

**SAFETY DATA SHEET**

**Sodium Hydrosulphide Solution**

**SECTION 01 - IDENTIFICATION**

|                               |   |
|-------------------------------|---|
| Product identifier            | Sodium Hydrosulphide Solution   |
| Other means of identification | Sodium Bisulfide Solution; Sodium Mercaptan; Sodium Sulphydrate Solution; SODIUM SULFIDE (Na(SH)) |
| Recommended use of chemical   | Tanning, mining   |
| Supplier name                 | Ixom Operations Pty Limited trading as LogiChem   |
| Supplier address              | Lot 33 Bulong Road Parkeston-Kalgoorlie, Australia<br>PO Box 878 Kalgoorlie WA 6433 Australia     |
| Supplier phone                | 1800 033 111 / Int. +61 (0) 3 9663 2130   |
| 24 Hour emergency phone       | 1800 033 111  |

**SECTION 02 - HAZARD(S) IDENTIFICATION**

|                          |  |
|--------------------------|--|
| Classification           | Corrosive to Metals - Category 1<br>Acute Toxicity (Oral) - Category 4<br>Acute Toxicity (Dermal) - Category 3<br>Skin Corrosion/Irritation - Category 1B<br>Serious Eye Damage/Irritation - Category 1  |
| Signal word              | Danger   |
| Hazard statements        | <b>AUH031</b> - Contact with acids liberates toxic gas<br><b>H290</b> - May be corrosive to metals.<br><b>H302</b> - Harmful if swallowed.<br><b>H311</b> - Toxic in contact with skin.<br><b>H314</b> - Causes severe skin burns and eye damage.  |
| Precautionary statements | <b>Prevention</b><br>P234 - Keep only in original container.<br>P260 - Do not breathe mist/vapour/spray.<br>P264 - Wash hands thoroughly after handling.<br>P270 - Do not eat, drink or smoke when using this product.<br>P280 - Wear protective gloves/protective clothing/eye protection/face protection.<br><b>Response</b><br>P301 / P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.<br>P301 / P330 / P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.<br>P302 / P352 - IF ON SKIN: Wash with plenty of soap and water.<br>P303 / P361 / P353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.<br>P304 / P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.<br>P305 / P351 / P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P310 - Immediately call a POISON CENTER or doctor/physician.<br>P312 - Call a POISON CENTER or doctor/physician if you feel unwell.<br>P321 - Specific treatment (see First Aid Measures on Safety Data Sheet).<br>P361 - Remove/Take off immediately all contaminated clothing.<br>P363 - Wash contaminated clothing before reuse.<br>P390 - Absorb spillage to prevent material damage.<br><b>Storage</b><br>P405 - Store locked up.<br>P406 - Store in a corrosive resistant container with a resistant inner liner.<br><b>Disposal</b><br>P501 - Dispose of contents/container in accordance with local / state / national / |

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international regulations.



**SECTION 03 – COMPOSITION / INFORMATION ON INGREDIENTS**

| <u>Chemical Components</u> | <u>Cas No:</u> | <u>Proportion % w/w</u> |
|----------------------------|----------------|-------------------------|
| Sodium Hydrosulphide       | 16721-80-5     | 18.0%-45.0%             |
| Sodium Sulphide            | 1313-82-2      | <1.0%                   |
| Sodium Carbonate           | 497-19-8       | <3.0%                   |
| Water                      | 7732-18-5      | 54.0%-79.0%             |

**SECTION 04 – FIRST AID MEASURES**

|  |   |
|--|---|
| <b>Description of necessary first aid measures</b> | <p><b>Eye</b> – Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Seek medical attention immediately.</p> <p><b>Ingestion</b> - If conscious immediately wash out mouth and give water to drink. Do not induce vomiting. Seek medical attention immediately.</p> <p><b>Inhalation</b> – Remove victim from contaminated atmosphere. If breathing is laboured, administer oxygen. If breathing has ceased, clear airway and start artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If heart has stopped beating, external heart massage should be applied. Obtain immediate medical attention.</p> <p><b>Skin</b> – Wash contaminated skin with plenty of soap and water. Remove contaminated clothing and wash before re-use. If irritation persists, seek medical attention immediately.</p> |
| <b>Medical attention / special treatment</b>       | Treat symptomatically based on judgement of doctor and individual reactions of patient. Contact causes caustic burns. Treat ingestion as hydrogen sulphide gas poisoning in addition to caustic burns.  |
| <b>Symptoms caused by exposure</b>                 | Not available   |

