



**SAFETY DATA SHEET (SDS)**

Registered Disinfectant: Act 29 – GNR529/237686/072/0778

SAFETY DATA SHEET (SDS) according to ISO / SANS 11014 : 2009 / 2010,  
UN Transportation of Dangerous Goods,  
UN Globally Harmonized System of classification and Labelling and EC Directives 1272/2008

**SECTION 2. Hazards Identification**

GHS Classification of the substance: Oxidizing

Hazard Class	Class 5.1	Solid
Hazard Type	Hazard Category	GHS Hazard Statement
Acute toxicity oral	Category 4	H302 Harmful if swallowed
Acute toxicity dermal	Category 5	H313 May be harmful in contact with skin
Acute toxicity inhalation	Category 3	H331 Toxic if fumes are inhaled after contact with moisture
Respiratory sensitizer	Category 1B	H334 May cause allergy or asthma symptoms or breathing difficulties
Skin corrosion/irritation	Category 3	H316 Causes skin irritation
Eye damage/ irritation	Category 1	H318 Causes serious eye damage
Oxidizing solid	Category 2	

**SECTION 1. Identification – Chemical Product and Company**

Trade Name	
Product Code	F95 66900
Chemical Technical Name	Chlorine Dioxide Solid (Powder)
Proper Shipping Name	Oxidizing Solid, NOS
UN Number	UN1479
CAS Number	Mixture
GHS Product identifier	Biocide
Chemical Family	Inorganic compound
Recommended use of the Chemical	Surface disinfection, deodorizer, water treatment.
Restrictions of the Chemical	Reacts with water / liquids / moisture. Acids and oxidizers.

The most important adverse effects to know in emergency are –



**GHS label elements, including precautionary Statements:**



GHS 03 – Oxidizer  
GHS 07 – Harmful if swallowed

**Signal word:** Warning

**Hazard Statements –**

H302 Harmful if swallowed  
H312 Harmful on contact with skin  
H331 Toxic if fumes are inhaled after exposed to moisture  
H318 Cause severe eye damage  
H270 May intensify fire : oxidizer

**Precautionary statements Prevention:**

P234 Wash face, hands and any exposed skin thoroughly after handling  
P270 Do not eat, drink or smoke when using this product  
P280 Do not breathe dust/fume/gas/mist/vapors/spray  
P280 Wear protective gloves/protective clothing/eye protection/face protection  
P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
P220 Keep/Store away from clothing/ combustible materials

**Response:**

Immediately call a POISON CENTER or doctor/physician

**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician

**IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

**IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician

**IF SWALLOWED:** Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Do NOT induce vomiting

**Storage:**

Refer Section 7  
P233 Keep container tightly closed.  
P405 Store locked up.

**Special Labelling requirements – refer Section 14 for transport labels**

**SECTION 3. Composition / information on ingredients**

Chemical Identity	Mixture of inorganic salts, Sod Chlorite, troclosene sodium dihydrate
Other means of identity	White powder or tablet
Common Name, synonyms, etc.	Chlorine Dioxide

Ingredient name	UN Number	CAS number	%	Classification EC1272/2008
Sodium Chlorite		7758-19-2	65-75	231-836-6
Troclosene Sodium Dihydrate		51580-86-0	1-10	Index 613-030-01-07



#### SECTION 4. First Aid Measures

##### **Most important symptoms/effects, and necessary measures:**

**Product in eye** – can cause serious eye damage / irritation. Flush eyes with water for 15 mins whilst holding eyelids open and remove any contact lens if safe to do so. Repeat rinsing if irritation persists and get medical attention. NB care must be taken to avoid contaminated rinsing's running back into the eyes.

**Product on skin** – can cause skin irritation, sensitizing. Remove any contaminated clothing and wash affected area with running water for at least 20 mins. Wash contaminated clothing and shoes thoroughly before reuse.

