



SODIUM SELENITE

ALPHA CHEMICALS PTY LTD

Chemwatch Hazard Alert Code: 4

Chemwatch: 18934
Version No: 5.1.1.1
Safety Data Sheet according to WHS and ADG requirements

Issue Date: 15/12/2017
Print Date: 12/06/2019
S.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

| | |
|-------------------------------|--|
| Product name | SODIUM SELENITE |
| Chemical Name | sodium selenite |
| Synonyms | Na ₂ -Se-O ₃ ; disodium selenite; selenious acid, disodium salt; sodium selenite pentahydrate; sodium selenite GPR |
| Proper shipping name | SELENATES or SELENITES |
| Chemical formula | H ₂ -O ₃ -Se .2 Na O ₃ SeNa ₂ ·5H ₂ O |
| Other means of identification | Not Available |
| CAS number | 10102-18-8 |

Relevant identified uses of the substance or mixture and uses advised against

| | |
|--------------------------|--|
| Relevant identified uses | Analysis (testing for alkaloids); decolourising glass.Food supplement. |
|--------------------------|--|

Details of the supplier of the safety data sheet

| | |
|-------------------------|---|
| Registered company name | ALPHA CHEMICALS PTY LTD |
| Address | 4 ALLEN PLACE WETHERILL PARK NSW 2099 Australia |
| Telephone | 61 (0)2 9982 4622 |
| Fax | Not Available |
| Website | ~ |
| Email | shane@alphachem.com.au |

Emergency telephone number

| | | |
|-----------------------------------|-------------------------|------------------------------|
| Association / Organisation | ALPHA CHEMICALS PTY LTD | CHEMWATCH EMERGENCY RESPONSE |
| Emergency telephone numbers | 61 (0)418 237 771 | +61 1800 951 288 |
| Other emergency telephone numbers | Not Available | +61 2 9186 1132 |

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

| | | | |
|--------------|-----|-----|---|
| | Min | Max | |
| Flammability | 0 | | |
| Toxicity | 4 | | 0 = Minimum 1 = Low 2 = Moderate 3 = High 4 = Extreme |
| Body Contact | 2 | | |
| Reactivity | 0 | | |
| Chronic | 2 | | |

| | |
|-------------------------------|--|
| Poisons Schedule | S7 |
| Classification ^[1] | Acute Toxicity (Oral) Category 2, Acute Toxicity (Inhalation) Category 3, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Specific target organ toxicity - repeated exposure Category 2, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1, Skin Sensitizer Category 1 |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |

Label elements

| | |
|---------------------|--|
| Hazard pictogram(s) | |
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Continued...

SODIUM SELENITE

SIGNAL WORD **DANGER**

Hazard statement(s)

| | |
|-------------|--|
| H300 | Fatal if swallowed. |
| H331 | Toxic if inhaled. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H317 | May cause an allergic skin reaction. |

Precautionary statement(s) Prevention

| | |
|-------------|--|
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P273 | Avoid release to the environment. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |

Precautionary statement(s) Response

| | |
|-----------------------|--|
| P301+P310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. |
| P330 | Rinse mouth. |
| P362 | Take off contaminated clothing and wash before reuse. |
| P302+P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P304+P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| P311 | Call a POISON CENTER or doctor/physician. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |

Precautionary statement(s) Storage

| | |
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| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405 | Store locked up. |

Precautionary statement(s) Disposal

| | |
|-------------|---|
| P501 | Dispose of contents/container in accordance with local regulations. |
|-------------|---|

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

| CAS No | %[weight] | Name |
|------------|-----------|-----------------|
| 10102-18-8 | >99 | sodium selenite |

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

| | |
|---------------------|--|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. |
| Inhalation | <ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. |

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| Ingestion | <ul style="list-style-type: none"> ▶ IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. ▶ For advice, contact a Poisons Information Centre or a doctor. ▶ Urgent hospital treatment is likely to be needed. ▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. ▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. ▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. <p>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</p> <ul style="list-style-type: none"> ▶ INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. <p>NOTE: Wear a protective glove when inducing vomiting by mechanical means.</p> |
|------------------|---|

Indication of any immediate medical attention and special treatment needed

- ▶ Selenium dusts produce respiratory tract irritation, manifested by nasal discharge, loss of smell, epistaxis, and cough. Consumption of selenites and to a lesser degree, selenates causes nausea, vomiting, abdominal pain and tremor which resolves in 24 hrs. Muscle tenderness, tremor, light-headedness and facial flushing are observed in selenite poisoning.
- ▶ Both the acid and elemental form are well absorbed through the lungs and gastro-intestinal tract. Elimination (mostly in the urine) results in a biological half-life of around 1.2 days.
- ▶ Chronic selenium poisoning resembles arsenic poisoning. Management of chronic intoxication is supportive with elimination of the selenium source. BAL and CaNa2EDTA may enhance toxicity.
- ▶ High dose vitamin C (several grams daily) has produced equivocal results. This is probably reasonable as in-vitro results indicate selenium salts are then reduced to poorly absorbed elemental selenium.