**SECTION 05 – FIRE FIGHTING MEASURES**

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| <b>Suitable extinguishing media</b>                                     | In case of fire, appropriate extinguishing media include water spray or foam or as appropriate for combustibles involved in a fire. Do NOT use carbon dioxide fire extinguishers because toxic hydrogen sulphide gas will be liberated from this product. Use water in flooding quantities. A heavy fog of water may be effective in knocking down vapours. Keep containers/storage vessels in fire area cooled with water spray.   |
| <b>Specific hazards arising from the chemical</b>                       | Non Product is a non-flammable liquid. However, if exposed to heat or acids, flammable hydrogen sulphide will be released and may form explosive mixtures with air. Dilution of NaHS with water will increase the evolution of hydrogen sulphide. FLAMMABLE LIMITS Hydrogen sulphide LFL: 4% UFL: 44%. Heating this product will evolve hydrogen sulfide. Fire conditions will also cause the production of sulfur dioxide. Hydrogen sulfide (4-44%) may form flammable mixtures with air. Heating to decomposition emits toxic fumes of sulfoxides and Na <sub>2</sub> O.  |
| <b>Special protective equipment &amp; precautions for fire fighters</b> | Because of the possible presence of toxic gases and the corrosive nature of the product, fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves) or chemical splash suit. Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT allow firefighting water to reach waterways, drains or sewers. Store firefighting water for treatment. |

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**SECTION 06 - ACCIDENTAL RELEASE MEASURES**

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| <p><b>Personal precautions, protective equipment and emergency procedures</b></p> | <p>Avoid accidents, clean up immediately. May be slippery when spilt. Evacuate all unnecessary personnel. Eliminate all sources of ignition. Increase ventilation. Isolate the danger area. Use clean, non-sparking tools and equipment. Shut off all possible sources if ignition. Personnel involved in the clean-up should wear full protective clothing as listed in section 08.</p>   |
| <p><b>Environmental precautions</b></p>   | <p>Do not allow product to reach drains, sewers or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority.</p>   |
| <p><b>Methods and materials for containment and cleaning up.</b></p>              | <p>Avoid generating mist and keep this product away from acids. Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated collect material, transfer to suitable, labelled, dry chemical-waste containers and dispose of promptly as hazardous waste. Oxidize residual reactive sulphides with a weak (3-5%) hydrogen peroxide solution to stop the release of toxic hydrogen sulphide. Remove contaminated soil and dispose of in accordance with all governmental regulations. For large releases, recover as much of the solution as possible. Mix solution with dilute excess hydrogen peroxide to oxidize sulphide and eliminate danger of hydrogen sulphide evolution.</p> |