**Product ingested** – do not induce vomiting, get victim to rinse mouth with water and then give at least 250 – 300ml water / milk to drink. If vomiting occurs, wipe mouth and give more water + get medical attention. NB if the victim is losing consciousness for any reason do NOT try to give anything by mouth!

**Product inhaled or aspirated** – May cause drowsiness or dizziness. Move patient to fresh air and if any breathing difficulty persists get immediate medical advice.

##### **Most important symptoms and effects, both acute and delayed**

Signs and Symptoms of Exposure: Giddiness, headache, dizziness and nausea.

Health Hazards (Acute and Chronic): Fumes irritates eyes. High concentration of fume irritate respiratory tract, is anesthetic and may cause CNS depression.

Medical Conditions Generally Aggravated by Exposure: Pre-existing and respiratory disorders, may be aggravated by exposure. Exposure to solvent vapor concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system.

Symptoms include headache, nausea, dizziness, fatigue, drowsiness and in extreme cases, loss of consciousness. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

#### SECTION 5. Fire-Fighting Measures.

**General** : PRODUCT IS NOT FLAMMABLE, COMBUSTABLE OR HARMFUL IF FOIL SEAL IS UNOPENED AND NOT IN CONTACT WITH WATER / LIQUIDS. May cause toxic gasses should packaging be damaged and come into contact with liquids. In case of fire – evacuate area. Substance/product is an oxidising agent and can supply oxygen to stimulate or accelerate the combustion of organic or other combustible substances/products. Fight fire from maximum distance

**Suitable extinguishing media**: Water in copious quantities, water

**Unsuitable extinguishing material**: Do not use dry chemical, carbon dioxide, or halogenated extinguishing agents

**Small fires** – immediate response action should quickly put out the fire.

**Large fires** – evacuate area, move containers out and away from fire if can be done safely without increasing risk. Isolate and contain fire as much as possible, and dike or use inert material for berm to contain any spilled materials and run-off water for later disposal. NB need to prevent run-off containing product from contaminating any water source as harmful to aquatic life.

**Special hazards** - Substance/product may act as an oxidiser. Upon exposure to water or water vapour, chloride dioxide gas is released.

**Protective clothing** - Wear full protective clothing and self-contained, positive breathing apparatus for large fires – get professional emergency response where very large.

**Refer to the ERG - Emergency Response Guide 2016 and SANS 10232 - 3 - ERG 140**

**NB: prompt actions can prevent spread of small fires but Large fires involving chemicals require professional Emergency Response.**





## SECTION 6. Accidental Release Measures.

**Personal precautions** - Wear personal protection before attempting to respond and contain or cleanup spills. Refer section 8

**Environmental precautions** - Do not allow spills to enter drains or waterways. Do not dispose large volumes of any chemical into watercourses or sewers, as components are environmental hazards.

### Clean-up methods -

**Containment:** Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Do not add water to spilled material. Using clean dedicated equipment, sweep and scoop all spilled material, contaminated soil, and other contaminated material and place into clean dry containers for disposal. Do not close containers containing wet or damp material. They should be left open to disperse any hazardous gases that may form.

**Clean up:** Use personal protective equipment as required. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically, placing in appropriate containers for disposal. Avoid creating dust. Clean contaminated surface thoroughly. Pick up and transfer to properly labelled containers. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Do not use floor sweeping compounds to clean up spills. Do not transport wet or damp material. Contact supplier in Section 1 for instructions, especially for damp or contaminated material.

**GHS Disposal Precautionary Statement - P501** dispose of spilt product, waste and containers in accordance with SA National and / or regional Regulations refer National Environmental Management Waste Act - NEM: WA, it's Regulations and local by-laws. This informs permitted Waste Facilities and Service providers see the South African Waste Information Centre [sawic.environment.gov.za](http://sawic.environment.gov.za)

## SECTION 7. Handling and Storage

### Precautions for safe handling – wear appropriate personal protective equipment – see Section 8.

Eating, drinking and smoking shall be prohibited in areas where chemicals are handled, stored or processed. Workers must wash hands before eating, drinking or smoking to remove any chemicals that could be ingested or inhaled and should remove contaminated clothing and protective equipment before entering eating areas.

