1. IDENTIFICATION

Product Name	**Sodium metasilicate, anhydrous**
Other Names	Disodium metasilicate
Uses	Manufacture and formulation of substances; Industrial, consumer and professional uses.
Chemical Family	No Data Available
Chemical Formula	Na2SiO3
Chemical Name	Silicic acid (H2SiO3), disodium salt
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty 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) Schedule 5

Globally Harmonised System

Hazard Classification		Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)	
Hazard Categories		Corrosive to Metals - Category 1	
		Skin Corrosion/Irritation - Category 1B	
		Serious Eye Damage/Irritation - Category 1	
		Specific Target Organ Toxicity (Single Exposure) - Category 3	
Pictograms			
Signal Word		Danger	
Hazard Statements		**H290**	May be corrosive to metals.
		H314	Causes severe skin burns and eye damage.
		H335	May cause respiratory irritation.
Precautionary Statements	Prevention	**P260**	Do not breathe dust.
		P280	Wear protective gloves/protective clothing/eye protection/face protection.
		P271	Use only outdoors or in a well-ventilated area.
	Response	**P303 + P361 + P353**	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
		P310	Immediately call a POISON CENTER or doctor/physician.
		P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P390	Absorb spillage to prevent material damage.
		P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
		P363	Wash contaminated clothing before reuse.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
	Storage	**P403 + P233**	Store in a well-ventilated place. Keep container tightly closed.
		P406	Store in corrosive resistant container with a resistant inner liner.
		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	Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications	Health Hazards	**6.1D**	Substances that are acutely toxic - Harmful
		6.1E	Substances that are acutely toxic –May be harmful, Aspiration hazard
		8.1A	Substances that are corrosive to metals
		8.2C	Substances that are corrosive to dermal tissue UN PGIII
		8.3A	Substances that are corrosive to ocular tissue
	Environmental Hazards	**9.3C**	Substances that are harmful to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Disodium metasilicate, anhydrous	No Data Available	6834-92-0	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth, then drink 200 - 400 ml of water. Do NOT induce vomiting. Immediately call a Poison Centre or doctor/physician for advice.

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. Immediately call a Poison Centre or doctor/physician for advice. May cause permanent damage if eye is not immediately and thoroughly irrigated.

Skin IF ON SKIN (or hair): Remove contaminated clothing and shoes immediately. Flush skin and hair with running water for at least 15 minutes. For gross contamination, immediately flush contaminated clothing and skin with plenty of water before removing clothes. For minor skin contact, avoid spreading material on unaffected skin. Immediately call a Poison Centre or doctor/physician for advice. Wash contaminated clothing and shoes before reuse.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a Poison Centre or doctor/physician for advice. Apply resuscitation if victim is not breathing - Do not use direct mouth-to-mouth method if victim ingested or inhaled the substance; use alternative respiratory method or proper respiratory device. Administer oxygen if breathing is difficult.

Advice to Doctor Treat symptomatically. Keep victim calm and warm - Obtain immediate medical care. Ensure that attending medical personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves.

Medical Conditions Aggravated by Exposure No information available.

5. FIRE FIGHTING MEASURES

General Measures If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Avoid getting water inside containers.

Flammability Conditions Non-combustible; Material does not burn.

Extinguishing Media Use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction - Do not use water jets.

Fire and Explosion Hazard Containers may explode when heated. Contact with metals may evolve flammable hydrogen gas.

Hazardous Products of Combustion Fire or heat will produce irritating, toxic and/or corrosive gases, including Sodium oxides, Silicon oxides.

Special Fire Fighting Instructions Contain runoff from fire control water - Runoff may be toxic and/or corrosive and pollute waterways.

Personal Protective Equipment Liquid-tight chemical protective clothing (splash suit) in combination with self-contained breathing apparatus (SCBA) should be used. Structural firefighter's uniform is NOT effective for this material.

