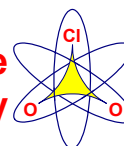


# Material Safety Data Sheet

Issue 5: January 2002

The Chlorine Dioxide  
Solution Company



## SECTION 1 - IDENTIFICATION OF SUBSTANCE

**Product Name** Harvest Wash  
**Application** Food processing aid – vegetable, salad and fruit wash additive, disinfectant  
**Company Name** Vernagene Limited, Units 2&3, Waters Meeting, Britannia Way, Bolton, BL2 2HH  
Tel: +44 (0) 1204 550820

## SECTION 2 - COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Ingredients	Per Cent	OSHA PEL	ACGIH TLV	STEL	OTHER	Symbol	Risk Phrases
Sodium Chlorite [7758-19-2] system	3.36 Minimum	NE	NE	NE	Irritant	Xi	R 36 - Irritating to eyes R 37 - Irritating to respiratory
NE = NOT ESTABLISHED							R 38 - Irritating to skin

## SECTION 3 - HAZARDS IDENTIFICATION

May be irritating to eyes and skin. Inhalation of fog/mist may irritate nose and throat. Inhalation of free chlorine dioxide evolved from acid activation may cause irritation of respiratory mucous membranes and severe headaches.

## SECTION 4 - FIRST AID

**Skin Contact** Wash with soap and water. Contaminated clothing should be washed prior to reuse. Seek medical opinion if in doubt.  
**Inhalation** Unactivated product normally has no respiratory effects. If exposure to chlorine dioxide produced from activation occurs, remove to fresh air and rest. Seek medical advice if in doubt.  
**Eye contact** Flush with water for 15 minutes. Seek medical advice.  
**Ingestion** Do not induce vomiting. Seek medical advice immediately.

## SECTION 5 - FIRE FIGHTING MEASURES

**Flash Point:** None to solution boiling point.  
**Flammable Limits (% by Volume)** N/A  
**Autoignition Temperature** N/E  
**Decomposition Temperature** N/E (For dry sodium chlorite: 180 - 200°C)  
**Extinguishing Media** Not Flammable.  
**Fire Fighting Equipment** Standard protective gear with self-contained breathing apparatus.  
**Special Fire Fighting Procedures** Do not allow solutions to evaporate to dryness. If chlorine dioxide gas is produced, vent to atmosphere. Open or vent any large containers of product.  
**Unusual Fire or Explosive Hazards** If allowed to evaporate to dryness, sodium chlorite is a strong oxidiser which supports combustion. Chlorine dioxide, which may evolve from solutions is explosive in the gaseous phase at concentrations greater than 10% by volume. Prevent chlorine dioxide from accumulating within a confined space.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Personal Precautions** Prevent skin and eye contact. Avoid inhalation of vapours. Wear suitable respiratory equipment if necessary.  
**Environmental Procedures** Not considered significantly environmentally damaging. In case of large spillage appropriate authorities should be informed.  
**Decontamination Procedures** Small spillage <= 25 litres - Flush to foul sewer with copious quantities of water.  
Large spillage - Contain and neutralise with an equal part of sodium sulphite or sodium thiosulphate. Transfer to a suitable container prior to disposal in accordance with local Regulations. The vicinity of the spill should be thoroughly flushed with water after clean-up. Do not allow spilled product to dry to a crystalline salt. Do not discharge this product to storm drains or any surface or groundwater source.

## SECTION 7 - HANDLING AND STORAGE

**Handling** Use product only as directed by the label or by an authorised Vernagene representative. Avoid contact with skin and eyes. Avoid breathing any vapors or fumes resulting from product activation. Use in well ventilated areas. Wear appropriate respiratory equipment if necessary. Thoroughly rinse all protective gear and handling equipment such as transfer pumps and lines with water prior to re-use and storage. If allowed to evaporate to dryness, sodium chlorite is a strong oxidiser that supports combustion. Keep away from children, animals and unauthorized personnel.

**Storage** Store in a cool, dry, well ventilated area away from acids, chlorine and chlorine compounds, hypochlorite (bleach), organic solvents, sulfur and sulfite compounds, phosphorous, combustible/flammable materials, and direct sunlight. Keep containers tightly closed when not in use. Containers should be clearly labeled. Storage on wooden floors and pallets is not recommended. Use within one year of purchase.

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## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits	8 Hr TWA	15 Min STEL	Source
Chlorine Dioxide (from acid activation)	0.3 mg/m <sup>3</sup>	0.9 mg/m <sup>3</sup>	EH40 (Amended Each Year)

### Personal Protection

<b>Respirator</b>	Fogging or spraying activated solutions, or when user is likely to be exposed to chlorine dioxide fumes, in confined spaces or unventilated areas, may require the use of a full or half face canister/cartridge facial respirator rated for chlorine/acid vapors or specified for chlorine dioxide if occupational exposure levels for ClO <sub>2</sub> likely to be exceeded.
<b>Skin Protection</b>	Change any contaminated clothing. Wear suitable gloves.
<b>Eye Protection</b>	Chemical safety glasses.
<b>Engineering Control Measures</b>	Use only in well ventilated areas.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance &amp; Odour</b>	Clear liquid with very faint chlorinous odour.		
<b>Specific Gravity</b>	1.065 - 1.095 (20°C)	<b>Explosive Limits : Upper</b>	N/A
<b>pH</b>	8.2-8.5	<b>Explosive Limits: Lower</b>	N/A
<b>Flash point</b>	N/A	<b>Auto-Ignition temp</b>	N/A
<b>Solubility in water</b>	Complete	<b>Vapour pressure</b>	23.7 mm Hg (25°C)
<b>Boiling Point</b>	105°C	<b>Vapour density</b>	0.023 Kg/m <sup>3</sup>
<b>Melting point</b>	N/A	<b>Volatiles (by volume)</b>	97% (Water)

## SECTION 10 - STABILITY AND REACTIVITY

<b>Stability</b>	Stable.
<b>Conditions To Avoid</b>	Avoid storing product in sunlight or under conditions in which it could evaporate to crystalline salt. Crystalline sodium chlorite is a powerful oxidising agent.
<b>Incompatible Materials</b>	Avoid accidental contact with acids, chlorine compounds, hypochlorites (bleach), sulphur and sulphite compounds, phosphorus, organic solvents, and combustible/inflammable materials.
<b>Hazardous Decomposition Products</b>	Exposure to acids or chlorine compounds can induce uncontrolled generation of chlorine dioxide gas.

## SECTION 11 - TOXICOLOGICAL INFORMATION - OTHER INFORMATION

Condition	LD50/LC50/EC50	Other Information
<b>1 - Eye Contact</b> Mild irritant. Can produce slight irritation of conjunctiva, cornea and eyelid.		
<b>2 - Skin Contact</b> Prolonged exposure may produce localised irritation, contact dermatitis, mild erythema, and edema	Rabbit Acute dermal LD50 >2,020mg/kg	Skin disorder, such as dermal allergies and dermatitis will be aggravated by exposure.
<b>3 - Ingestion</b> - May produce gastric discomfort, nausea, vomiting and diarrhoea	Rat (Oral) LD50 4,360 mg/kg	Ingestion of large quantities may produce methemoglobinemia.
<b>4 - Inhalation</b> Prolonged inhalation of fog/mist will irritate throat and nose.	Acute inhalation LC50 >5.61 mg/L	Exposure to chlorine dioxide will aggravate pulmonary disorders such as emphysema
<b>5 - Dermal Sensitisation Test</b>		Does not elicit a sensitising reaction
<b>6 - Sheepshead Minnow Acute Flow- Through Toxicity</b>	96 Hr LC50 105 mg/l 96 Hr NOEL 60 mg/l	
<b>7 - Acute Flow- Through Mollusc Shell Deposition Test</b>	96 Hr EC50 129 mg/l 96 Hr NOEL 70.6 mg/l	
<b>8 - Static Acute Toxicity to the Freshwater Algae Selenastrum capricornutum</b>	96 Hr EC50 1 mg/l	

<b>Carcinogenicity</b>	No Evidence to date to implicate product as carcinogen or tumour promoter.
<b>Mutagenicity</b>	No evidence to date for mutagenicity from whole animal or <i>in vitro</i> studies.
<b>Reproductive effects</b>	No known effects to date.
<b>Other health hazards</b>	None known.

## SECTION 12 - ECOLOGICAL INFORMATION

<b>Environmental Assessment</b>	All spills and leaks involving more than 25 litres should be reported to the nearest Environment Agency Office or other appropriate authority within 24 hours. Any spill which may contaminate water courses, lakes, streams, rivers, or surface waters of any description should be reported to the Environment Agency immediately
<b>Mobility</b>	No specific data.
<b>Persistence and Degradability</b>	Not considered persistent.
<b>Bio-accumulative Potential</b>	No specific data.
<b>Ecotoxicity</b>	Sodium chlorite is not considered a significant pollutant. Chlorine dioxide evolved following activation is subject to exposure controls (see section 8).

## SECTION 13 - DISPOSAL CONSIDERATIONS

<b>Unused Product</b>	Dispose of in accordance with Local Regulations through an Authorised Contractor.
<b>Used/Contaminated Product</b>	Dispose of in accordance with Legal Regulations through an Authorised Contractor.
<b>Packing</b>	Wash thoroughly with water immediately after use and dispose of in accordance with Local Regulations.

## SECTION 14 - TRANSPORT INFORMATION

Not classed as hazardous for transport by road or rail.

## SECTION 15 - REGULATORY INFORMATION

<u>Classification</u>	<u>Symbol</u>	<u>Risk Phrases</u>	<u>Safety Phrases</u>				
Irritant	Xi	R 36/37/38	S 7/9	S 24/25	S 23	S 38	S 50

**Other: The information contained in this data sheet does not constitute an assessment of workplace risks**

## SECTION 16 - OTHER INFORMATION: REFERENCES

THE CHEMICALS (HAZARD INFORMATION AND PACKAGING FOR SUPPLY) REGULATIONS 1994 AS AMENDED APPROVED CLASSIFICATION AND LABELLING GUIDE  
SAFETY DATA SHEET APPROVED CODE OF PRACTICE  
APPROVED SUPPLY LIST (sixth edition)  
APPROVED CARRIAGE LIST (third edition)  
COMMISSION DIRECTIVE 84/449/EEC  
EH 40  
THE CARRIAGE OF DANGEROUS GOODS (CLASSIFICATION, PACKAGING AND LABELLING) AND USE OF TRANSPORTABLE PRESSURE RECEPTACLES REGULATIONS 1996  
CARRIAGE OF DANGEROUS GOODS BY ROAD REGULATIONS 1996  
CARRIAGE OF DANGEROUS GOODS BY RAIL REGULATIONS 1996

**Legal Disclaimer** The above information is based on the present state of our knowledge of the product at the time of publication. It is given in good faith, no warranty is implied with respect to the quality or the specification of the product. Users must satisfy themselves that the product is entirely suitable for their purpose.