Infosafe No™	1CH5Z	Issue Date : November 2018	ISSUED by CHEMSUPP

Product Name : **SILICON**

Classified as hazardous

1. Identification

GHS Product Identifier: SILICON

Company Name: CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)

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Recommended use of the chemical and restrictions on use: Alloying agent for steels, aluminium, bronze, copper, and iron (ferrosilicon); production of halogenated silanes; organosilicon compounds (silicone resins); silicon carbide; spring steels; deoxidizer in steel manufacture; semiconductor in integrated circuits, rectifiers, transistors, diodes, solar batteries, other solid state devices (single crystals doped with boron or phosphorus); special refractories.

Other Names

Name	Product Code
SILICON METAL POWDER TG	ST054
Silicon powder	

Other Information

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture: Flammable Solids: Category 2

Signal Word (s): WARNING

Hazard Statement (s): H228 Flammable solid.

Pictogram (s): Flame



Precautionary statement – Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response: P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Precautionary statement – Disposal: P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Chemical Characterization: Solid.

Ingredients

Name	CAS	Proportion	Hazard Symbol	Risk Phrase
Silicon	7440-21-3	100 %		

4. First-aid measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice.
Skin	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek medical advice /attention depending on the severity.
Eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open.In all cases of eye contamination it is a sensible precaution to seek medical advice.
First Aid Facilities	Eye wash fountains and safety showers should be available for emergency use.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Specific Methods	DO NOT USE WATER, FOAM or CO2. Dousing a metallic fire with water may generate hydrogen gas, an extremely dangerous explosion hazard, particularly if fire is in a confined area (e.g. building, cargo hold, etc.) Use DRY sand, dry chemical, graphite powder, dry sodium chloride based or or alcohol-resistant foam extinguishers. Confining or smothering metal fire is preferable to applying water. If safe to do so, move undamaged containers from the fire area.
Specific hazards arising from the chemical	May explode from heating, shock, friction or contamination. May be ignited by friction, heat, sparks or flame. Dust or fumes may form explosive mixtures with air. Will burn with intense heat. May re-ignite after fire is extinguished. Fire may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. May react explosively with water.
Hazchem Code	1Z
Precautions in connection with Fire	SCBA and structural firefighter's uniform may provide limited protection.

6. Accidental release measures

Spills & Disposal	Eliminate all ignition sources (no smoking, flares, sparks or flame) within at least 25m. Do NOT touch or walk through spilled material. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
Personal Precautions	Avoid contact with skin, eyes, nose, mouth. Do not breathe dust. Evacuate the area of all non-essential personnel.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.

7. Handling and storage

Precautions for Safe Handling	Avoid ingestion and inhalation of dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Keep containers closed when not in use. Work in fumehood and use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wear suitable protective clothing. Contaminated clothing should be removed and washed before re-use. Wash hands and face thoroughly after working with material. Keep container dry.
Conditions for safe storage, including any incompatabilities	Keep away from heat and other sources of ignition. Keep in a cool, dry, well-ventilated place. Keep container tightly closed

8. Exposure controls/personal protection

Occupational exposure limit values	**Name**	**STEL**	**TWA**

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		mg/m3	ppm	mg/m3	ppm	Footnote
	Silicon			10		

Other Exposure Information These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.
A time weighted average (TWA) has been established for Silicon (Safe Work Australia) of 10 mg/m3. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.

Appropriate engineering controls In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.

Respiratory Protection Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

Eye Protection The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Hand Protection Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Personal Protective Equipment Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

Footwear Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hygiene Measures Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Solid.
Appearance	Dark brown powder.
Odour	Odourless.
Melting Point	1410 °C
Boiling Point	2355 °C
Solubility in Water	Insoluble
Solubility in Organic Solvents	Soluble in a mixture of nitric and hydrofluoric acids and in alkalies. Insoluble in nitric acid, and hydrochloric acid.
Specific Gravity	2.329 (water = 1)
Flammability	Flammable in powder form.
Molecular Weight	28.08

10. Stability and reactivity

Chemical Stability	Stable.
Conditions to Avoid	Heat, ignition sources, incompatible materials.
Incompatible Materials	Alkali carbonates, aluminium plus lead oxide, calcium, cesium carbide, chlorine, fluorine, sodium-potassium alloy, oxidizers, metallic halides, interhalogens, acids, strong bases, powdered metals, CoF2, MnF3, Rb2C2. When heated, will react with water or steam to produce hydrogen gas.
Hazardous Decomposition Products	Silicon dioxide and hydrogen gas.

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Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral	LD50 (rat): 3160 mg/kg
Ingestion	Harmful if ingested. May cause gastroenteritis with abdominal pain, nausea, vomiting and diarrhea. Systemic effects may follow and may include ringing of the ears, dizziness, elevated blood pressure, blurred vision and tremors.
Inhalation	Harmful if inhaled. May cause irritation to the mucous membranes and respiratory tract. Symptoms may be coughing, shortness of breath, sore throat and runny nose.
Skin	Causes irritation, redness, swelling, itching and pain.
Eye	May cause irritation, conjunctivitis, redness, swelling, itching, pain and tearing.
Carcinogenicity	No evidence of carcinogenic properties.
Chronic Effects	High concentrations of dust may cause pulmonary irritation. Powder of dust may cause eye irritation or conjunctivitis.
Mutagenicity	No evidence of mutagenic properties.

12. Ecological information

Ecotoxicity	No ecological data available for this product.

13. Disposal considerations

Disposal Considerations	Dispose of according to relevant local, state and federal government regulations.

14. Transport information

U.N. Number	1346
UN proper shipping name	SILICON POWDER, AMORPHOUS
Transport hazard class(es)	4.1
Hazchem Code	1Z
Packaging Method	3.8.4.1
Packing Group	III
EPG Number	4A1
IERG Number	29

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	Not Scheduled

16. Other Information

Literature References

'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia.
Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997.
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007.
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011.
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010.
Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.
Safe Work Australia, 'Hazardous Substances Information System, 2005'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.

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Empirical Formula & Structural Formula	Si

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