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 2X

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation - Ventilate enclosed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). Do not touch or walk through spilled material - Danger of slipping on spilled product. Avoid dust formation. Do not breathe dust and prevent contact with eyes, skin and clothing.
Clean Up Procedures	Collect material (sweep up, shovel) and place it into suitable plastic containers for later disposal (see SECTION 13); if appropriate, moisten first to prevent dusting.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	Cautiously neutralise remainder with dilute acid (preferably acetic acid); Then wash away with plenty of water.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.
Personal Precautionary Measures	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (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 - Use only outdoors or in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Do not breathe dust and prevent contact with eyes, skin and clothing. Wear protective gloves/protective clothing/eye protection/face protection; In case of inadequate ventilation, wear respiratory protection (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Protect from freezing. Protect from moisture (hygroscopic). Keep away from food and feedstuffs and incompatible materials (see SECTION 10). Store locked up.
Container	Keep in the original container or corrosive resistant container with a resistant inner liner. Compatible with (Stainless) steel; Incompatible with zinc, tin, aluminium, copper and their alloys.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3 (measured as inhalable dust). - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3 (total); TWA = 3 mg/m3 (respirable).
Exposure Limits	No Data Available
Biological Limits	Derived no-effect levels (DNELs): - Workers: Long-term, systemic effects: 6.22 mg/m3 (Inhalative); 1.49 mg/kg bw/d (Dermal). - Consumers: Long-term, systemic effects: 0.74 mg/kg bw/d (Oral); 1.55 mg/m3 (Inhalative); 0.74 mg/kg bw/d (Dermal). Predicted no-effect concentrations (PNECs): - Freshwater: 7.5 mg/L - Marine water: 1 mg/L - Intermittent release: 7.5 mg/L - STP: 1,000 mg/L
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: Wear respiratory protection in case of inadequate ventilation or if an inhalation risk exists. Recommended: Dust mask/respirator. - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Chemical goggles or face-shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards. - Hand protection: Wear protective gloves. Recommended: Impervious gloves, e.g. Nitrile rubber (full/splash contact). - Skin/body protection: Wear appropriate personal protective clothing to prevent skin contact. Recommended: Overalls, safety shoes. The type of protective equipment must be selected according to the concentration and amount of the hazardous substance(s) at the specific workplace.
Special Hazards Precaustions	No information available.

Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of workday. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Granules or powder
Odour	Odourless
Colour	White
pH	>12.5 1 % solution
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	± 1,089 °C
Freezing Point	No Data Available
Solubility	Soluble in water °C
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	0.90 - 1.30 kg/L
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	No Data Available
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	Hygroscopic.
Potential for Dust Explosion	No information available.
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; Material does not burn.
Reactions That Release Gases or Vapours	Fire or heat will produce irritating, toxic and/or corrosive gases, including Sodium oxides, Silicon oxides.
Release of Invisible Flammable Vapours and Gases	Contact with metals may evolve flammable hydrogen gas.

10. STABILITY AND REACTIVITY

General Information	The solution in water is a strong base, it reacts violently with acid; Contact with metals may evolve flammable hydrogen gas. Reacts with halogens causing fire hazard.
Chemical Stability	Stable under recommended storage and handling conditions.
Conditions to Avoid	Avoid dust formation. Protect from moisture and avoid prolonged exposure to air.
Materials to Avoid	Incompatible/reactive with strong acids, halogens, metals (aluminum, zinc, tin, copper and their alloys).
Hazardous Decomposition Products	Fire or heat will produce irritating, toxic and/or corrosive gases, including Sodium oxides, Silicon oxides.
Hazardous Polymerisation	No information available.

11. TOXICOLOGICAL INFORMATION

General Information

- Acute toxicity: Symptoms of acute toxicity are due to high alkalinity - Corrosive on ingestion.
- Skin corrosion/irritation: Causes severe skin burns. Strongly alkaline - Corrosive to skin; Material will cause chemical burns.
- Eye damage/irritation: Causes serious eye damage. Strongly alkaline - Corrosive to eyes; Material will cause chemical burns and may cause permanent eye damage.
- Respiratory/skin sensitisation: Not sensitising (LLNA).
- Germ cell mutagenicity: No evidence of genotoxicity (in vitro/in vivo: negative).
- Carcinogenicity: No structural alerts.
- Reproductive toxicity: No information available.
- STOT (single exposure): Causes respiratory irritation; Severely irritating (corrosive) to the respiratory tract.
- STOT (repeated exposure): No information available.
- Aspiration toxicity: No information available.

Acute

Ingestion

Acute toxicity (Oral):
- LD50, Rat: 1,152 - 1,349 mg/kg bw.

Inhalation

Acute toxicity (Inhalation):
- LC50, Rat: >2.06 g/m3

Other

Acute toxicity (Dermal):
- LD50, Rat: >5,000 mg/kg bw.