**SECTION 07 - HANDLING AND STORAGE**

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| <p><b>Precautions for safe handling</b></p>                             | <p>Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Dilute product only in enclosed containers. Use only in a well-ventilated area. Wear proper protective equipment as listed in section 08. Avoid breathing product vapours. Avoid contact with skin and eyes. Put a vapour trap or scrubber on tank vent. Poison hydrogen sulphide gas will be present in the vapour space above sodium hydrosulphide solution. Do not enter tanks or other vessels unless self-contained breathing apparatus (SCBA) is used Dilution of Sodium Hydrosulphide with water will cause increased evolution of hydrogen sulphide gas. Hydrogen sulphide gas can accumulate in confined spaces above the liquid. It forms flammable mixtures with air from about 4% vapour up to about 45%.<br/><b>IMPORTANT:</b> Sodium Hydrosulphide solution is not compatible with copper, zinc, aluminium or their alloys (i.e. bronze, brass, galvanized metals, etc). Corrosive to steel above 65.5°C. These materials of construction should not be used in handling systems or storage containers for this product.</p>  |
| <p><b>Conditions for Safe Storage (Including Any Incompatibles)</b></p> | <p>Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in section 10. Protect from sources of heat or flame. Do not store combustibles in the area of storage vessels. Store tote and smaller containers out of direct sunlight at moderate temperatures (27°C). Do not store in contact with copper, zinc, or aluminium. This product has a UN classification of 2922 Dangerous Goods Class 8 (Corrosive), and Subsidiary Risk 6.1 (Toxic) according to the Australian Code for the Transport of Dangerous Goods By Road by Road and Rail. Packaging must comply with requirements of Hazardous Substances (Packaging) Regulations 2001. Store in original packaging as approved by manufacturer.<br/><b>IMPORTANT:</b> Sodium hydrosulphide solution is not compatible with copper, zinc, aluminium or their alloys (i.e. bronze, brass, galvanized metals, etc.). Corrosive to steel above 65.5°C. These materials of construction should not be used in handling systems or storage containers for this product. Preferred material of construction for storage tanks is stainless steel; however, carbon steel is acceptable.</p> |

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**SECTION 08 – EXPOSURE CONTROLS / PERSONAL PROTECTION**

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| <p><b>Control parameters – exposure standards, biological monitoring</b></p> | <p>No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC), however the following is available for decomposition product: Hydrogen Sulphide CAS 7783-06-4: TWA = 10ppm (14mg/m<sup>3</sup>) STEL = 15ppm (21mg/m<sup>3</sup>)<br/>         NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.</p> |
| <p><b>Appropriate engineering controls</b></p>                               | <p>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. Adequate ventilation should be provided so that exposure limits are not exceeded. Where feasible scrub process or storage vessel vapours with caustic solution. Maintain eyewash/safety shower in areas where chemical is handled.</p>   |
| <p><b>Personal protective equipment (PPE)</b></p>                            | <p><b>Clothing</b> – Chemical suit should be worn to prevent contact with the liquid (AS3765/2210). <b>NOTE:</b> Wash contaminated clothing prior to reuse.<br/> <b>Eyes</b> – Chemical goggles and a full-face shield to prevent splashing in the eyes (AS1336/1337).<br/> <b>Footwear</b> – Chemical boots should be worn to prevent contact with the liquid (AS3765/2210). <b>NOTE:</b> Contaminated leather shoes cannot be cleaned and should be discarded.<br/> <b>Gloves</b> – Neoprene rubber gloves (AS2161).<br/> <b>Other</b> - If working near open container, storage vessel opening or open tank truck dome cover, wear self-contained breathing apparatus, pressure demand, if engineering controls are inadequate (AS1715/1716).</p>   |

**SECTION 09 – PHYSICAL AND CHEMICAL PROPERTIES**

|  |   |
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| <p><b>Appearance</b></p>                                   | <p>May be yellow to red, to dark green to black liquid.</p>           |
| <p><b>Odour</b></p>  | <p>Hydrogen sulphide (rotten egg), hydrocarbon (mercaptan) odour.</p> |
| <p><b>Odour threshold</b></p>                              | <p>Not available</p>  |
| <p><b>pH</b></p>   | <p>11.5 - 12.5</p>  |
| <p><b>Melting point/freezing point</b></p>                 | <p>-17.8°C (20%) deg C</p>  |
| <p><b>Specific gravity (water = 1)</b></p>                 | <p>1.152-1.303</p>  |
| <p><b>Boiling point and boiling range</b></p>              | <p>122.8-131.7°C deg C</p>  |
| <p><b>Flash point</b></p>                                  | <p>Not applicable</p>   |
| <p><b>Evaporation rate</b></p>                             | <p>Not available</p>  |
| <p><b>Flammability</b></p>                                 | <p>Not available</p>  |
| <p><b>Upper/lower flammability or explosive limits</b></p> | <p>Not available</p>  |
| <p><b>Vapour pressure (hPa @ 20°C)</b></p>                 | <p>17mmHg (20°C)</p>  |
| <p><b>Vapour density</b></p>                               | <p>1.17 Air = 1</p>   |
| <p><b>Relative density</b></p>                             | <p>Not available</p>  |
| <p><b>Solubility(ies) (water)</b></p>                      | <p>Complete Solubility</p>  |
| <p><b>Partition coefficient: n-octanol/water</b></p>       | <p>Not available</p>  |
| <p><b>Auto-ignition temperature</b></p>                    | <p>Not available</p>  |
| <p><b>Decomposition temperature</b></p>                    | <p>Not available</p>  |