**Storage requirements:** Store in a cool place out of direct sun and avoid sources of potential contamination.

**Handling precautions:** Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation. Do not mix with other chemicals. Keep/Store away from clothing/ combustible materials. Wash thoroughly after handling. Use only in well-ventilated areas.

**Conditions for Safe Storage - refer SANS 10263:** The Warehousing of dangerous goods, and 10263 - Part 8 The storage and handling of corrosive substances, for more specific information and relevant regulations and recognised practices for storage, warehousing and handling.

**GHS Precautionary Statement:** - Keep in cool dry place. Keep out of reach of children

### Suitable storage materials

Incompatible with strong acids and bases. Ammonia. Calcium hypochlorite. Combustible material. Do not mix with swimming pool/spa chemicals in their concentrated forms or Reducing agent.

**Product Labels** – Blue label including description, application, Hazards, precautions & batch no + Transport see S 14

**Product Shelf life** – 24 months from date of manufacture.

## SECTION 8. Exposure controls / personal protection

**Control parameters** e.g. occupational exposure limit values or biological limit values

Ingredient name	%	Exposure limits – OHS Act South Africa 1993
Chlorine Dioxide	100	Exposed to moisture - OSHA PEL & ACGIH TLV 0.1ppm, 0.3ppm STEL
Sodium Chlorite		Not established
Troclosene Sodium dehydrate		Not established



**SECTION 8. Exposure controls / personal protection**

**Engineering control measures:** Showers, Local ventilation, eye wash stations

**Personal protection – respiratory:** Respiratory protection in case of release of decomposition products. Combination filter for gases/vapours of organic compounds, solid and liquid particles (i.e. EN 14387 Type A-P2).

**Personal protection – hand:** Chemical resistant protective gloves (EN 374) Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5mm), polyvinylchloride (0.7 mm)

**Personal protection – eye:** Tightly fitting safety goggles (cage goggles) (e.g. EN 166) and face shield.

**Personal protection – skin:** Body protection must be chosen based on level of activity and exposure., acid - resp. lye - proof apron, e.g. of rubber (i.e. according to En 14605), protection boots, e.g. of rubber (i.e. according to EN 20346), acid-proof chemical protection suit (i.e. according to EN 14605)

**Personal protection – ingestion:** Very hazardous in case of ingestion. Restrict access to unauthorized persons. Wash hands after contact. Avoid inhalation.

**Other protection -** A safety shower and eye wash facility should be nearby and ready for use.

**SECTION 8. Exposure controls / personal protection**

Gloves	Eye Protection	Running water	Dust masks
Rubber / PVC	Goggles/Shield	Access	Dust Mask
			

**SECTION 9. Physical and chemical properties**

Appearance	Whitish tablet / powder
Odour	Characteristic chlorine odour.
Odour Threshold	Not known
pH (of diluted product)	6.00 – 7.00 @ 0.01%
Density	0.80 – 0.95 (0.8g / cm <sup>3</sup> )
Initial boiling point / range	No information
Melting / Freezing point / range	N/A. 120 – 190 °C The product / substance decomposes
Flash Point	N/A
Explosive Properties	Lower explosion limit – 10% (V)
Flammability	Flammable in the presence of flame
Viscosity	N/A
% Volatile by volume	N/A
Solubility – water	React with water (Easily soluble in cold / hot water)
Foam Ability	Not Applicable
Working temperature	10 – 50°C
Phosphates	Absent
Hard water behavior	Sequesters, broad spectrum
Surface compatibility	No precipitation of solids or separation
Biodegradability	Biodegradable