Reproduction

Reproductive toxicity (Effects on fertility):
- NOAEL (Rat): >159 mg/kg bw/d.

Reproductive toxicity (Developmental toxicity):
- NOAEL (Mouse): >200 mg/kg bw/d.

Chronic

Ingestion

STOT - repeated exposure (Oral):
- NOAEL (Rat): 227 mg/kg bw/d.
- NOAEL (Mouse): 260 mg/kg bw/d.

Carcinogen Category None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, Fish (Brachydanio rerio): 210 mg/l (96 h). - EC50, Invertebrates (Daphnia magna): 1,700 mg/l (48 h). - EC50, Algae (Scenedesmus subspicatus): 207 mg/l (72 h) [biomass]; >345.4 mg/l (72 h) [growth rate].
Persistence/Degradability	Soluble silicates, upon dilution, rapidly depolymerise into molecular species indistinguishable from natural dissolved silica. They combine with ions like Ca, Mg, Fe, Al and others to end up as insoluble compounds similar to constituents of natural soils.
Mobility	No information available.
Environmental Fate	The alkalinity of this material will have a local effect on ecosystems sensitive to changes in pH. Prevent entry into drains and waterways.
Bioaccumulation Potential	The substance has no potential for bioaccumulation (inorganic).

Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container via a licensed disposal company in accordance with local/regional/national regulations. Neutralisation prior to disposal is advisory.
Special Precautions for Land Fill	Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

Land Transport (Australia)
ADG Code

Proper Shipping Name	DISODIUM TRIOXOSILICATE
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	37 Toxic And/Or Corrosive Substances Non-Combustible
UN Number	3253
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Land Transport (Malaysia)
ADR Code

Proper Shipping Name	DISODIUM TRIOXOSILICATE
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	37 Toxic And/Or Corrosive Substances Non-Combustible
UN Number	3253
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)
NZS5433

Proper Shipping Name	DISODIUM TRIOXOSILICATE
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
EPG	37 Toxic And/Or Corrosive Substances Non-Combustible
UN Number	3253
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)
US DOT

Proper Shipping Name	DISODIUM TRIOXOSILICATE
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
ERG	154 Substances - Toxic and/or Corrosive (Non-Combustible)
UN Number	3253
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

Sea Transport
IMDG Code

Proper Shipping Name	DISODIUM TRIOXOSILICATE
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	3253
Hazchem	2X
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-B
Marine Pollutant	No

Air Transport
IATA DGR

Proper Shipping Name	DISODIUM TRIOXOSILICATE
Class	8 Corrosive Substances
Subsidiary Risk(s)	No Data Available
UN Number	3253
Hazchem	2X
Pack Group	III
Special Provision	No Data Available

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

Dangerous Goods Classification	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)	Schedule 5

Environmental Protection Authority (New Zealand)
Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR003511

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	229-91-29
Europe (REACh)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Listed

16. OTHER INFORMATION

Related Product Codes	SOMESA1000, SOMESA1001, SOMESE1802, SOMESI1000, SOMESI1001, SOMESI1002, SOMESI1004, SOMESI1005, SOMESI1006, SOMESI1007, SOMESI1008, SOMESI1009, SOMESI1500, SOMESI2000, SOMESI2001, SOMESI2002, SOMESI2003, SOMESI2100, SOMESI2101, SOMESI2500, SOMESI2501, SOMESI2502, SOMESI2503, SOMESI2504, SOMESI2505, SOMESI2506, SOMESI2507, SOMESI2508, SOMESI3000, SOMESI3200, SOMESI3203, SOMESI3250, SOMESI3400, SOMESI3500, SOMESI3501, SOMESI4000, SOMESI4001, SOMESI4200, SOMESI4225, SOMESI4226, SOMESI4250, SOMESI4400, SOMESI4700, SOMESI4800, SOMESI4801, SOMESI4802, SOMESI4900, SOMESI5000, SOMESI5001, SOMESI5500, SOMESI5800, SOMESI5801, SOMESI5900, SOMESI6000, SOMESI6500, SOMESI7000, SOMESI7200, SOMESI8000, SOMESI8200
Revision	4
Revision Date	19 Feb 2018
Reason for Issue	Updated SDS
Key/Legend	**<** Less Than **>** Greater Than **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
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight