Advance Chemicals Ltd.

Safety Data Sheet

Section 01 Identification

Product Identifier	KLO-San-FP15
Other Means of Identification	Not available
Product Use and Restrictions on Use	Generation of chlorine dioxide for sanitizing, oxidation or bleaching
Initial Supplier Identifier	ClearTech Industries Inc 1500 Quebec Avenue Saskatoon, SK. Canada S7K 1V7 Phone: 800.387.7503 Fax: 888.281.8109 www.cleartech.ca
Prepared By	ClearTech Industries Inc. technical writer
24-Hour Emergency Phone	306.664.2522

Section 02 Hazard Identification

Physical Hazards

This product does not qualify for any physical hazard class under WHMIS 2015

Health Hazards

Acute toxicity - oral	Category 4
Serious eye damage / eye irritation	Category 1
Specific target organ toxicity - repeated exposure	Category 2

Signal Word

Danger

Hazard Statements

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H373 May cause damage to spleen through prolonged or repeated exposure.

Pictograms

Precautionary Statements

Prevention

P260 Do not breathe vapours, fumes, and mists.

P264 Wash affected body parts thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear , eye protection, face protection

Response

P301 P312 P330 IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.

P305 P351 P338 P310 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.

P314 Get medical advice or attention if you feel unwell.

Disposal

P501 Dispose of contents / container in accordance with all federal, provincial and / or local regulations including the Canadian Environmental Protection Act.

Hazards Not Otherwise Classified

Not available

Supplemental Information

Not available

Section 03 Composition / Information on Ingredients

Hazardous Ingredients:

Chemical name	Common name(s)	CAS number	Concentration (w/w%)
Chlorous acid, sodium salt	Sodium chlorite	7758-19-2	10-30%

Section 04 First-Aid Measures

Description of necessary first-aid measures

Inhalation Get medical advice / attention if you feel unwell or are concerned.

Ingestion Call a POISON CENTER or doctor if you feel unwell. Rinse mouth.

Skin contact Rinse skin with lukewarm, gently flowing water / shower for 5 minutes or until product is removed. If skin irritation occurs or if you feel unwell: Get medical advice / attention.

Eye contact Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a POISON CENTER or doctor.

Most important symptoms and effects, both acute and delayed

Inhalation May cause respiratory irritation.

Ingestion Harmful if swallowed.

Skin contact May cause dryness or irritation.

Eye contact Causes serious eye damage.

Further information For further information see Section 11 Toxicological Information.

Section 05 Fire Fighting Measures

Suitable extinguishing media	Extinguish fire using extinguishing agents suitable for the surrounding fire.
Unsuitable extinguishing media	Not available
Specific hazards arising from the chemical	Thermal decomposition occurs at 175 °C. Thermal decomposition yeilds toxic and corrosive chlorine gas, and sodium chlorate.
Special protective equipment for fire-fighters	Wear NIOSH-approved self-contained breathing apparatus and chemical-protective clothing.

Section 06 Accidental Release Measures

Personal Precautions / Protective Equipment / Emergency Procedures	Wear appropriate personal protective equipment (See Section 08 Exposure Controls and Personal Protection). Stay upwind, ventilate area. Do not breathe vapours, fumes, and mists.
Environmental Precautions	Prevent material from entering waterways, sewers or confined spaces. Notify local health and wildlife officials. Notify operators of nearby water intakes.
Methods and Materials for Containment and Cleaning Up	SMALL SPILLS: Stop or reduce leak if safe to do so. Clean up spill with non-reactive absorbent and place in suitable, covered, labeled containers. Flush area with water. Contaminated absorbent material may pose the same hazards as the spilled product. Use vented containers to avoid pressure buildup. LARGE SPILLS: Contact fire and emergency services and supplier for advice.

