

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 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)

Schedule 5

Redox Ltd Corporate Office Sydney Locked Bag 15 Minto NSW 2566 Australia 2 Swettenham Road Minto NSW 2566 Australia All Deliveries: 4 Holmes Road Minto NSW 2566 Australia

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| Globally Harmonised Syste | em | | |
|---------------------------|------------|---|--|
| Hazard Classification | | Hazardous according to Chemicals (GHS) | the criteria of the Globally Harmonised System of Classification and Labelling of |
| Hazard Categories | | Corrosive to Metals - Ca | ategory 1 |
| | | Skin Corrosion/Irritation | ı - Category 1B |
| | | Serious Eye Damage/Irr | itation - Category 1 |
| | | Specific Target Organ T | oxicity (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): Take off immediately all contaminated clothing. Rinse skin with water or shower. |
| | | P310 | Immediately call a POISON CENTER or doctor. |
| | | 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 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)

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 1 or 2 glasses of water. Do NOT induce vomiting. For advice, contact a Poisons Information Centre or a doctor (at once). Never give anything by mouth to an unconscious person. | |
| Еуе | 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 flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes. | |
| Skin | IF ON SKIN (or hair): Remove and isolate contaminated clothing and shoes. Immediately flush skin and hair with running water for at least 15 minutes. Immediately call a Poison Centre or doctor/physician for advice. Wash contaminated clothing and shoes before reuse, or discard. *For minor skin contact, avoid spreading material on unaffected skin. | |
| 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. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. | |
| Advice to Doctor | Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Keep victim calm and warm. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. | |
| 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. Dike fire-control water for later disposal; do not scatter the material. Do not get water inside containers. |
|-------------------------------------|--|
| Flammability Conditions | Non-combustible; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. |
| 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 may produce irritating, corrosive and/or toxic gases, including Sodium oxides, Silicon oxides. |
| Special Fire Fighting Instructions | Contain runoff from fire control water - Runoff may be corrosive and/or toxic and cause pollution. |
| Personal Protective Equipment | Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing - It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. |
| 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. Do not ingest. Wear protective gloves/protective clothing/eye protection/face 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. 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). |
|-------------------------------|--|
| Exposure Limits | No Data Available |
| Biological Limits | 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. (refer to As/NZS 1715 & 1716). 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 | No Data Available |
| Freezing Point | No Data Available |
| Solubility | Soluble in water |
| Specific Gravity | No Data Available |
| Flash Point | No Data Available |
| Auto Ignition Temp | No Data Available |
| Evaporation Rate | No Data Available |
| Bulk Density | No Data Available |
| 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; substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. |
| Reactions That Release Gases or Vapours | Fire/decomposition may produce irritating, corrosive and/or toxic 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/decomposition may produce irritating, corrosive and/or toxic 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)

| A | D | G | Co | d | e |
|---|---|---|----|---|---|
| | | | | | |

| 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 | |
| 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)

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Dangerous Goods Classification
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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 | ALKALINE SALTS |
|-------------------------|----------------|
| Poisons Schedule (Aust) | Schedule 5 |

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

| Approval Code | Additives Process Chemicals and Raw Materials Corrosive Group Standard 2020 HSR002491 |
|---------------|---|
| | *HSR003511 (Revoked) |

National/Regional Inventories

| Australia (AIIC) | 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, SOMESI6500, SOMESI7000, SOMESI7000, SOMESI7200, SOMESI8000, SOMESI7200, SOMESI |
|-----------------------|--|
| Revision | 5 |
| Revision Date | 05 Jul 2021 |
| 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/I 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 inH20 Inch of Water K Kelvin kg Kilogram kg/m³ Kilograms per Cubic Metre Ib 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. Itr 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 mmH20 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