**SECTION 10. Stability and Reactivity**

Chemical Stability	Product is stable under normal operating and temperature conditions Product is sensitive to direct sunlight.
Reactivity	Product reacts with water or liquids.
Conditions to Avoid	Direct sunlight, poor ventilation and high temperatures
Substances to Avoid	Avoid acids, bases
Incompatible materials	Incompatible with strong acids and bases. Ammonia. Calcium hypochlorite. Combustible material. Do not mix with other chemicals in their concentrated forms. Reducing agent.
Thermal decomposition	Can lead to release of toxic / corrosive gasses and vapours
Hazardous Reactions	Upon exposure to water or water vapour, chlorine dioxide gas is released. The product is stable if stored and handled as prescribed/ indicated. No hazardous decomposition products if stored and handled as prescribed/indicated.
Polymerization	Will not occur.

**SECTION 11. Toxicological Information**

Acute toxicity	Result	Species	Dose/ Exposure	Caution
Oral	Cat 4	Rat	LD50 578 mg/kg	H302 Harmful if swallowed
Dermal	Cat 4	Rabbit	LD50 >2000 mg/kg @ 100ppm	H312 Harmful in contact with skin.
Inhalation	Cat 3	Rat aerosol	LC50 2.07mg/kg 4h @ 200ppm	H331 Toxic if inhaled

Skin Corrosion / Irritation	100ppm - Primary skin irritation rat: non-irritant. The data refer to a diluted watery solution of the substance. Primary irritations of the mucous membrane rabbit: moderately irritating (OECD Guideline 405) As the product corrodes the skin, it can be expected to have similar effects on the eyes as well.
Eye Damage / Irritation	100ppm - Category 2B Irritating
Respiratory Sensitizer	Buehler test guinea pig: non-sensitizing
Germ Cell Mutagenicity	No Evidence
Carcinogenicity	No evidence
Reproductive Toxicity	Has been shown to cause reproductive disorders in laboratory animals.
STOT Single Exposure	Respiratory irritation – may cause drowsiness
Repeated exposure	No Evidence
Aspiration Hazard	Harmful with possible respiratory irritation. Exposure can cause Nausea, headache and vomiting.

**12. Ecological Information**

**GHS – EU Group Classification, and C & L Inventory:**

<b>Hazardous to Aquatic Environment</b>	The hydrolysis products are not acutely harmful to aquatic organisms.
Aquatic Toxicity	Fish LC50 96h > 100mg/l Brachydanio rerio Daphnia TL50 0.29mg/l 48h no effect level 0.10mg/l Mallard duck, dietary LC 50 10 000ppm
Acute (Short Term) Chronic (Long Term)	May cause long term adverse effects in aquatic environment. No Information
<b>Hazardous to the ozone layer</b> Biodegradability / Degradation	Inorganic product which cannot be eliminated from water by biological purification processes. The product is unstable in water. The elimination data also refer to products of hydrolysis.
Bio-accumulation	No information
Mobility	Product is reactive to water releasing Hydronium, sodium, magnesium and chloride ions.





### SECTION 13. Disposal considerations


#### Disposal methods

Disposal must be made in accordance with the applicable National and Regional Government regulations at approved and permitted chemical disposal sites – refer to the SA National Environmental Management Waste Act - NEM: WA, it's Regulations and local by-laws. This informs permitted Waste Facilities and Service providers see the South African Waste Information Centre [sawic.environment.gov.za](http://sawic.environment.gov.za)

#### Disposal of packaging

Packaging's and containers, even those that have been emptied, will retain product residue and vapours, handle empty containers as if they were full. Remove all possible traces of product and wash prior to disposal of packaging and containers. Dispose in compliance with Regulations – see above and Industry Best Practice  
Always observe and comply with hazard warnings

### SECTION 14. Transport information

UN Number	UN1479
UN proper shipping name – PSN	Oxidizing Solid NOS
Transport Class	 5.1 Oxidizer
Packing group	III
Environmental hazards	Harmful to aquatic life
IMDG	UN Certified drum Special Provision – 223, 274, 900. Limited Quantities 5Kg. Excepted quantities E1 Packing Instruction P002 & LP02. IBC 08, Provisions B3 Tank Instruction T1 Provision TP33 EMS – F-A & S-Q Category B, Segregation – SG38, SG49, SG 60, SG61 Not a Marine pollutant - IMDG 2.9.3 below threshold Refer IMDG Code volume 2 Amendment 37-14
IATA	Single packaging - Foil packaging as inner, DWB as outer EQ – E1 Passenger Packing instruction Passenger Aircraft Y546 10kg / Passenger Cargo PI559, 25kg Cargo Packing instruction – PI563 220Lt – 100kg Special Provisions – None ERG Code 5L Refer IATA 2016 57 <sup>th</sup> edition
Emergency Response Guide – ERG 2016	Refer Guide 140 for Oxidizing solid NOS info on Emergency response

### SECTION 15. Regulatory information

**OHS Act - Occupational Health and Safety Act 85 of 1993:** requires site Risk Assessment and monitoring to inform personnel Health / Biological Monitoring. Section 9A requirement to provide MSDS

**MHI – Major Hazards Installations Regulations - OHS Act:** require site Risk Assessment to ascertain potential impacts outside of the site and potential impacts on the public or neighbours. Copy to be lodged with the Dept Labour, and local Emergency Services.

**Pressure Equipment Regulations - OHS Act:** encompasses containers and service equipment

**NEMA – National Environmental Management Act 107 of 1998:** Duty of Care and Producer Responsibility for products and packaging on a Life Cycle basis. Environmental Impact Assessment Regulations for new installations or proposed increase in capacity over 25%

**NEM:WA – National Environmental Waste Act 59 of 2008:** Extended Producer Responsibility, requirements and regulations for waste management, classification and disposal

**NEM:AQA – National Environmental Air Quality Act 39 of 2004:** AQA Licenses and Emissions

**National Department of Health – Hazardous Substances Act 15 of 1973**

**EU Regulation EC 1272/2008 (EU GHS /CLP) – Safety Data Sheets and Labelling**



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#### SECTION 15. Regulatory information

NRCS Registration – Act29GNR529/237686/072/0778 Disinfectants and detergent – disinfectants for use in the Food Industry

SABS Registration - SANS 1853- 2016 Disinfectants and detergent – disinfectants for use in the Food Industry

#### SECTION 16. Other Information

ECHA – European Chemical Agency Website, Chemical information, C&L Inventory, Chemicals of Very High Concern (SVHCs) and Chemicals for Community Rolling Action Plan (CoRAP)

ERG 2016 Transport Canada and US Dept Transportation PHMSA - Pipeline and Hazardous Materials Safety Administration

Other relevant information including information on preparation and revision of the SDS –

ISO 11014:2009 Safety Data Sheets for Chemical Products – content and order of sections adopted as SANS 11014:2010

UN Recommendations for Transport of Dangerous Goods Model Regulations commonly known as the TDG “Orange Books” 18<sup>th</sup> revision 2013 currently in effect, 19<sup>th</sup> revision published June 2015

UN Globally Harmonized System of Classification and Labelling of Chemicals – GHS commonly known as the GHS “Purple Book” 5<sup>th</sup> revision 2013 in effect, 6<sup>th</sup> revision published July 2015

IMDG – International Maritime Dangerous Goods Code, 2014 edition, amendment 37-14

IATA Technical Regulations 57<sup>th</sup> edition, January 2016

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#### EXCLUSION OF LIABILITY

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, however no guarantee is made to its accuracy. The information given is prepared only as guidance for safe handling, use, processing, storage, transportation, disposal and release and should not be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material when used in combination with any other materials or in any process, unless specified in this Safety Data Sheet.