



Infosafe No™	1CH6R	Issue Date : May 2018	RE-ISSUED by CHEMSUPP
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Product Name : **SODIUM SULFIDE**

Classified as hazardous

1. Identification

GHS Product Identifier	SODIUM SULFIDE	
Company Name	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)	
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
Telephone/Fax Number	Tel: (08) 8440-2000 Fax: (08) 8440-2001	
Recommended use of the chemical and restrictions on use	Used in the manufacture of organic chemicals, dyes (sulfur), intermediates, viscose rayon (sulfur removal), leather (depilatory), paper pulp, rubber, heavy water for nuclear reactors, cellophane film, analytical reagent, laboratory reagent, reducing agent (nitro compounds), complexing agents, cosmetics, pharmaceuticals, photographic reagent, flotation agent in ore treatment, hydrometallurgy of gold ores, sulfiding oxidised lead and copper ores preparatory to flotation, sheep dips, engraving, lithography and cotton printing.	
Other Names	Name	Product Code
	SODIUM SULFIDE HYDRATED LR	SL019
	SODIUM SULFIDE HYDRATED AR	SA019
	SODIUM SULFIDE HYDRATED TG	ST019
	Sodium monosulfide	
	Sodium sulfuret	
Other Information	EMERGENCY CONTACT NUMBER: +61 08 8440 2000 Business hours: 8:30am to 5:00pm, Monday to Friday.	

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	Corrosive to Metals: Category 1 Acute Toxicity - Oral: Category 3 Acute Toxicity - Dermal: Category 3 Skin Corrosion/Irritation: Category 1B Eye Damage/Irritation: Category 1 Hazardous to the Aquatic Environment - Acute Hazard: Category 1
Signal Word (s)	DANGER
Hazard Statement (s)	H290 May be corrosive to metals. H301 Toxic if swallowed. H311 Toxic in contact with skin. H314 Causes severe skin burns and eye damage. H400 Very toxic to aquatic life. AUH031 Contact with acids liberates toxic gas
Pictogram (s)	Corrosion, Skull and crossbones, Environment



Precautionary statement – Prevention	P234 Keep only in original container. P260 Do not breathe dust. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection.
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Precautionary statement – Response	P273 Avoid release to the environment. P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P361 Remove/Take off immediately all contaminated clothing. P363 Wash contaminated clothing before reuse. P310 Immediately call a POISON CENTER or doctor/physician. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. P405 Store locked up.
Precautionary statement – Storage	P406 Store in corrosive resistant/... container with a resistant inner liner.
Precautionary statement – Disposal	P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Chemical Characterization	Solid				
Ingredients	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>	<u>Hazard Symbol</u>	<u>Risk Phrase</u>
	Sodium Sulfide	1313-82-2	32-62 %		
	Water to make a total of 100%	7732-18-5	-		

4. First-aid measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately, avoid becoming a casualty. Make patient comfortable, keep warm and at rest until fully recovered. If breathing is difficult (or develops a bluish skin discolouration), supply oxygen by a qualified person. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.
Ingestion	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek immediate 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 immediate medical advice /attention depending on the severity.
Eye contact	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical assistance.
First Aid Facilities	An eye wash fountain, safety shower and a general washing facility should be available adjacent to the work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Protection for First Aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing or wear gloves.
Other Information	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products	Irritating, corrosive and highly toxic fumes and gases, including sulfur dioxide and other sulfur oxides (SO ₂ , SO ₃ etc.), hydrogen sulfide gas, and sodium/sodium oxides.
Specific Methods	Small fire: Use dry chemical, dry sand or alcohol foam. If safe to do so, move undamaged containers from fire area. Large fire: Use alcohol foam or powder - Do not use water jets. Fight fire from protected position or use unmanned hose holders or monitor nozzles.
Hazchem Code	2X
Decomposition Temp.	920-950 °C (anhydrous; in air; melting point).



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Precautions in connection with Fire Wear SCBA and acid-resistant chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

6. Accidental release measures

Personal Precautions Evacuate the area of all non-essential personnel. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

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.

Clean-up Methods - Large Spillages Seek expert advice on handling and disposal.

7. Handling and storage

Precautions for Safe Handling Avoid ingestion and inhalation of vapours or dusts. Avoid contact with skin and eyes, or clothing. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Keep containers tightly closed when not in use. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Wash thoroughly after handling. Ensure a high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet. Do not eat, drink, or smoke during work. Wear appropriate protective equipment. Do not handle broken packages unless wearing appropriate personal protective equipment. Keep away from incompatibles such as acids, oxidants. Keep away from heat and all sources of ignition.

