



Safety Data Sheet

Product Name Vibrex 20

Revision 4

Last Reviewed 6/02/2018

1. Identification

Product Name	Vibrex Horticare, Agricare, Foodcare, Aquacare
Chemical Name	Sodium Chlorite
Other Names	Sodium Chlorite (aqueous solution)
Chemical Formula	NaClO ₂
Manufacturers Code	VIB20000
CAS Number	7758-19-2
UN Number	N/A
Recommended Use	For use in producing ClO ₂ solutions for the purposes of antimicrobial sanitisation on food products and water
Restrictions on Use	None known. Not recommended for any use other than described on label

Contact Details of Chemical Manufacturer

Company	Grayson Australia (Tecnica Pty Ltd) ABN 72 006 828 879
Office Address	U4 9 Newcastle Rd, Bayswater VIC Australia 3153
Postal Address	PO Box 134, Bayswater VIC Australia 3153
Telephone	+61 3 8727 6900
Facsimile	+61 3 8727 6999
Email	info@graysonaustralia.com
Website	www.tecnica.com.au

Emergency Contacts

Do NOT contact these organisations for product information. Contact for emergency assistance only.

Immediate Medical Danger 000 (Australia) Use the emergency number for your state/country

Fire 000 (Australia) Use the emergency number for your state/country

Poisons Information Centre 13 11 26 Poison Information Centre

During business hours for non-urgent emergency or hazard details

Chemical Information +61 3 8727 6900 or info@graysonaustralia.com

GRAYSON AUSTRALIA

Tecnica Pty Ltd ABN 72 006 828 879

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Tel: 03 8727 6900 Fax: 03 8727 6999

Email: info@graysonaustralia.com



2. Hazards Identification

Global Harmonised System (GHS) Classification

GHS Classification Classified as HAZARDOUS in accordance with GHS criteria for labelling and classifying of chemicals

Signal Word DANGER

Hazard Classes Acute Toxicity- Oral: Category 4
Skin Corrosion/Irritation: Category 2
Serious Eye Damage/Irritation: Category 2a
Toxic to Reproduction: Category 1B

GHS Pictograms Exclamation Mark, Health Hazard



Dangerous Goods Class n/a

GHS Hazard Statements

H302 Harmful if swallowed
H315 Causes skin irritation
H319 Causes serious eye irritation
H360 May damage fertility or the unborn child

Non-GHS Statements (Aus)

AUH032 Contact with acid liberates very toxic gas

Precautionary Statements

Prevention statements

P101 If medical advice is needed, have product container or label at hand
P102 Keep out of reach of children
P103 Read label before use
P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P260 Do not breathe dust/fume/gas/mist/vapours/spray
P264 Wash hands thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P272 Contaminated work clothing should not be allowed out of the workplace
P273 Avoid release into the environment
P280 Wear protective gloves, clothing, eye and face protection
P281 Use personal protective equipment as required

Response Statements

- P301 **IF SWALLOWED:**
+ P312 - Call a POISON centre or doctor/physician if you feel unwell
+ P321 - Specific treatment (shown in First Aid Measure on this SDS)
+ P330 - Rinse Mouth
+ P331 - Do not induce vomiting
- P303 **IF ON SKIN (or hair):**
+ P321 - Specific treatment (shown in First Aid Measure on this SDS)
+ P332 +P313 If skin irritation occurs: Get medical advice/attention.
+ P352 - Wash with plenty of soap and water
+ P362 - Take off all contaminated clothing contaminated clothing and wash before reuse
- P304 **IF INHALED:**
+ P310 - Immediately call a POSION centre or doctor/physician
+ P321 - Specific treatment (shown in First Aid Measure on this SDS)
+ P340 - Remove person to fresh air and keep comfortable for breathing
+ P342 - If experiencing respiratory symptoms: Seek immediate medical attention
- P305 **IF IN EYES:**
+ P321 - Specific treatment (shown in First Aid Measure on this SDS)
+P337 +P313 If eye irritation persists: Get medical advice/attention
+P338 - Remove contact lenses, if present and easy to do. Continue rinsing
+P351 -Rinse cautiously with water for several minutes
- P308 **IF EXPOSED or CONCERNED:**
+P313 Get medical advice or attention
P391 - Collect Spillage
- P405 - Store locked up
- P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

Storage Statements

Disposal Statements

3. Composition/Information on Ingredients

Ingredients

Chemical Entity	Sodium Chlorite
Chemical Formula	NaClO ₂ (in aqueous solution)
Common Names	Sodium Chlorite, Chlorous Acid, sodium salt
Chemical Family	Inorganic Compound
CAS#	7758-19-2
UN#	N/A
Concentration Range	<10%
Chemical Entity	Water
Chemical Formula	H ₂ O
Common Names	Water, aqua, dihydrogen monoxide

Chemical Family Inorganic Compound
CAS# 7732-18-5
UN# n/a
Concentration Range >90%

Chemical Entity Sodium Chloride
Chemical Formula NaCl
Common Names Sodium salt, table salt
Chemical Family Inorganic Salt
CAS# 7647-14-15
UN# n/a
Concentration Range <10%

Chemical Entity Sodium Sulfate
Chemical Formula Na₂SO₄
Common Names Glauber's Salt, Sal mirabillis, Mirabilite, disodium sulfate
Chemical Family Inorganic Salt
CAS# 7757-82-6
UN# n/a
Concentration Range Trace only

Chemical Entity Chlorine Dioxide
Chemical Formula ClO₂
Common Names Chlorine oxide
Chemical Family Inorganic Compound
CAS# 10049-04-4
UN# n/a
Concentration Range Trace only

4. First Aid Measures

Generic Advice

Seek medical attention or advise from Poison Information centre, a doctor or physician if exposure has occurred. If any abnormal symptoms are noticed while being exposed or previously exposed to chemical, seek medical advice. If a victim feels unwell, it is necessary to immediately seek medical attention. It is NOT normal to become unwell or experience any symptoms through normal use; if any symptom occurs while using this product treat immediately and appropriately while seeking advice from medical professional or Poison Information Centre.

If Swallowed

Do NOT induce vomiting. If the victim is conscious- rinse mouth of victim liberally. Give a glass of water. If the victim is unconscious or having seizures do not give anything into their mouth. Seek medical attention.

If on Skin and/or Hair

Flush exposed site with water immediately. Do not stop washing for a minimum of 15 min. Do not stop earlier unless directed by the Poisons Information Centre or a doctor. Soap may be used to help remove insoluble

material. Contaminated clothing should be removed and washed before leaving the site or being re-worn. Seek medical advice.

If Inhaled

Move person away from away from the chemical into fresh air. If normal breath does not quickly return seek immediate medical attention. If breathing stops provide artificial respiration. A qualified medical professional may provide oxygen through a face mask. Do not re-enter exposure zone to avoid additional victims until the area is assured to be safe. Ensure clothing and other areas of the victims body have not been contaminated. Apply appropriate first aid as outlined in this section if additional exposures have occurred.

If in Eyes

Flush open eyes with running water for at least 15 min. Do not stop earlier unless directed by the Poisons Information Centre or a doctor. Immediate medical attention is necessary.

Important Symptoms of Exposure

Solutions of Sodium Chlorite are highly basic and cause burns and irritation to all parts of the body when exposed. Product is very corrosive.

Acute

Corrosion and burns to digestive tract, skin, respiratory system and eyes. Inflammation, swelling and scarring can be found at site of exposure. Voice can become hoarse and cause coughing if inhaled. Can cause lesions of respiratory and digestive system and pulmonary oedema.

Delayed

Long term exposure has been shown to cause inflammation of digestive lining dermatitis, chronic bronchitis and photosensitivity. Lesions of respiratory and digestive system can occur. Exposures possibly affect reproductive health.

5. Fire-Fighting Measures

Extinguishing Media

Suitable

Substance is not flammable. Use any extinguisher adequate for surrounding fire and compatible with chemicals in vicinity. Dried solution on clothing can result in fire hazard from oxidation.

