

SAFETY DATA SHEET



Revision date: 09-Oct-2023

Revision Number 2

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name SULFOX
Product Code(s) 000000053580

Other means of identification

UN number 3139

Recommended use of the chemical and restrictions on use

Recommended use Wastewater sulfide control. Hydrogen sulfide scrubbing.
Uses advised against No information available

Supplier

Ixom Operations Pty Ltd
ABN: 51 600 546 512
Level 8, 1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9906 3000

Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

Oxidizing liquids	Category 3
Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 2
Acute aquatic toxicity	Category 1

SIGNAL WORD

Warning

Label elements

Flame over circle
Exclamation mark
Environment

**Hazard statements**

H272 - May intensify fire; oxidizer

H302 - Harmful if swallowed

H319 - Causes serious eye irritation

H400 - Very toxic to aquatic life

Precautionary Statements - Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Keep/Store away from clothing/ combustible materials

Take any precaution to avoid mixing with combustibles

Wash hands thoroughly after handling

Do not eat, drink or smoke when using this product

Wear eye/face protection

Avoid release to the environment

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.

Collect spillage

Precautionary Statements - Storage

No storage statements

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification

AUH031 - Contact with acids liberates toxic gas

Poisons Schedule (SUSMP) 6

3. COMPOSITION/INFORMATION ON INGREDIENTS**Mixture**

Chemical name	CAS No.	Weight-%
Sodium nitrite	7632-00-0	<50%
Sodium nitrate	7631-99-4	<50%
Non hazardous component(s)	-	to 100%

4. FIRST AID MEASURES**Description of first aid measures****General advice**

For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, (trained personnel should) give oxygen. If breathing is irregular or stopped, administer artificial respiration. Call a physician if symptoms occur.

Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash off immediately with plenty of water. Call a physician if symptoms occur.
Ingestion	Clean mouth with water. Do NOT induce vomiting. Drink 1 or 2 glasses of water. Get medical attention if symptoms occur.

Most important symptoms and effects, both acute and delayed

Symptoms Irritation. May cause redness and tearing of the eyes.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Clinical findings: The smooth muscle relaxant effect of nitrate salts may lead to headache, dizziness and marked hypotension. Cyanosis is clinically detectable when approximately 15% of the haemoglobin has been converted to methaemoglobin (ferric iron). Symptoms such as headache, dizziness, weakness and dyspnoea occur when methaemoglobin concentrations are 30% to 40%; at levels of about 60%, stupor, convulsions, coma and respiratory paralysis occur and the blood is a chocolate brown colour. At higher levels death may result. Spectrophotometric analysis can determine the presence and concentration of methaemoglobin in blood.

Treatment:

1. Give 100% oxygen.
2. In cases of (a) ingestion: use gastric lavage, (b) contamination of skin (unburnt or burnt): continue washing to remove salts.
3. Observe blood pressure and treat hypotension if necessary.
4. When methaemoglobin concentrations exceed 40% or when symptoms are present, give methylene blue 1 to 2mg/kg body weight in a 1% solution by slow intravenous injection. If cyanosis has not resolved within one hour a second dose of 2 mg/kg body weight may be given. The total dose should not exceed 7 mg/kg body weight as unwanted effects such as dyspnoea, chest pain, vomiting, diarrhoea, mental confusion and cyanosis may occur. Without treatment methaemoglobin levels of 20-30% revert to normal within 3 days.
5. Bed rest is required for methaemoglobin levels in excess of 40%.
6. Continue to monitor and give oxygen for at least two hours after treatment with methylene blue.
7. Consider transfer to centre where haemoperfusion can be performed to remove the nitrates from the blood if the condition of the patient is unstable.
8. Following inhalation of oxides of nitrogen the patient should be observed in hospital for 24 hours for delayed onset of pulmonary oedema.

Further observation for 2-3 weeks may be required to detect the onset of the inflammatory changes of bronchiolitis fibrosa obliterans.

5. FIRE FIGHTING MEASURES**Suitable Extinguishing Media**

Suitable Extinguishing Media Dry chemical, CO₂, water spray or regular foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Promotes the combustion (oxidizer). Can cause fire and explosion when in contact with flammable substances. Any material contaminated with the product (e.g. clothes) ignites

easily and burns vigorously - increased fire hazard.
Nitrate salts on their own are not combustible, however, they will support the combustion of other materials. Decomposes on heating emitting irritating white fumes and/or brown fumes. Brown fumes indicate the presence of toxic oxides of nitrogen.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code 2Y

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin and eyes. Avoid breathing vapors or mists. Ensure adequate ventilation. Do not touch or walk through spilled material. Stop leak if you can do it without risk. Evacuate personnel to safe areas. Use personal protective equipment as required. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up with sand or other non-combustible absorbent material and place into containers for later disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes, and clothing. Avoid breathing vapors or mists. Do not eat, drink or smoke when using this product. Do not mix with other chemicals. Ensure adequate ventilation. Use personal protection equipment. Wash thoroughly after handling. Keep out of reach of children. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from foodstuffs. Keep container closed when not in use.

This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.

Incompatible materials Acids. Reducing agents. Ammonia. Calcium-containing solutions.

Poisons Schedule (SUSMP) 6

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits No value assigned for this specific material by Safe Work Australia.

Appropriate engineering controls

Engineering controls Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as 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.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES.



Eye/face protection

Goggles.

Skin and body protection

Overalls. Wear suitable protective clothing. Boots.

Hand protection

Impervious gloves.

Respiratory protection

If determined by a risk assessment an inhalation risk exists, wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Environmental exposure controls

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear
Color	Pale Yellow
Odor	Not specified
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	ca. 9	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	<5°C	None known
Boiling point / boiling range	>100°C	None known
Flash point	Not applicable	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	Not applicable	
Lower flammability or explosive limits	Not applicable	

Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	ca. 1.2-1.4	None known
Water solubility	Miscible in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	Not applicable	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information**10. STABILITY AND REACTIVITY****Reactivity**

Reactivity Contact with acids liberates toxic gas.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions Contact with acids liberates toxic gas.

Conditions to avoid

Conditions to avoid Do not contaminate food or feed stuffs.

Incompatible materials

Incompatible materials Acids. Reducing agents. Ammonia. Calcium-containing solutions.

Hazardous decomposition products

Hazardous decomposition products Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Information on likely routes of exposure**

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation May cause irritation.

Eye contact Causes serious eye irritation.

Skin contact May cause irritation.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause a lowering of blood pressure (hypotension).

Symptoms Irritation. May cause redness and tearing of the eyes.

Numerical measures of toxicity - Product Information

Refer to component information below.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium nitrite	157.9 mg/kg (rat) 175 mg/kg (mouse) 186 mg/kg (rabbit)	-	= 5.5 mg/L (Rat) 4 h
Sodium nitrate	= 1267 mg/kg (Rat)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation Causes serious eye irritation. Classification is based on mixture calculation methods based on component data.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Chronic effects: Under certain circumstances nitrosamines can form in contact with nitrosating agents (eg nitrites, nitrous oxides). Nitrosamines were found to cause cancer in animal experiments. NITRATES: Ingestion of large quantities will cause methaemoglobinemia with headaches, heart beat irregularities, blood pressure loss, cramps and breathing difficulties. Cyanosis will occur. Nephritis can result from chronic exposure.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity Keep out of waterways. Very toxic to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sodium nitrite	-	LC50: =0.19mg/L (96h, Oncorhynchus mykiss) LC50: 0.092 - 0.13mg/L (96h, Oncorhynchus mykiss) LC50: 0.4 -	-	-

		0.6mg/L (96h, Oncorhynchus mykiss) LC50: 0.65 - 1mg/L (96h, Oncorhynchus mykiss) LC50: =2.3mg/L (96h, Pimephales promelas) LC50: =20mg/L (96h, Pimephales promelas)		
Sodium nitrate	-	LC50: =2000mg/L (96h, Lepomis macrochirus) LC50: 994.4 - 1107mg/L (96h, Oncorhynchus mykiss)	-	-

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation No information available.

Component Information

Chemical name	Partition coefficient
Sodium nitrite	-3.7
Sodium nitrate	-3.8

Mobility

Mobility in soil No information available.

Other adverse effects**13. DISPOSAL CONSIDERATIONS****Waste treatment methods**

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION**ADG**

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN number 3139
Proper shipping name OXIDISING LIQUID, N.O.S. (CONTAINS SODIUM NITRITE AND SODIUM NITRATE)
Hazard class 5.1
Packing group III
Hazchem code 2Y

IATA

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN number 3139
UN proper shipping name OXIDIZING LIQUID, N.O.S. (CONTAINS SODIUM NITRITE AND SODIUM NITRATE)
Transport hazard class(es) 5.1
Packing group III

IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number 3139
UN proper shipping name OXIDIZING LIQUID, N.O.S. (CONTAINS SODIUM NITRITE AND SODIUM NITRATE)
Transport hazard class(es) 5.1
Packing group III
IMDG EMS Fire F-A
IMDG EMS Spill S-Q

15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Australia**

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons (SUSMP)

Poisons Schedule (SUSMP) 6

International Inventories

AIC All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.

Legend:

AIC- Australian Inventory of Industrial Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

Reason(s) For Issue: 5 Yearly Revised Primary SDS

Issuing Date: 09-Oct-2023

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australian Industrial Chemicals Introduction Scheme (AICIS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)
 National Library of Medicine's PubMed database (NLM PUBMED)
 National Toxicology Program (NTP)
 New Zealand's Chemical Classification and Information Database (CCID)
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program
 Organization for Economic Co-operation and Development Screening Information Data Set
 RTECS (Registry of Toxic Effects of Chemical Substances)
 World Health Organization

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet