
Chemical Formula	Unspecified
Chemical Name	Fumes, silica
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)

Not Scheduled



Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories Carcinogenicity - Category 1A

Pictograms



Signal Word Danger

Hazard Statements **H350i** May cause cancer by inhalation.

Precautionary Statements

Prevention	P201	Obtain special instructions before use.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	P308 + P313	IF exposed or concerned: Get medical attention.
Storage	P405	Store locked up.
Disposal	P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Amorphous silica fume	Unspecified	69012-64-2	<=100 %
Crystalline silica (Quartz)	SiO ₂	14808-60-7	<0.5 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth, then drink plenty of water. Get medical advice/attention if you feel unwell.

Eye IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

Skin IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention.

Advice to Doctor If exposed or concerned, get medical advice/attention. Treat symptomatically.

Medical Conditions Aggravated by Exposure No information available.

5. FIRE FIGHTING MEASURES

General Measures	Move containers from fire area if you can do it without risk.
Flammability Conditions	Non-combustible material.
Extinguishing Media	If material is involved in a fire, use extinguishing media appropriate to surrounding fire conditions.
Fire and Explosion Hazard	Not considered a significant fire risk, however containers may burn.
Hazardous Products of Combustion	Decomposition may produce irritating and/or toxic fumes.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Do not touch or walk through spilled material. Clean up all spills immediately! Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Released material should be collected in suitable containers. Use dry clean up procedures and avoid generating dust.
Containment	Stop leak if you can do it without risk. Prevent dust cloud.
Decontamination	No information available.
Environmental Precautionary Measures	Prevent spillage from entering drains, sewers or water courses.
Evacuation Criteria	Immediately isolate spill or leak area. Keep unauthorised personnel away.
Personal Precautionary Measures	Control personal contact with the substance, by using protective equipment and dust respirator (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Protect containers against physical damage. Keep away from incompatible materials (see SECTION 10). Store locked up.
Container	Keep in the original container, Polyethylene or polypropylene container. Check all containers are clearly labelled and free from leaks.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	For Fumed silica (respirable dust): - Safe Work Australia Exposure Standard: TWA = 2 mg/m ³ COMPONENT: Crystalline silica (Quartz): - Safe Work Australia Exposure Standard: TWA = 0.05 mg/m ³ (respirable dust); Known to have carcinogenic potential for humans (Carc. 1A).
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Protection Equipment	- Respiratory protection: Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures. Recommended: Type AX-P Filter of sufficient capacity. Use approved positive flow mask if significant quantities of dust becomes airborne (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side shields; or as required, chemical goggles. - Hand protection: Wear protective gloves. Recommended: Disposable polythene gloves, cotton gloves or light-weight rubber gloves, with barrier cream. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety footwear.
Special Hazards Precautions	Heating Microsilica above 1000 °C can result in the formation of crystalline SiO ₂ -modifications, as cristobalite/tridymite, which may cause pulmonary fibrosis (silicosis).
Work Hygienic Practices	Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash it before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Ultrafine powder
Odour	Odourless
Colour	White to Dark grey
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	1,550 - 1,570 °C
Freezing Point	No Data Available
Solubility	Insoluble/slightly soluble in water
Specific Gravity	2.2 - 2.3 (Water = 1)
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	approx. 150 - 700 kg/m ³
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available

Octanol Water Coefficient	No Data Available
Particle Size	0.15 (mean µm)
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	80 wt% of primary particles have a diameter <5 µm
Potential for Dust Explosion	Microsilica is not combustible and the dust entails no danger of explosion.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible.
Reactions That Release Gases or Vapours	Decomposition may produce irritating and/or toxic fumes.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Product is considered stable. *Unstable in the presence of incompatible materials.
Conditions to Avoid	Avoid generating dust.
Materials to Avoid	Incompatible/reactive with hydrofluoric acid and other fluorine-containing compounds, strong oxidisers, manganese trioxide, chlorine trioxide, strong alkalis, metal oxides, concentrated orthophosphoric acid, vinyl acetate.
Hazardous Decomposition Products	Decomposition may produce irritating and/or toxic fumes.
Hazardous Polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<ul style="list-style-type: none"> - Acute toxicity: The material is a physical irritant to the gastro-intestinal tract. - Skin corrosion/irritation: Finely divided dust may cause mechanical irritation and dehydration. - Eye damage/irritation: Finely divided dust may cause mechanical irritation and dehydration. - Respiratory/skin sensitisation: No information available. - Germ cell mutagenicity: No information available. - Carcinogenicity: May cause cancer by inhalation. Silica, amorphous is Classified by the IARC Monographs as "Not classifiable as to its carcinogenicity to humans" (Group 3). Silica dust, crystalline, in the form of quartz or cristobalite is Classified by the IARC Monographs as "Carcinogenic to humans" (Group 1). - Reproductive toxicity: No information available. - STOT (single exposure): Finely divided dust may cause irritation and dehydration of mucous membranes. - STOT (repeated exposure): COMPONENT: Crystalline silica (Quartz) Causes damage to organs (lungs) through prolonged or repeated exposure if inhaled.
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- Aspiration toxicity: No information available.