Non-suitable

None known.

Hazards from material

Solution is not flammable. Dried powders of solution can combust with high temperatures or contact with flammable materials Containers may decompose from heat expose leading to release highly corrosive liquid. May increase the combustion of other materials even when in solution. Toxic fumes may evolve under fire conditions.

Flash Point

Non-combustible

Special Equipment

Fire fighters should wear a self contained breathing apparatus to avoid breathing vapours. Protective clothing capable of withstanding corrosive agents should be worn.

Special Precautions Material is highly corrosive. High temperatures and metal contact with chemical can result noxious gases. May increase fire strength. Fire fighting water will dilute chemical but will likely remain basic. Use caution with run-off and avoid spillage into waterways or drains.

Hazchem Code N/A

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Non-Emergency Personnel Only fully trained and equipped personnel should attempt to contain or clean a spill. In the event of large spills, untrained or ill equipped persons should evacuate. Small spills may be contained and controlled by non professionals IF they are wearing all protective clothing and follow clean up instructions. PPE must meet or exceed specifications set by Australian Standards. If release of chemical occurs ground will become slippery; take care near spills. Suitable protective equipment should be worn including a vapour respirator suited for ClO₂ gas, face shield, heavy duty nitrile gloves, chemical rated coveralls and shoes. Ensure ventilation is adequate. If unsure about how to manage a small spill, immediately contact a chemical spill expert. Explosions possible if mixed with acids.

Emergency Responders Use suitable protection while responding to release event. All PPE should meet or exceed Australian Standards. All release management strategies should be implemented. If uncontained from site, affected parties should be notified. Contact with acid liberates explosive gas.

PPE required (minimum)

Eyes- Face Shield

Gloves- Use Heavy duty nitrile

Respiratory Protection- Acid Gas rated respirator suitable for ClO₂

Suit- Various are suitable, ensure manufacturer is rated for strong bases

Footwear- Corrosion proof footwear or bootie is required

Chlorine Dioxide gas monitor (if neutralising or mixed with acids)

Environmental Precautions

Precautions Do not allow the product to enter waterways, drains, sewers or to be released uncontained into the environment. If this occurs contact the EPA and the local waste & water authorities to report the release.

Effect of release Product will alkalise water bodies and streams. Will cause damage to life that is exposed to solution unless significantly diluted. Toxic to aquatic life.

Methods and Materials for Containment and Cleaning Up

Containment Material leak should be contained in a bunded area. Drains and other exit points should be covered until material is neutralised and diluted. If it is safe to do so, the leak source should be repaired to prevent further leaks/spills. Uncontrolled acid contact will evolve ClO₂- flammable and explosive.

Dilution After containment, solutions should be flushed with water to dilute solution. Do not allow chlorite solution to dry. For large spills do not neutralise

spill after this step and proceed to material removal steps.

Neutralisation	Chlorite should ONLY be neutralised if there is a small spill using either sodium sulphite/bi-sulphite or a suitable, commercially available base neutraliser. Neutralisation can be confirmed by testing spill pH is at least 7. Neutraliser should be applied from outside to the centre of the spill, mix well. Neutralising large spills can result in toxic, flammable gas.
Material Removal	Using an absorbent such as sand, dry earth or non-flammable commercial absorbent materials the majority of the material should be collected and stored in an appropriate container. The material should be disposed in at a chemical waste handling facility.
Clean up	For very small leaks or after the majority of chemical material has been neutralised and removed, the chemical can be cleaned off using water. Ensure waste water does not have a pH above 8 (neutralise as above if this occurs). Water will readily dilute alkali. Observe all environmental requirements.

7. Handling and Storage

Precautions for Safe Handling

PPE required when interacting with chemical includes glasses/face shield, chemical resistant, durable clothing that covers all skin, nitrile gloves and durable shoes. Chemical should only be used in a bunded area with care to avoid spills. Chemical should not be mixed with any other material other than those specified on label or by instruction of Grayson Australia. Appropriate equipment only to be used when moving chemical.

General Warnings

Eating, drinking and smoking within work areas or in the vicinity of this chemical is prohibited. Wash hands after use. Any contaminated clothing and protective equipment should be removed prior to entering eating areas.

Conditions for Safe Storage, including any incompatibilities

Material should be kept inside the provided container, with the lid firmly shut until point of use. Material is incompatible with many chemicals including acids and should not be stored nearby. Chemical should be in a bunded area. Keep chemical in a dry, cool place suitable for chemical storage.

8. Exposure Controls and Personal Protection

Control Parameters

No exposure standards have been listed by Safe Work Australia. The most likely decomposition product which poses a threat (chlorine dioxide) has been used here as a guide.

Exposure Limits

Australia:

TWA 0.1 ppm (0.28 mg/m³)- Safe Work Australia

STEL 0.3 ppm (0.83 mg/m³)- Safe Work Australia

Other:

TWA 0.1 ppm (0.28 mg/m³) - OSHAB

STEL 0.3 ppm (0.83 mg/m³) - OSHAB

Exposures should be as low as possible.

Biological Limits No data found

Engineering Controls

Use only in a well ventilated area; if possible use local exhaust ventilation. Maintain air concentration below the occupational standards using engineering controls if necessary. Use suitable dosing equipment such as the systems provided by Grayson Australia. Minimise operator contact where possible.

Individual Protection Measures, such as Personal Protective Equipment (PPE)

General	All PPE should meet or exceed Australian Standards requirements. PPE required depends on level of interaction, PPE appropriate to emergency situations will be different to adjusting dosing equipment. Risk assessments should be undertaken to evaluate the hazard level for chemical interactions and apply policies enforcing suitable PPE for the individual situation.
Eye and face	Wear a face shield when interacting with the product to prevent splashing into eyes or face.
Respiratory	If air is well ventilated, and chemical is contained a respirator is not necessary unless approaching exposure limits. In the event of spills, fires or significant interaction a suitable acid gas respirator should be used.
Hands	Heavy duty nitrile gloves should be worn when interacting with chemical.
Clothing	Chemically impervious apron or base proof coveralls should be used when interacting with chemical. Normal clothing will not provide adequate protection as chemical will burn skin upon contact.

9. Physical and Chemical Properties

Appearance

Clear to pale yellow solution

Odour

Faint sweet chlorine smell

Odour Threshold

<0.1 mg/m³

pH

>12

Melting/Freezing Point

-9 C°

Initial Boiling Point and Boiling Range

106 C°

Flash Point

N/A

Evaporation Rate

Comparable to water

Flammability

Not flammable

Upper/Lower Flammability or Explosive Limits

N/A

Vapour Pressure

Not Available

Vapour Density

Not Available

Solubility

Extremely soluble in water

Partition Coefficient: n-octanol/water

Not available

Auto-ignition Temperature

N/A

Decomposition Temperature

180 C° -200 C° based on dried powder

Viscosity

Not available

Release of Invisible Flammable Vapours and Gases

Release chlorine dioxide upon contact with acids

10. Stability and Reactivity

Reactivity

Chemical is highly corrosive and a strong alkali. Under ambient conditions & contained in supplied container the chemical should not react unless foreign material is added to container. Powder from dried solution is a strong oxidiser and is highly reactive.

Chemical Stability

Chemical is stable under normal ambient conditions.

Possibility of Hazardous Reactions

Excessive temperatures may vaporise to gas and increase container pressure. This may result in uncontrolled vapour escaping with release of corrosive substance. If uncontrolled release occurs with acids, hazardous levels of chlorine dioxide may occur.

Conditions to Avoid

High temperatures should be avoided.

Incompatible Materials

Chemical releases chlorine dioxide upon acid contact. Should not be mixed with organic chemicals, oxidisers, soaps, surfactants, sulfur or any material of unknown composition. Hypochlorites are also incompatible.

Hazardous Decomposition Products

Decomposition releases toxic and flammable fumes. Decomposition can occur rapidly if mixed with incompatible materials. Chlorine dioxide, chlorine and vaporised sodium chlorite may evolve under extreme conditions.

11. Toxicological Information

Acute Toxicity

Oral: LD50 165 to 1800 mg/kg (Rat)
Dermal: LD50 >2 g/kg skin (Rabbit)
Inhalation LC50 0.29 mg/L (4-hr Rat)

Skin Corrosion/Irritation

Corrosive and Irritant to skin. Permanent effects may result

Serious Eye Damage/Irritation

Can cause severe burns to eyes. If severe, blindness may result.

Respiratory or Skin Sensitisation

Sensitisation of respiratory system and/or skin is possible from exposure to chemical and products of chemical decomposition.

Germ Cell Mutagenicity

Has been tested and shown in several lifeforms to have mutagenic effects in several lifeforms under specific conditions. For instance positive test result for mutations in mice when injected into body cavity but not when administered orally. Significance of these tests for humans is unclear.

Carcinogenicity

No data found

Reproductive Toxicity

Has been shown to cause birth effects in tested rats. While no systemic, neurological or reproductive developmental effects were observed there was a reduction of body weight gains as well as hematological effects in some of the treated groups.

Specific Target Organ Toxicity (STOT)- Single Exposure

No data found

Specific Target Organ Toxicity (STOT)- Repeated Exposure

No data found

Aspiration Hazard

No data found

12. Ecological Information

Toxicity

Data:
LC50 Rainbow Trout 290 mg/L (96 h exposure)
LC50 Bluegill 265 - 310 mg/L (96 h exposure)
LD50 Mallard Duck 0.49 - 1 g/kg (Gavage)

Persistence and Biodegradability

Although not biodegradable, persistence is unlikely as it will readily become dilute upon contact with water and neutralise to form sodium salts. Natural acidic minerals/materials will form chlorine dioxide.

Bio accumulative Potential

Not recognised to bioaccumulate.

Mobility in Soil

Is mobile in soils (liquid). However will quickly diminish in strength due to neutralisation.

Other Adverse Effects

No other effects to ecosystems known.

13. Disposal Considerations

Disposal Containers and Methods

Container should be disposed of at a specialised chemical waste handling facility.

Physical/Chemical Properties that may Affect Disposal Options

Material is highly corrosive and may react with other disposed chemicals inc metals, acids, oxidisers, peroxides, carbonates and chlorinated substances.

Effect of Sewage Disposal

Do not add directly to waste water/sewage supplies. Alaklises aqueous solutions and may result in escape of chemical into environment.

Special Precautions for Incineration or Landfill

This product is suitable for landfill through an approved handler of chemical wastes. Incineration is not recommended as it is relatively stable and may form noxious gases. Always contact local authorities to ensure disposal meets local, state and national regulations.

14. Transport Information

UN number

N/A

Proper Shipping or Technical Name

Chlorite Solution

Transport Hazard Class

N/A

Packing Group

N/A

Environmental Hazards for Transport Purposes

Hazardous to environment if release occurs. Follow release instructions in SDS and seek professional chemical response advice for action.

Special Precautions for User

None known.

Additional Information

Transport only in provided containers

Hazchem or Emergency Action Code

N/A

15. Regulatory Information

Poisons Schedule Number

5

AICS

Listed

16. Other Information

Abbreviations Used

H ₂	-Hydrogen (flammable/explosive gas)
ClO ₂	-Chlorine Dioxide
NaCl	- Sodium Chloride
NaClO ₂	- Sodium Chlorite
Na ₂ SO ₄	- Sodium Sulphate
LC50	-Lethal concentration results in 50% tested population lethality
LD50	-Lethal dose which results in 50% tested population lethality

OSHAB -Occupational Safety and Health Appeals Board
PPE -Personal protective equipment
SDS -Safety data sheet
STEL -Short term exposure limit
STOT -Specific target organ toxicity
TWA -Time weighted average

Revision History and Changes Made

Date of last preparation 06/02/2018
Revision Number 4
Reason for revision -Corrected DG information

Previous revisions 3