Management of chronic selenium intoxication is supportive with elimination of the selenium source. BAL (dimercaprol, 2,3-dimercaptopropanol) and CaNa2EDTA may enhance toxicity.

There are no antidotes to selenious acid toxicity; treatment is expectant (cardiopulmonary monitoring in an intensive care setting) and supportive (intravenous infusion, supplemental oxygen and ventilation as needed).

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- ▶ Jets of water.
- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

| | |
|-----------------------------|-------------|
| Fire Incompatibility | None known. |
|-----------------------------|-------------|

Advice for firefighters

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|------------------------------|--|
| Fire Fighting | <ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use fire fighting procedures suitable for surrounding area. ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Non combustible. ▶ Not considered a significant fire risk, however containers may burn. <p>Decomposition may produce toxic fumes of: metal oxides May emit poisonous fumes.</p> |
| HAZCHEM | 2X |

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

| | |
|---------------------|---|
| Minor Spills | <ul style="list-style-type: none"> ▶ Clean up waste regularly and abnormal spills immediately. ▶ Avoid breathing dust and contact with skin and eyes. ▶ Wear protective clothing, gloves, safety glasses and dust respirator. ▶ Use dry clean up procedures and avoid generating dust. ▶ Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use). ▶ Dampen with water to prevent dusting before sweeping. ▶ Place in suitable containers for disposal. |
| Major Spills | <p>Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water courses. No smoking, naked lights or ignition sources.</p> |

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Increase ventilation. Stop leak if safe to do so.
Water spray or fog may be used to disperse / absorb vapour.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

| | |
|--------------------------|---|
| Safe handling | <ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT enter confined spaces until atmosphere has been checked. ▶ DO NOT allow material to contact humans, exposed food or food utensils. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. |
| Other information | <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. |

Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|---|
| Suitable container | <ul style="list-style-type: none"> ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks. <p>For low viscosity materials</p> <ul style="list-style-type: none"> ▶ Drums and jerricans must be of the non-removable head type. ▶ Where a can is to be used as an inner package, the can must have a screwed enclosure. <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> ▶ Removable head packaging; ▶ Cans with friction closures and ▶ low pressure tubes and cartridges <p>may be used.</p> <p>-</p> <p>Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages *.</p> <p>-</p> <p>In addition, where inner packagings are glass and contain liquids of packing group I and II there must be sufficient inert absorbent to absorb any spillage *.</p> <p>-</p> <p>* unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.</p> <p>All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.</p> |
| Storage incompatibility | <ul style="list-style-type: none"> ▶ Contact with acids produces toxic fumes ▶ Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride. ▶ These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition. ▶ The state of subdivision may affect the results. |

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|------------------------------|-----------------|--|-----------|---------------|---------------|---------------|
| Australia Exposure Standards | sodium selenite | Selenium compounds (as Se) excluding hydrogen selenide | 0.1 mg/m3 | Not Available | Not Available | Not Available |

EMERGENCY LIMITS


| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|-----------------|-----------------|-----------|-----------|-----------|
| sodium selenite | Sodium selenite | 1.3 mg/m3 | 2.3 mg/m3 | 3.1 mg/m3 |

| Ingredient | Original IDLH | Revised IDLH |
|-----------------|---------------|---------------|
| sodium selenite | 1 mg/m3 | Not Available |

Exposure controls

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|---|--|
| Appropriate engineering controls | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <ul style="list-style-type: none"> Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> |
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| | Local exhaust ventilation usually required. |
| Personal protection |  |
| Eye and face protection | <ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. |
| Skin protection | See Hand protection below |
| Hands/feet protection | <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage.</p> |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ Eyewash unit. ▶ Barrier cream. ▶ Skin cleansing cream. |

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES | P1 Air-line* | - - | PAPR-P1 - |
| up to 50 x ES | Air-line** | P2 | PAPR-P2 |
| up to 100 x ES | - | P3 Air-line* | - |
| 100+ x ES | - | Air-line** | PAPR-P3 |

* - Negative pressure demand ** - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- ▶ The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- ▶ Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- ▶ Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- ▶ Use approved positive flow mask if significant quantities of dust becomes airborne.
- ▶ Try to avoid creating dust conditions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

| | | | |
|---|--|--|----------------|
| Appearance | White, crystalline powder, soluble in water. Characteristic odour. Insoluble in alcohol. | | |
| Physical state | Divided Solid | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | Not Applicable | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Applicable |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | 172.94 |

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| | | | |
|----------------------------------|----------------|---|----------------|
| Flash point (°C) | Not Applicable | Taste | Not Available |
| Evaporation rate | Not Applicable | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Applicable | Surface Tension (dyn/cm or mN/m) | Not Applicable |
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Negligible |
| Vapour pressure (kPa) | Negligible | Gas group | Not Available |
| Solubility in water | Miscible | pH as a solution (1%) | 9-11 (2%) |
| Vapour density (Air = 1) | Not Applicable | VOC g/L | Not Applicable |

SECTION 10 STABILITY AND REACTIVITY

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|---|--|
| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

| Inhaled | <p>Inhalation of dusts, generated by the material, during the course of normal handling, may produce toxic effects. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.</p> <p>If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.</p> | | | | | | |
|---|---|----------|------------|---|--|--|---|
| Ingestion | <p>Severely toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 5 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Acute effects of selenium poisoning include nervousness, convulsions, drowsiness, frontal headaches, and in extreme cases, death from respiratory depression. There may also be skin eruptions, tiredness, stomach upset, discolouration of teeth, an odorous garlic breath and loss of hair and nails.</p> | | | | | | |
| Skin Contact | <p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> | | | | | | |
| Eye | This material can cause eye irritation and damage in some persons. | | | | | | |
| Chronic | <p>Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.</p> <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Chronic exposure to selenium and its compounds irritate the bronchi, cause gastrointestinal problems, irritation of the nasopharynx and a persistent foul garlic breath. There is often a metallic taste, pallor, irritability, extreme tiredness after years of exposure.</p> <p>Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis, caused by particles less than 0.5 micron penetrating and remaining in the lung.</p> | | | | | | |
| sodium selenite | <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: left;">TOXICITY</th> <th style="text-align: left;">IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Oral (rat) LD50: 7 mg/kg^[2]</td> <td>Eye: adverse effect observed (irritating)^[1]</td> </tr> <tr> <td></td> <td>Skin: adverse effect observed (irritating)^[1]</td> </tr> </tbody> </table> | TOXICITY | IRRITATION | Oral (rat) LD50: 7 mg/kg ^[2] | Eye: adverse effect observed (irritating) ^[1] | | Skin: adverse effect observed (irritating) ^[1] |
| TOXICITY | IRRITATION | | | | | | |
| Oral (rat) LD50: 7 mg/kg ^[2] | Eye: adverse effect observed (irritating) ^[1] | | | | | | |
| | Skin: adverse effect observed (irritating) ^[1] | | | | | | |

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

| | |
|------------------------|---|
| SODIUM SELENITE | <p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating</p> |
|------------------------|---|

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substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.

| | | | |
|-----------------------------------|---|--------------------------|---|
| Acute Toxicity | ✓ | Carcinogenicity | ✗ |
| Skin Irritation/Corrosion | ✓ | Reproductivity | ✗ |
| Serious Eye Damage/Irritation | ✓ | STOT - Single Exposure | ✓ |
| Respiratory or Skin sensitisation | ✓ | STOT - Repeated Exposure | ✓ |
| Mutagenicity | ✗ | Aspiration Hazard | ✗ |

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

| | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|-----------------|----------|--------------------|-------------------------------|-----------------|--------|
| sodium selenite | LC50 | 96 | Fish | 0.002-0.06mg/L | 2 |
| | EC50 | 48 | Crustacea | 0.001-0.969mg/L | 2 |
| | EC50 | 96 | Algae or other aquatic plants | 0.006-0.32mg/L | 2 |
| | BCF | 2016 | Fish | 13.1mg/L | 4 |
| | NOEC | 240 | Algae or other aquatic plants | 0.001-0.03mg/L | 2 |

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For Metal:

Atmospheric Fate - Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air.

Environmental Fate: Environmental processes, such as oxidation, the presence of acids or bases and microbiological processes, may transform insoluble metals to more soluble ionic forms.

Environmental processes may enhance bioavailability and may also be important in changing solubilities.

Aquatic/Terrestrial Fate: When released to dry soil, most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/ or surface water ecosystems when soaked by rain or melt ice. A metal ion is considered infinitely persistent because it cannot degrade further. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. A significant proportion of dissolved/ sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms. Ionic species may bind to dissolved ligands or sorb to solid particles in water.

Feeding of plants from ferrous rocks containing selenium has caused toxic effects in livestock. Environmental redistribution of selenium due to man's activity include copper smelting; lead, zinc, phosphate, and uranium mining; manufacture of glass ceramics and pigments; and burning of fuels. Early concerns about selenium toxicity have given way to recognition of certain beneficial properties, such as anti-carcinogenic properties, and offering protection against the toxicity of heavy metals such as cadmium, mercury and silver. Sediment micro-organisms produce dimethyl selenide and dimethyl diselenide from both inorganic and organic sources and contribute to its biogeochemical cycling. Bacteria and cyanobacteria have two possible mechanisms for the uptake and transformation of selenate. Selenates are reduced to elemental selenium during uptake, and soluble selenium is transformed into volatile alkyl selenium compounds. Aquatic organisms can convert selenium to both inert and soluble forms. Benthic bacteria and fungi are capable of methylating elemental and inorganic selenium salts.

DO NOT discharge into sewer or waterways.

|Fish LC50 (96 h): 13-200 mg/L

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|---------------------------------------|---------------------------------------|
| | No Data available for all ingredients | No Data available for all ingredients |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|-----------------|-----------------|
| sodium selenite | LOW (BCF = 85) |

Mobility in soil

| Ingredient | Mobility |
|------------|---------------------------------------|
| | No Data available for all ingredients |

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

| | |
|------------------------------|---|
| Product / Packaging disposal | <ul style="list-style-type: none"> Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: <ul style="list-style-type: none"> If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Where possible retain label warnings and SDS and observe all notices pertaining to the product. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: |
|------------------------------|---|

Continued...

SODIUM SELENITE



- ▶ Reduction
- ▶ Reuse
- ▶ Recycling
- ▶ Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.

- ▶ **DO NOT allow wash water from cleaning or process equipment to enter drains.**
- ▶ It may be necessary to collect all wash water for treatment before disposal.
- ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- ▶ Where in doubt contact the responsible authority.
- ▶ Recycle wherever possible or consult manufacturer for recycling options.
- ▶ Consult State Land Waste Management Authority for disposal.
- ▶ Bury residue in an authorised landfill.
- ▶ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 TRANSPORT INFORMATION

Labels Required

| | |
|------------------|---|
| |  |
| Marine Pollutant |  |
| HAZCHEM | 2X |

Land transport (ADG)

| | |
|------------------------------|---|
| UN number | 2630 |
| UN proper shipping name | SELENATES or SELENITES |
| Transport hazard class(es) | Class : 6.1 Subrisk : Not Applicable |
| Packing group | I |
| Environmental hazard | Environmentally hazardous |
| Special precautions for user | Special provisions : 274 Limited quantity : Not Applicable |

Air transport (ICAO-IATA / DGR)

| | |
|------------------------------|---|
| UN number | 2630 |
| UN proper shipping name | Selenites *; Selenates * |
| Transport hazard class(es) | ICAO/IATA Class : 6.1 ICAO / IATA Subrisk : Not Applicable ERG Code : 6L |
| Packing group | I |
| Environmental hazard | Environmentally hazardous |
| Special precautions for user | Special provisions : Not Applicable Cargo Only Packing Instructions : 673 Cargo Only Maximum Qty / Pack : 50 kg Passenger and Cargo Packing Instructions : 666 Passenger and Cargo Maximum Qty / Pack : 5 kg Passenger and Cargo Limited Quantity Packing Instructions : Forbidden Passenger and Cargo Limited Maximum Qty / Pack : Forbidden |

Sea transport (IMDG-Code / GGVSee)

| | |
|----------------------------|---|
| UN number | 2630 |
| UN proper shipping name | SELENATES or SELENITES |
| Transport hazard class(es) | IMDG Class : 6.1 IMDG Subrisk : Not Applicable |

SODIUM SELENITE

| | | |
|-------------------------------------|--------------------|-----------|
| Packing group | I | |
| Environmental hazard | Marine Pollutant | |
| Special precautions for user | EMS Number | F-A , S-A |
| | Special provisions | 274 |
| | Limited Quantities | 0 |

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

SODIUM SELENITE(10102-18-8) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List | Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3) |
| Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes | Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Part 2, Section Seven - Appendix I |
| Australia Exposure Standards | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |
| Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals | International Air Transport Association (IATA) Dangerous Goods Regulations |
| Australia Inventory of Chemical Substances (AICS) | International Maritime Dangerous Goods Requirements (IMDG Code) |
| Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2) | United Nations Recommendations on the Transport of Dangerous Goods Model Regulations |

National Inventory Status

| National Inventory | Status |
|-------------------------------|----------------------|
| Australia - AICS | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (sodium selenite) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | Yes |
| Japan - ENCS | Yes |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | Yes |
| Vietnam - NCI | Yes |
| Russia - ARIPS | Yes |
| Thailand - TECI | Yes |

Legend:
 Yes = All declared ingredients are on the inventory
 No = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

| | |
|----------------------|---------------|
| Revision Date | 15/12/2017 |
| Initial Date | Not Available |

SDS Version Summary

| Version | Issue Date | Sections Updated |
|---------|------------|--------------------------|
| 5.1.1.1 | 15/12/2017 | Physical Properties, Use |

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC – TWA: Permissible Concentration-Time Weighted Average
- PC – STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit.

SODIUM SELENITE

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

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