Section 07 Handling and Storage

Precautions for Safe Handling	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure. Prevent the release of vapours, fumes, and mists into the workplace air. Inspect containers for damage or leaks before handling. If the original label is damaged or missing replace with a workplace label. Have suitable emergency equipment for fires, spills and leaks readily available.
Conditions for Safe Storage	Store in a cool, dry, well-ventilated area, out of direct sunlight, away from heat sources and incompatible materials. Always store in original labeled container. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues. Protect label and keep it visible.
Incompatibilities	Acids, such as sulphuric, nitric, hydrochloric, phosphoric, flurosilicic (HFSA), sulphonic, acetic, citric, oxalic, and formic. Oxidizing agents, such as oxygen, hydrogen peroxide, sulphuric and nitric acids, hypochlorites and permanganates. Reducing agents, such as hydrogen, sodium borohydride, sulphur dioxide, thiosulphates, hydrazine, phosphites, carbon, and oxalic, formic and ascorbic acid. Organic material, such as wood, paper, gasoline, diesel, solvents and some glycol based heat transfer fluids

Section 08 Exposure Controls and Personal Protection

Exposure limits

Component	Regulation	Type of listing	Value
Chlorine dioxide	ACGIH	TWA	0.1 ppm (0.3 mg/m³)
		STEL / Ceiling	0.3 ppm (0.9 mg/m³)

Engineering controls

Ventilation Requirements
Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.

Other
A soak hose and eyewash station or emergency shower and eyewash station should be available, tested, and be in close proximity to the product being handled in accordance with provincial regulations.

Protective equipment

The following are recommendations only. It is the responsibility of the employer / user to conduct a hazard assessment of the process in which this product being used and determine the proper engineering controls and PPE for their process. Additional regulatory and safety information should be sought from local authorities and, if needed, a professional industrial hygienist.

Eye and face protection
Where there is potential eye or face exposure, tightly fitting safety goggles and a face shield or a full face respirator or similar protective equipment which protects the wearer's face and eyes are recommended. Contact lenses are not recommended; they may contribute to severe eye injury.

Hand and body protection
Where handling this product it is recommended that skin contact is avoided.

Respiratory protection
In case of insufficient ventilation wear suitable respiratory equipment.

NIOSH respirator recommendations for: Chlorine dioxide

Up to: 1 ppm
(APF = 10) Any chemical cartridge respirator with cartridge(s) providing protection against Chlorine dioxide
(APF = 10) Any supplied-air respirator

Up to: 2.5 ppm
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered, air-purifying respirator with cartridge(s) providing protection against Chlorine dioxiden

Up to: 5 ppm
(APF = 50) Any chemical cartridge respirator with a full facepiece and cartridge(s) providing protection against Chlorine dioxide
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against Chlorine dioxide
(APF = 50) Any self-contained breathing apparatus with a full facepiece.
(APF = 50) Any supplied-air respirator with a full facepiece

Emergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted canister providing protection against Chlorine dioxide
Any appropriate escape-type, self-contained breathing apparatus

Thermal hazards	Not available

Section 09 Physical and Chemical Properties

Appearance

Physical state	Liquid
Colour	Clear colourless to light yellow
Odour	Chlorine like
Odour threshold	Not available

Property

pH	>12.0
Melting point / freezing point	Not available
Initial boiling point and boiling range	105 °C
Flash point	Not available
Evaporation rate	Not available
Flammability	Not applicable
Upper flammable limit	Not available
Lower flammable limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	Not applicable
Solubility	Soluble in water
Partition coefficient: n-octanol/water	Log Kow = -2.7 @ 25 °C
Auto-ignition temperature	Not available
Decomposition temperature	175 °C
Viscosity	Not available
Specific gravity	1.12 g/mL @ 20 °C
Formula	$NaClO_2$
Molecular weight	90.45 g/mol

Section 10 Stability and Reactivity

Reactivity	This product is an oxidizer and will react with reducing agents and organic compounds such as paper or wood to produce heat and could potentially catch fire. Reacts with acids to produce chlorine dioxide gas.
Stability	This product is stable if stored according to the recommendations in Section 07.
Possibility of hazardous reactions	Hazardous polymerization is not known to occur.
Conditions to avoid	Avoid contact with incompatible materials. Do not heat.
Incompatible materials	Acids, such as sulphuric, nitric, hydrochloric, phosphoric, flurosilicic (HFSA), sulphonic, acetic, citric, oxalic, and formic. Oxidizing agents, such as oxygen, hydrogen peroxide, sulphuric and nitric acids, hypochlorites and permanganates.