Carcinogen Category

Carc. 1A

12. ECOLOGICAL INFORMATION

Ecotoxicity	No information available.
Persistence/Degradability	No information available.
Mobility	No information available.
Environmental Fate	Do not discharge into sewer or waterways.
Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Recycle, wherever possible, or dispose of contents/container in an authorised landfill and in accordance with local/regional/national regulations.
Special Precautions for Land Fill	No information available.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	Microsilica/Silica Fume
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	Microsilica/Silica Fume
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available

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Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	Microsilica/Silica Fume
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT

Proper Shipping Name	Microsilica/Silica Fume
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name	Microsilica/Silica Fume
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name	Microsilica/Silica Fume
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available

Special Provision

No Data Available

Comments

NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION**General Information**

No Data Available

Poisons Schedule (Aust)

Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code

Not Assessed

National/Regional Inventories**Australia (AIRC)**

Listed

Canada (DSL)

Not Determined

Canada (NDSL)

Not Determined

China (IECSC)

Not Determined

Europe (EINECS)

Not Determined

Europe (REACH)

Not Determined

Japan (ENCS/METI)

Not Determined

Korea (KECI)

Not Determined

Malaysia (EHS Register)

Not Determined

New Zealand (NZIoC)

Not Determined

Philippines (PICCS)

Not Determined

Switzerland (Giftliste 1)

Not Determined

Switzerland (Inventory of Notified Substances)

Not Determined

Taiwan (NCSR)

Not Determined

USA (TSCA)

Not Determined

16. OTHER INFORMATION

Related Product Codes	SIFUME1000, SIFUME1001, SIFUME1002, SIFUME1003, SIFUME1100, SIFUME1200, SIFUME1201, SIFUME1202, SIFUME1205, SIFUME1600, SIFUME2000, SIFUME2001, SIFUME2185, SIFUME2192, SIFUME2285, SIFUME2292, SIFUME2296, SIFUME3000, SIFUME3010, SIFUME3011, SIFUME6100, SIFUME6102, SIFUME6112, SIFUME6122, SIFUME7000, SIFUME8000, SIFUME8500, SIFUME9000, SIFUME9001, SIFUME9002, SIFUME9100, SIFUME9200, SIFUME9500
Revision	3
Revision Date	01 Jan 2022
Key/Legend	<p>< Less Than > Greater Than</p> <p>AICS Australian Inventory of Chemical Substances atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm² Square Centimetres CO₂ Carbon Dioxide COD Chemical Oxygen Demand deg C (°C) Degrees Celcius EPA (New Zealand) Environmental Protection Authority of New Zealand deg F (°F) Degrees Farenheit g Grams g/cm³ Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH₂O Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre lb Pound LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. ltr or L Litre m³ Cubic Metre mbar Millibar mg Milligram mg/24H Milligrams per 24 Hours mg/kg Milligrams per Kilogram mg/m³ Milligrams per Cubic Metre Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present. mm Millimetre mmH₂O Millimetres of Water mPa.s Millipascals per Second N/A Not Applicable NIOSH National Institute for Occupational Safety and Health NOHSC National Occupational Heath and Safety Commission OECD Organisation for Economic Co-operation and Development Oz Ounce PEL Permissible Exposure Limit Pa Pascal ppb Parts per Billion ppm Parts per Million ppm/2h Parts per Million per 2 Hours ppm/6h Parts per Million per 6 Hours psi Pounds per Square Inch R Rankine RCP Reciprocal Calculation Procedure STEL Short Term Exposure Limit</p>

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight