

## SAFETY DATA SHEET (SDS) Sulphur Dioxide

Please ensure that this SDS is received by the appropriate persons


Review Date: 24/7/2023 v01

Emergency: 0860 02 02 02

Document Number: AFX-SDS-0068

1. PRODUCT AND COMPANY IDENTIFICATION	
<b>Product Synonym</b>	Sulphur Dioxide Sulphur Dioxide
<b>Chemical Formula</b>	SO <sub>2</sub>
<b>Trade Name</b>	Sulphur Dioxide 75Kg Sulphur Dioxide 78Kg Sulphur Dioxide 1000Kg
<b>Colour Coding</b>	Green body with yellow shoulder and lime green valve guard
<b>Product Code</b>	540901-LJ-N 540902-LJ-N 540901-TB-N
<b>Company Identification</b>	African Oxygen Limited Grayston Office Park Building 7 128 Peter Road Sandown, Sandton, 2196 Tel. No: (011) 490-0400 Fax No: (011) 490-0530 Email: <a href="mailto:customer.service@afrox.linde.com">customer.service@afrox.linde.com</a> <a href="http://www.afrox.com">www.afrox.com</a>
<b>Emergency Numbers</b>	<b>0860 02 02 02 (Afrox)</b>

2. HAZARD IDENTIFICATION	
<b>Classification</b>	- Classification under South African Hazardous Chemical Substances Regulations subsequently amended. (HCS) - GASES UNDER PRESSURE - Liquefied gas - ACUTE TOXICITY (inhalation)-Category 3 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 - SKIN CORROSION - Category 1B - SERIOUS EYE DAMAGE - Category 1 - AQUATIC HAZARD (ACUTE) -Category 1
<b>Emergency Overview</b>	Colour: Colourless Odour: Irritating burning sensation Taste: Pungent Physical State: Gas / Liquid under own vapour pressure
	- All cylinders are portable gas containers and must be regarded as pressure vessels at all times. - Sulphur Dioxide does not support life.
<b>Adverse Health Effects</b>	- Harmful if inhaled.
<b>Chemical Hazards</b>	- Acute Toxicity
<b>Biological Hazards</b>	- Vapour is harmful to living organisms
<b>Vapour Inhalation</b>	- Acute toxicity - Will cause severe pulmonary spasms.

<b>GHS Classification</b>	- Acute toxicity 3
	
<b>GHS Signal Words</b>	Danger
<b>GHS Hazard Statements</b>	H280: Contains gas under pressure; may explode if heated H331: Toxic if inhaled H314: Causes severe skin burns and eye damage H318: Causes serious eye damage H400: Very toxic to aquatic life
<b>GHS Precautionary Statements</b>	<b>Prevention:</b> P261: Do not breathe gas / vapours / spray/fumes P271: Use only outdoors or in a well ventilated area P264: Wash exposed skin thoroughly after handling P280: Wear protective gloves/protective clothing/eye protection/face protection P273: Avoid release to the environment <b>Response:</b> P304+P340: IF INHALED: remove to fresh air and keep at rest in a position comfortable for breathing P310: Immediately call a POISON CENTRE or doctor/physician P320: Specific treatment is urgent (see first aid measures section) P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P363: Wash contaminated clothing before reuse P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing P310: Immediately call a POISON CENTRE/doctor P321: Specific treatment: Reference to supplemental first aid instruction P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P391: Collect spillage <b>Storage:</b> P410 + P403: Protect from sunlight. Store in a well-ventilated place P403 + P233: Store in a well-ventilated place. Keep container tightly closed

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	P405 Store locked up <b>Disposal:</b> - P501 Dispose of content/container in accordance with local / regional / national /international regulations (to be specified)
<b>Other Hazards that do not result in classification</b>	- Heavier than air will displace oxygen in low lying area - Contact with evaporating liquid may cause frostbite or freezing of skin

### 3. COMPOSITION OF INGREDIENTS

<b>Chemical name</b>	Sulphur Dioxide
<b>Chemical family</b>	Sulphur Dioxide
<b>CAS No</b>	7446-09-5
<b>UN No</b>	1079
<b>ERG No</b>	125
<b>Hazard class</b>	Class 2.3, 8
<b>Hazchem Warning</b>	2 RE

### 4. FIRST AID MEASURES

<b>Eye contact</b>	The liquid may cause frostbite - Rinse the eye with water immediately - Remove contact lenses, if present and easy to do. Continue rinsing - Flush thoroughly with water for at least 15 minutes - Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes
<b>Skin Contact</b>	The liquid may cause frostbite - For exposure to liquid, immediately warm frostbite area with warm water not to exceed 41°C. Water temperature should be tolerable to normal skin - Maintain skin warming for at least 15 minutes or until normal colouring and sensation have returned to the affected area - In case of massive exposure, remove clothing while showering with warm water Seek medical evaluation and treatment as soon as possible
<b>Ingestion</b>	- Ingestion is not considered a potential route of exposure
<b>Inhalation</b>	- In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation - Remove victim to uncontaminated area wearing self-contained breathing apparatus. - Keep victim warm and rested. Seek medical attention. Apply artificial respiration if breathing stopped

### 5. FIRE-FIGHTING MEASURES

<b>Suitable extinguishing media</b>	- Material will burn. In case of fire in the surroundings: use appropriate extinguishing agent - Use water spray to reduce vapours or divert vapor cloud drift. Water Spray or Fog. - Dry powder. Foam. Carbon Dioxide
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<b>Unsuitable extinguishing media:</b>	- None
<b>Specific Hazards</b>	- Asphyxiant - Liquid may cause cryogenic burns - Fire or excessive heat may produce hazardous decomposition products
<b>Special fire fighting procedures:</b>	- In case of fire: Stop leak if safe to do so. Continue water spray from protected position until container stays cool. Use extinguishants to contain the fire
<b>Special protective equipment for firefighters:</b>	- Exposed Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces a self-contained breathing apparatus

### 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions, protective equipment and emergency procedures:</b>	- <b>WARNING!</b> Liquid and gas under pressure. Rapid release of gaseous Sulphur Dioxide through a pressure relief device (PRD) or valve can result is very cold and can cause frostbite.  - Evacuate area - Provide adequate ventilation - Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe - In an enclosed or non-ventilated space, a self-contained breathing apparatus must be used
<b>Environmental Precautions</b>	- Prevent further leakage or spillage if safe to do so. Reduce vapour with fog or fine water spray. Keep run-off water out of sewers and water sources. Dike for water control
<b>Methods and material for containment and cleaning up:</b>	- Provide adequate ventilation - Provide adequate ventilation. Wash contaminated equipment or sites of leaks with copious quantities of water

### 7. HANDLING AND STORAGE

<b>Safe Handling</b>	- Only experienced and properly instructed persons should handle gases under pressure. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Refer to supplier's handling instructions. The substance must be handled in accordance with good industrial hygiene and safety procedures. Protect containers from physical damage; do not drag, roll, slide or drop. Do not remove or deface labels provided by the supplier for the identification of the container contents. When moving containers, even for short distances, use appropriate equipment eg. trolley, hand
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	<p>truck, fork truck etc. Secure cylinders in an upright position at all times, close all valves when not in use. Provide adequate ventilation. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Observe all regulations and local requirements regarding storage of containers. When using do not eat, drink or smoke. Store in accordance with local/regional/national/international regulations. Never use direct flame or electrical heating devices to raise the pressure of a container. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Replace valve outlet caps or plugs and container caps were supplied as soon as container is disconnected from equipment. Keep container valve outlets clean and free from contaminants particularly oil and water. If user experiences any difficulty operating container valve discontinue use and contact supplier. Never attempt to transfer gases from one container to another. Container valve guards or caps should be in place.</p>
<b>Conditions for safe storage, including any incompatibilities</b>	<p>-Containers should not be stored in conditions likely to encourage corrosion. Keep away from food, drink and animal feeding stuffs. Stored containers should be periodically checked for general conditions and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep pressure containers away from combustible material.</p>

<b>Personal Protection</b>	- When allowed by a risk assessment Respiratory Protective Equipment (RPE) may be used. The selection of the Respiratory Protective Device (RPD) must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected RPD. Self-contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmospheres
<b>Eyes</b>	- Safety eyewear, goggles or face-shield should be used to avoid exposure to liquid splashes. Wear eye protection to when using gases. - Guideline: Personal Eye Protection.
<b>Hands</b>	- Guideline: Protective Chemically resistant gloves against mechanical risks - Additional Information: Wear working gloves while handling containers
<b>Body protection:</b>	- Wear leather apron when handling liquid containers - Keep suitable chemically resistant protective clothing readily available for emergency use - Guideline: Protective clothing against liquid and gaseous chemicals, including liquid aerosols and solid particles
<b>Feet</b>	- Wear safety shoes while handling containers

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION	
<b>Occupational Exposure Hazards (HCS)</b>	- OEL-STEL/C 0,5ppm
<b>Engineering Control Measures</b>	<p>- Engineering control measures are preferred to reduce exposures. General methods include mechanical ventilation, process or personal enclosure, and control of process conditions. Administrative controls and personal protective equipment may also be required.</p> <p><b>A Risk assessment should be conducted to evaluate the suitability of PPE to the task being performed</b></p>

9. PHYSICAL AND CHEMICAL PROPERTIES	
<b>Chemical Name</b>	<b>Sulphur Dioxide</b>
<b>Chemical Symbol</b>	SO <sub>2</sub>
<b>Physical state</b>	Gas
<b>Form:</b>	Gas
<b>Colour:</b>	Colourless
<b>Odour:</b>	Irritating burning sensation
<b>Odour Threshold:</b>	Odour threshold is subjective and is inadequate to warn of over-exposure.
<b>pH:</b>	Not available
<b>Melting Point:</b>	-75°C
<b>Boiling Point:</b>	-10.0 °C
<b>Sublimation Point:</b>	Not Known
<b>Critical Temp. (°C):</b>	-100.5°C
<b>Flash Point:</b>	Not applicable
<b>Evaporation Rate:</b>	Not applicable.
<b>Flammability ( gas):</b>	Non-Flammable
<b>Flammability limit - upper (%):</b>	Non flammable
<b>Flammability limit - lower(%):</b>	Non flammable
<b>Vapour pressure:</b>	1.16 Bar@20°C
<b>Vapour density</b>	2.71 @20°C
<b>Relative density:</b>	2.26 @ 20 °C
<b>Solubility(ies)</b>	

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<b>Solubility in Water:</b>	Completely soluble
<b>Partition coefficient (n-octanol/water):</b>	Not known
<b>Autoignition Temperature:</b>	Non flammable
<b>Decomposition Temperature:</b>	Not known
<b>Viscosity</b>	
<b>Kinematic viscosity:</b>	No data available
<b>Dynamic viscosity:</b>	No data available
<b>Explosive properties:</b>	Not applicable
<b>Oxidising Properties:</b>	Not applicable
<b>Molecular weight</b>	64.065 g/mol

10. STABILITY AND REACTIVITY	
<b>Reactivity</b>	Not reactive
<b>Chemical stability</b>	Stable under normal conditions
<b>Possibility of hazardous reactions</b>	May polymerise. May react violently with alkaline-earth and alkali metals. OXIDIZING! Reacts violently with strong bases. Reacts with Moisture Reacts with water to form corrosive acids
<b>Conditions to avoid</b>	Overheating of cylinders. Never use cylinders as rollers or supports, or for any other purpose than the storage of Sulphur Dioxide Avoid contact with oxidizing agents. Avoid alkalis and/or heat. Avoid contact with strong reducing agents. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Avoid moisture in the installation. May attack some plastics, rubber and coatings. Moisture. Oxidizing, avoid contact with reducing agents. Polymerization initiators
<b>Incompatible Materials</b>	Oxidisers
<b>Hazardous Decomposition of Products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced

11. TOXOLOGICAL INFORMATION	
<b>Acute Toxicity</b>	Extremely toxic Toxic if inhaled
<b>Skin &amp; eye contact</b>	Causes serious eye damage
<b>Chronic Toxicity</b>	No data on chronic toxicity
<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met
<b>Mutagenicity</b>	Based on available data, the classification criteria are not met
<b>Reproductive Hazards</b>	Based on available data, the classification criteria are not met

12. ECOLOGICAL INFORMATION	
<b>Toxicity</b>	Ecological damage caused by this product.
<b>Persistence and degradability</b>	Not applicable to gases and gas mixtures.

<b>Bioaccumulative Potential Product</b>	The subject product is expected to biodegrade and is not expected to persist for long periods in an aquatic environment
<b>Mobility in soil</b>	Because of its high volatility, the product is unlikely to cause ground or water pollution
<b>Results of PBT and vPvB assessment</b>	Not classified as persistent, bio-accumulating and toxic (PBT).
<b>Other adverse effects</b>	Corrosive when in water No ecological damage caused by this product
<b>Effect on ozone layer</b>	None
<b>Effect on the global warming (CO2=1)</b>	0

13. DISPOSAL CONSIDERATIONS	
<b>Disposal Methods</b>	- Do not discharge into any place where its accumulation could be dangerous. Vent to atmosphere in a well-ventilated place
<b>Disposal of Packaging</b>	- The container is the property of the supplier, and the disposal of the containers must only be handled by the supplier

14. TRANSPORT INFORMATION	
Road Transportation	
<b>UN No.</b>	1079
<b>Shipping Name</b>	Sulphur Dioxide
<b>ERG No.</b>	125
<b>Class</b>	2.3, 8
<b>Subsidiary Risk</b>	Non-flammable, toxic gases
<b>Hazchem Warning</b>	2RE Toxic Gas
Sea Transportation	
<b>IMDG</b>	1079
<b>Shipping Name</b>	Sulphur Dioxide
<b>ERG No.</b>	125
<b>Class</b>	2.3, 8
<b>Subsidiary Risk</b>	Corrosive, toxic gases
<b>Label</b>	Toxic corrosive Non-flammable Gas
Air Transportation	
<b>ICAO/IATA Code</b>	1079
<b>Class</b>	2.3, 8
<b>Packing Group:</b>	-
<b>Packaging instructions</b>	- Cargo: not allowed - Passenger: not allowed

15. REGULATORY INFORMATION	
EEC Hazard class: Toxic, Corrosive gas. National legislation OHSact and Regulations 85 of 1993.	
<b>SANS 11014:2010 Edition 1</b>	Safety data sheet for chemical products - Content and order of sections
<b>SANS 10228:2012 Edition 6</b>	The identification and classification of dangerous goods for transport by road and rail modes

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<b>SANS 10234:2019 Edition 2</b>	Globally Harmonized System of classification and labelling of chemicals (GHS)
<b>SUPPLEMENT TO SANS 10234 Edition 1</b>	List of classification and labelling of chemicals in accordance with the Globally Harmonized System (GHS)

#### 16. OTHER INFORMATION

- Ensure all national/local regulations are observed.
- Ensure users and relevant persons understand the asphyxiation hazard
- Regularly check supplier's information sources for updated versions of SDS's

<b>Revision Date</b>	24/07/2023 v01
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#### Bibliography

Compressed Gas Association, Arlington, Virginia  
 Handbook of Compressed Gases - 3rd Edition  
 Matheson Gas Data Book - 6th Edition  
 SANS 11014 - Safety data sheet for chemical products:  
 Content and order of sections  
 SANS 10234 - List of classification and labelling of chemicals in accordance with the Globally Harmonized System (GHS)  
 SANS 10265 – Classification and Labelling of Dangerous Substances

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