Conditions for safe storage, including any incompatibilities Store in corrosives area. Store in tightly closed, labelled containers, in a cool, dry, well-ventilated area away from incompatible substances. Isolate from acids, alkalis, oxidising materials, metals, water, and carbon dioxide. Light and moisture sensitive. Keep away from extremes of temperature, heat and all sources of ignition.

Corrosiveness Corrosive to zinc, aluminium, copper and steel.

Storage Regulations Refer Australian Standard AS 3780-1994 'The storage and handling of corrosive substances'.

Storage Temperatures Keep refrigerated 2 - 8°C.

Recommended Materials Plastic, glass, stoneware and porcelain containers.

Unsuitable Materials Aluminium, copper, zinc and steel containers.

8. Exposure controls/personal protection

Other Exposure Information No exposure standards have been established for this product by Safe Work Australia, however, the TWA exposure standard for dusts not otherwise specified is 10 mg/m³.

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.

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. Recommendation: Excellent: Vinyl, nitrile, neoprene gloves. Good: NR latex.

Personal Protective Equipment The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

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 an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals. Resistance for protective clothing: Excellent: Neoprene. Polyvinyl chloride (PVC). Nitrile.

Hygiene Measures Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other



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protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Solid
Appearance	Colourless, white, yellow, yellow-pink, pink, or brick-red, granular lumps, flakes, deliquescent, crystalline solid, or cubic, or amorphous crystals. Discolours upon exposure to air.
Odour	Characteristic, repulsive, rotten egg, sulfide odour.
Decomposition Temperature	920-950 °C (anhydrous; in air; melting point).
Melting Point	90 °C.
Boiling Point	>160 °C (anhydrous)
Solubility in Water	Very soluble (450 g/l (20 °C)).
Solubility in Organic Solvents	Slightly soluble in alcohol; insoluble in ether, n-octanol.
Specific Gravity	1.43
pH	13 (100 g/l H ₂ O, 20 °C) (aqueous solutions are strongly alkaline).
Odour Threshold	H ₂ S: Range of acceptable values: 0.001-0.13 ppm (detection). Geometric mean air odour thresholds: 0.0094 ppm (detection); 0.0045 ppm (recognition). Loss of ability to smell H ₂ S begins at 50 ppm; exposures above 100 ppm may rapidly (2-15 minutes) deaden the sense of smell. Reduced ability to smell (olfactory fatigue) may also result from prolonged exposure to concentrations below 100 ppm.
Volatile Component	0 %vol @ 21 °C
Partition Coefficient: n-octanol/water	log Pow: -3.5 (anhydrous)
Flammability	Not combustible material. Decomposes under the influence of moisture, water and acids, forming toxic and flammable gas (hydrogen sulfide).
Auto-Ignition Temperature	>480 °C (anhydrous; the hydrated product does not show auto flammability).
Explosion Properties	Not explosive. Sodium sulfide dust particles can form an explosive mixture with air. Contact with acids gives off hydrogen sulfide, a toxic and flammable gas that may form explosive mixtures in air. Sealed containers may rupture when heated.
Molecular Weight	240.18 (nonahydrate); 78.04 (hydrated; anhydrous basis).

10. Stability and reactivity

Chemical Stability	Stable under normal conditions of storage and handling. Hygroscopic: absorbs moisture or water from the air. Light-sensitive, sensitive to air (discolouration).
Conditions to Avoid	Exposure to light, air, or water may affect product quality. Heating, flames, static discharge, high temperatures, humidity and incompatible materials.
Incompatible Materials	Aluminium, copper, zinc, and their alloys, acids (formation of hydrogen sulfide), strong oxidising agents, carbon, and diazonium salts.
Hazardous Decomposition Products	Toxic and corrosive fumes and gases of sulfur oxides (SO ₂ , SO ₃ etc.), hydrogen sulfide gas (H ₂ S) (toxic, corrosive and flammable) (upon reaction with acids), sodium/sodium oxides.
Possibility of hazardous reactions	Reacts violently with acids to liberate toxic and corrosive hydrogen sulfide gas, which increases fire hazard, and producing corrosive solutions. Reacts violently with oxidants. Reacts violently with carbon; diazonium salts; n,n-dichloromethylamine; 0-nitroaniline diazonium salt; water (anhydrous substance).
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral	LD50 (rat): 208 mg/kg (anhydrous substance)
Ingestion	Corrosive. Harmful if swallowed. Sodium sulfide is a strong base and ingestion may produce burns to the lips, tongue, oral mucosa, oropharynx, upper airway, oesophagus and occasionally stomach, with severe and permanent tissue damage and severe pain. Burns of the oesophagus and less commonly the stomach may occur after caustic ingestion; the absence of oral mucosal injury does NOT reliably exclude oesophageal burns. The presence of stridor, drooling, vomiting, and/or abdominal pain are



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Inhalation	<p>associated with serious oesophageal injury in most cases. In severe cases gastrointestinal bleeding or perforated viscus with mediastinitis or peritonitis may develop. Symptoms may include mucosal irritation, burning sensation, coughing, painful conjunctivitis, headache, nausea, spontaneous vomiting, diarrhoea, abdominal pain, dizziness, drowsiness, confusion, weakness, irregular breathing, CNS disorders (shock, narcosis), unconsciousness, collapse and cyanosis. Hypotension and tachycardia are uncommon but may occur with severe gastrointestinal bleeding or extensive gastrointestinal necrosis after ingestion. Metabolic acidosis may develop in patients with severe burns or shock. Damage to oesophagus and stomach may be fatal. In extreme cases, pulmonary oedema and death may result. If ingested, hydrolysis by stomach acids releases toxic hydrogen sulfide gas, which will have severe toxic effects. The symptoms and effects are similar to those under inhalation. Delayed sequelae of caustic ingestion include strictures of the mouth, oesophagus and stomach, obstruction, tracheoesophageal and aortoesophageal fistula formation, and oesophageal carcinoma.</p> <p>Corrosive. A harmful concentration of airborne particles can be reached quickly when dispersed. Inhalation of dusts will result in respiratory irritation, which may be severe, and possible harmful corrosive effects including lesions of the nasal septum, chemical burns of the respiratory tract and emphysema. May cause systemic effects. Symptoms of exposure may include burning sensation, sore throat, coughing, wheezing, laryngitis, shortness of breath, laboured breathing, headache, nausea, vomiting, painful conjunctivitis, dizziness, drowsiness, stridor, confusion, weakness, heart palpitations, irregular breathing and unconsciousness. In extreme cases, inhalation of alkaline vapours may be fatal as a result of spasm, inflammation, oedema of the larynx and bronchi, respiratory failure, chemical pneumonitis and pulmonary oedema. Evolved hydrogen sulfide gas in low concentrations (50 ppm) can cause dryness and irritation of the nose and throat, runny nose, cough and shortness of breath. Higher concentrations (200 to 250 ppm) cause severe irritation as well as headache, nausea, vomiting and dizziness. Extremely high concentrations (500 ppm) rapidly cause unconsciousness and death. Severe exposures, which do not result in death, may cause long-term symptoms such as memory loss, paralysis of facial muscles or nerve damage.</p>
Skin	Corrosive. Contact with skin can produce serious caustic burns with painful inflammation, redness, itching, severe skin irritation, blisters and possible destruction of tissue. The substance can be absorbed and may be harmful if absorbed into the body through the skin.
Eye	Corrosive. Risk of blindness! Causes eye burns. Ocular exposure can produce severe conjunctival irritation and chemosis, corneal epithelial defects, limbal ischemia, irreversible eye injury, permanent visual loss and in severe cases perforation. Alkaline eye exposures produce distortion of cellular membranes, loss of corneal, conjunctival and lens epithelium and loss of endothelium of the cornea and blood vessels. Causes redness, severe pain, blurred vision, inflammation, irritation, stinging, tearing and severe deep burns. Evolved hydrogen sulfide gas can cause inflammation and irritation of the eyes at very low concentrations (sometimes less than 10 ppm).
Carcinogenicity	Not listed in the IARC Monographs.
Health Hazard	Highly toxic (50-100 ppm in air) hydrogen sulfide gas may accumulate in confined spaces due to the decomposition of sodium sulfide or from its reaction with acids.
Chronic Effects	Prolonged or repeated skin contact may cause defatting leading to dermatitis. Effects may be delayed. May cause cardiac disturbances. May cause central nervous system, respiratory system, effects. Prolonged exposure to hydrogen sulfide, H ₂ S, evolved when decomposed even by weak acids, may cause pulmonary oedema.
Mutagenicity	Bacterial mutagenicity: Ames-Test: negative (anhydrous substance).

12. Ecological information

Ecological Information	Do not allow to enter waters, waste water, or soil!
Ecotoxicity	Highly toxic for aquatic organisms. Toxic effect on fish and plankton. Endangers drinking-water supplies if allowed to enter soil or water. Harmful effect due to pH shift.
Environmental Protection	Do not allow to enter waters, waste water, or soil!

13. Disposal considerations

Other Information	Neutralize with a ferric chloride solution and add sodium carbonate prior to disposal.
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14. Transport information

Transport Information	Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following: Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.
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U.N. Number	1849
UN proper shipping name	SODIUM SULFIDE, HYDRATED
Transport hazard class(es)	8
Hazchem Code	2X
Packaging Method	3.8.8
Packing Group	II
EPG Number	8A1
IERG Number	38

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 for 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]'.
Contact Person/Point	Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Empirical Formula & Structural Formula Na₂S.

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