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|--|---------------|
| Viscosity  | Not available |
| Specific heat value                              | Not available |
| Particle size                                    | Not available |
| Volatile organic compounds content               | Not available |
| % volatile                                       | Not available |
| Saturated vapour concentration                   | Not available |
| Release of invisible flammable vapours and gases | Not available |

**SECTION 10 – STABILITY AND REACTIVITY**

|                                  |  |
|----------------------------------|--|
| Reactivity                       | Hazardous polymerization will not occur. Acids will cause the release of highly toxic hydrogen sulphide. Reacts violently with diazonium salts. Sodium hydrosulphide solution is not compatible with copper, zinc, aluminium or their alloys (i.e. bronze, brass, galvanized metals, etc.). Corrosive to steel above 65.5°C. These materials of construction should not be used in handling systems or storage containers for this product. Dilution of NaHS with water will increase the evolution of hydrogen sulphide. Dilution should be done in an enclosed container. Mixing with strong alkalis may form solid, hydrated sodium sulphide. |
| Chemical stability               | Stable under normal use conditions.  |
| Conditions to avoid              | Avoid excessive heat, direct sunlight, moisture, freezing, static charges and high temperatures.   |
| Incompatible materials           | Incompatible with strong oxidisers, acids, strong alkalis, diazonium salts, copper, zinc, aluminium or their alloys (i.e., bronze, brass, galvanised metals, etc), water, and the material is corrosive to steel above 65.5°C.   |
| Hazardous decomposition products | Poison, flammable hydrogen sulphide gas will be evolved from this product on exposure to acid or excessive heat and may form explosive mixtures with air. Poisonous sulphur dioxide gas will be generated if the vapours from this product burn. Dilution of this product with water will increase the evolution of hydrogen sulphide. Heating to decomposition or exposure to fire conditions may generate sulfoxides, sulphur dioxide, and sodium oxide.   |

**SECTION 11– TOXICOLOGICAL INFORMATION**

|                                   |   |
|-----------------------------------|---|
| Information on routes of exposure | <p><b>Eyes</b> – Extremely corrosive to the eyes. Brief contact causes severe damage and prolonged contact causes permanent eye injury.</p> <p><b>Ingestion</b> - Causes severe burns. Ingestion will result in severe burning and corrosion of mouth, throat and the gastrointestinal tract. Destruction of the lining of the oesophagus and stomach. Rapid breathing, confusion, unconsciousness, paralysis of respiratory muscles leading to death. Chronic Ingestion may result in head- ache, nausea, dizziness, confusion, and painful alkali burns to the oesophagus. If the ingested material contacts stomach acid, highly toxic hydrogen sulphide gas will be evolved.</p> <p><b>Inhalation</b> – Harmful by inhalation. Acute inhalation causes severe respiratory distress because of corrosivity. Hydrogen sulphide gas, produced if this product contacts acid, causes eye irritation, headache, dizziness, confusion, weakness of the extremities, unconsciousness, pulmonary oedema, asphyxiation, and central respiratory paralysis leading to death. Chronic inhalation will result in Extreme irritation to respiratory passages.</p> <p><b>Skin</b> - Causes severe burns. Chemical burns result from contact with liquid or mist. Acute Skin Contact will result in Painful chemical burns. Systemic poisoning by sulphide causes headache, nausea, dizziness, confusion, weakness of the extremities, and possible unconsciousness. Chronic Skin Contact will result in Extreme irritation to skin. Prolonged contact will result in corrosion of the skin. Corrosive to skin due to the product's alkalinity. May be toxic when absorbed through the skin.</p> |
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|---|---|
| Symptoms related to exposure                                | Not available   |
| Numerical measures of toxicity                              | N Oral LDLo Human: Reported to be 50mg/Kg (Na <sub>2</sub> S) Equivalent to 163mg/Kg for this product (based on sulphur content)<br>Inhalation LCLo Human: 600ppm for 30 minutes for Hydrogen sulphide; Equivalent to 4500ppm of respirable mist from this product.<br>Inhalation LC50 Rat: 444ppm (Hydrogen Sulphide)<br>Inhalation LC50 Mouse: 1500mg/m <sup>3</sup> /18mins (1.5mg/L/18mins)<br>Inhalation LC50 Rat: 500mg/m <sup>3</sup> /14mins (1.5mg/L/14mins) |
| Immediate, delayed and chronic health effects from exposure | Not available   |
| Exposure levels   | Not available   |
| Interactive effects   | Not available   |
| Data limitations  | Not available   |

**SECTION 12- ECOLOGICAL INFORMATION**

|                               |  |
|-------------------------------|--|
| Ecotoxicity                   | Static acute 96 hour-LC50 for mosquito fish is 206 mg/L. (Tlm - fresh water)<br>LC50 fly inhalation 1,500 mg/m <sup>3</sup> , 7 minutes<br>TLm Gammarus 0.84 mg/L, 96 hours (hydrogen sulfide)<br>TLm Ephemera 0.316 mg/L, 96 hours (hydrogen sulfide)<br>TLm Flathead minnow 0.071 - 0.55 mg/L @ 6-24°C, 96-hour flow through bioassay (hydrogen sulfide)<br>TLm Bluegill 0.0090 - 0.0140 mg/L @ 20-22°C, 96-hour flow through bioassay (hydrogen sulfide)<br>TLm Brook trout 0.0216 - 0.0308 mg/L @ 8-12.5°C, 96-hour flow through bioassay (hydrogen sulfide) |
| Persistence and degradability | Not available  |
| Bioaccumulative potential     | Not available  |
| Mobility in soil              | DISTRIBUTION: All components of this product are found naturally in all ecosystems.  |
| Other adverse effects         | Not available  |

**SECTION 13 - DISPOSAL CONSIDERATIONS**

|  |  |
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| Safe handling and disposal methods     | Dispose of in accordance with all local, state and federal regulations.  |
| Disposal of any contaminated packaging | All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.  |
| Environmental regulations              | Contact a specialist disposal company or the local waste regulator for advice.<br>This should be done in accordance with 'The Hazardous Waste Act'. Waste containing sulphide may be hazardous and may require disposal in an approved hazardous waste landfill. Sulphide can be oxidized with dilute hydrogen peroxide or any other oxidizing agent to non-hazardous sulphate; care should be taken as the reaction may be violent. |

**SECTION 14 - TRANSPORT INFORMATION**

|                                      |   |
|--------------------------------------|---|
| UN number                            | 2922  |
| Proper shipping name                 | CORROSIVE LIQUID, TOXIC, N.O.S. (Sodium Hydrosulphide Solution) |
| Transport hazard class(es)           | 8 - Corrosive Substances  |
| Subsidiary risk                      | 6.1 - Toxic and Infectious Substances - Toxic Substances        |
| Packaging group                      | II  |
| Environmental hazards                | Not available   |
| Special precautions during transport | Not available   |
| Hazchem code                         | 2X  |

**SECTION 15 - REGULATORY INFORMATION**

|           |                         |
|-----------|-------------------------|
| AICS name | Sodium Sulfide (Na(SH)) |
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|                         |               |
|-------------------------|---------------|
| Poisons Schedule number | Not available |
|-------------------------|---------------|

**SECTION 16 – OTHER INFORMATION**

|                           |   |
|---------------------------|---|
| SDS creations date        | 04 August 2010                                      |
| Most recent revision date | 01 February 2018                                    |
| Revision number           | 006<br><b>THIS ISSUE NUMBER REPLACES ALL ISSUES</b> |
| Reason for revision       | Annual Update                                       |
| Contact person            | Ixom 1800 033 111                                   |

*Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.*

**END OF SDS**