	Reducing agents, such as hydrogen, sodium borohydride, sulphur dioxide, thiosulphates, hydrazine, phosphites, carbon, and oxalic, formic and ascorbic acid. Organic material, such as wood, paper, gasoline, diesel, solvents and some glycol based heat transfer fluids
Hazardous decomposition products	Chlorine and chlorine oxides

Section 11 Toxicological Information

Acute Toxicity (LD50 values)

Component	Route	Species	Value	Exposure time
Acute toxicity estimate	Oral	Rat	1900 mg/kg bw	
Sodium chlorite	Dermal	Rabbit	>2,000 mg/ kg bw	
Sodium chlorite	Inhalation (dust)	Rate	230 mg/m³	4 hours

Toxic Health Effect Summary

Chemical characteristics	Long term exposure (100 mg/L in drinking water over 12 months in male rats) can cause chloroform build up in brain and liver tissues.
Skin	May cause dryness or irritation.
Ingestion	Harmful if swallowed.
Inhalation	May cause respiratory irritation.
Eye contact	Causes serious eye damage.
Sensitization	This product and its components at their listed concentration have no known sensitizing effects.
Mutagenicity	This product and its components at their listed concentration have no known mutagenic effects.
Carcinogenicity	IARC has classified sodium chlorite as group 3, not classifiable as to its carcinogenicity to humans.
Reproductive toxicity	This product and its components at their listed concentration have no known reproductive effects.
Specific organ toxicity	May cause damage to spleen through prolonged or repeated exposure.
Aspiration hazard	Not available
Synergistic materials	Not available

Section 12 Ecological Information

Ecotoxicity

Component	Type	Species	Value	Exposure Time
Sodium chlorite	LC50	Marine water fish	105 mg/L	96 hours
	EC50	freshwater invertabrates	1 mg/L	48 hours
	EC50	freshwater algae	1 mg/L	96 hours

Biodegradability	The domestic substance list categorizes sodium chloroite as non-persistent.
Bioaccumulation	The domestic substance list categorizes sodium chloroite as non-bioaccumulative.
Mobility	This product is water soluble, is not predicted to adsorb to soil and may contaminate ground water.

Other adverse effects	The domestic substance list categorizes sodium chloroite as inherently toxic to aquatic organisms.

Section 13 Disposal Considerations

Waste From Residues / Unused Products	Dispose in accordance with all federal, provincial, and local regulations including the Canadian Environmental Protection Act.
Contaminated Packaging	Do not remove label, follow label warnings even after the container is empty. Empty containers should be recycled or disposed of at an approved waste handling facility.

Section 14 Transport Information

UN number	UN1908
UN proper shipping name and description	CHLORITE SOLUTION
Transport hazard class(es)	8
Packing group	II
Excepted quantities	1 L
Environmental hazards	Not listed as a marine pollutant under Canadian TDG Regulations, schedule III.
Special precautions	No special provisions
Transport in bulk	ERAP index: not available MARPOL 73/78 and IBC Code: This product is not listed in Chapter 17 of the IBC Code.
Additional information	Secure containers (full or empty) during shipment and ensure all caps, valves, or closures are secured in the closed position.

TDG PRODUCT CLASSIFICATION: This product has been classified on the preparation date specified at section 16 of this SDS, for transportation in accordance with the requirements of part 2 of the Transportation of Dangerous Goods Regulations. If applicable, testing and published test data regarding the classification of this product are listed in the references at section 16 of this SDS.

Section 15 Regulatory Information.

NOTE: THE PRODUCT LISTED ON THIS SAFETY DATA SHEET HAS BEEN CLASSIFIED IN ACCORDANCE WITH THE HAZARD CRITERIA OF THE CANADIAN HAZARDOUS PRODUCTS REGULATIONS. THIS SAFETY DATA SHEET CONTAINS ALL INFORMATION REQUIRED BY THOSE REGULATIONS.

All components of this product appear on the domestic substance list.

Section 16 Other Information

Date of latest revision: January 10, 2020

Note: The responsibility to provide a safe workplace remains with the buyer / user. The buyer / 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 buyer / user to comply with all applicable laws and regulations regarding handling, using, reselling and shipping this product.

Attention: Receiver of the chemical goods / SDS coordinator

As part of our commitment to the RDC Responsible Distribution® initiative, ClearTech Industries Inc. and its associated companies require, as a condition of sale, that you forward the attached Safety Data Sheet(s) to all affected employees, customers, and end-users. ClearTech will send any available supplementary handling, health, and safety information to you at your request.

If you have any questions or concerns please call our customer service center.

References:

1) CHEMINFO
2) TOXNET
3) eChemPortal
4) ECHA
5) Transportation of Dangerous Goods Canada
6) HSDB
7) PAN