Section 1: Identification of the Material and Supplier

Product Name: **Bleach**

Other Names: Dilute sodium hypochlorite solution.

Proper shipping name (ADG Code): None assigned.

Recommended use: As a bleach.
Dilute and use as directed on the product label.

Supplier: **Hunters Products (TAS) Pty. Ltd.,**
A.C.N. 004 601 263

HEAD OFFICE	**HOBART OFFICE**	**BURNIE OFFICE**
60 Gleadow Street,	105 Albert Road,	22 Pearl Street,
INVERMAY TAS 7248	MOONAH TAS 7009	WIVENHOE TAS 7320
Tel: 03 6331 4755	Tel: 03 6228 7955	Tel: 03 6431 9627
Fax: 03 6334 1065	Fax: 03 6228 7988	Fax: 03 6432 2083

Emergency Phone Numbers:

Transport/Fire Emergency:	**000**	(Emergency services)
Medical Emergency:	**131126**	(Poisons Information Centre)

Section 2: Hazards Identification

Classified as hazardous according to criteria of Worksafe Australia.

Non-dangerous goods.

Risk Phrases:	R: 31	Contact with acids liberates toxic gas.
	R: 36/38	Irritating to skin and eyes.
Safety Phrases:	S: 1/2	Keep locked up and out of the reach of children.
	S: 28	After contact with skin, wash immediately with plenty of water.
	S: 45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
	S: 50	Do not mix with other chemicals.

Section 3: Composition/Information on Ingredients

Ingredients:

Sodium hypochlorite	[7681-52-9]	< 10 %
Other ingredients deemed not to be hazardous		< 10 %
Water	[7732-18-5]	to 100 %
Available chlorine	[7782-50-5]	5 %

Section 4: First Aid Measures

For advice, contact a Poisons Information Centre (Phone 131126) or a doctor.

Swallowed: If swallowed, do NOT induce vomiting.

Skin: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Eyes: If in eyes wash out immediately with water.

Inhaled: Remove from exposure, rest and keep warm. Seek medical advice.

First Aid facilities:
Recommended: Eye wash. Hand wash basin.

Advice to Doctor:
Product is a dilute aqueous solution of sodium hypochlorite, with up to 5 % available chlorine. Irritating to skin and eyes.
If swallowed, vomiting should not have been induced because of the risk of re-exposing the oesophagus to sodium hypochlorite. The solution is slightly alkaline. Contact Poisons Information Centre.

Aggravated medical conditions:
Persons with a compromised respiratory system may be more susceptible to the effects of this material.

Section 5: Fire Fighting Measures

HAZCHEM Code: None assigned.

Evacuate: No.

Extinguishant: Water.

Risk of violent reaction or explosion: No.

Products of combustion: Water vapour, chlorine.

Protective Equipment: Breathing apparatus and protective gloves for fire only.

Section 6: Accidental Release Measures

Emergency Procedures:
Contain.
Increase ventilation.

For large spills:
Contain spillages with sand or earth. Transfer both liquid and solids to suitable container(s). Treat residues as for small spills.

For small spills:
If local regulations permit, mop up with plenty of water and run to waste, diluting greatly with running water. Otherwise, absorb on inert absorbent and transfer to suitable closed container. Wash site of spillage thoroughly with water and detergent. Ventilate area to dispel any residual vapours.

Section 7: Handling and Storage

Precautions for safe handling:
Avoid contact with skin and eyes.
Avoid breathing concentrated vapours.

Conditions for safe storage:
Store in a cool, well ventilated place, out of reach of children. Large quantities should be stored in a bunded area. Store in original container. Keep container tightly closed and out of direct sunlight. Store in vented containers where possible. Prevent vapours from collecting in enclosed or low lying spaces. Keep away from acids, metals, oxidising agents and other chlorinating compounds. Protect from physical damage. Clean up all spills and splashes promptly; avoid secondary accidents.

Incompatibles:
Acids, reducing agents, other types of chlorinating compounds, combustible materials, metals and their salts, hydrogen peroxide.

Section 8: Exposure Controls/Personal Protection

National Exposure Standards:

ES-TWA:	Chlorine	1 ppm, 3 mg/m³
ES-STEL:	None assigned.	
ES-PEAK:	Chlorine	1 ppm, 3 mg/m³
Notations:	None.	

[Peak] indicates a ceiling concentration which should not be exceeded, even momentarily.

Biological Limit Values: No data found.

Engineering Controls:

Avoid using wood or wood products as materials of construction. Ensure adequate ventilation (same as outdoors) when using. If handling industrial quantities, or if vapour risk exists, consider local mechanical exhaust/extraction to keep airborne contamination as low as possible and at least below the TLV.

Personal Protective Equipment:

Avoid contact with skin and eyes. Avoid breathing concentrated vapours. Personal protection to be selected from those recommended below, as appropriate to mode of use, quantity handled and degree of hazard:-

Normal Use:

Eye/face protection
Gloves, rubber or plastic.

Industrial Quantities:

Face shield or safety glasses
Gloves, rubber or plastic
Plastic apron, sleeves and boots
Impervious overalls.

Section 9: Physical and Chemical Properties

Appearance:	Clear, colourless liquid.
Odour:	Mild odour of chlorine bleach.
Odour Threshold:	Chlorine: 0.3 ppm.
pH:	7.9 Slightly alkaline.
Vapour Pressure:	No data.
Vapour Density:	No data.
Boiling Point:	100 °C
Melting Point:	No data.
Volatiles:	5 % as available chlorine.
Volatile Organic Compounds (VOC):	Nil.
Evaporation Rate:	No data.
Solubilities:	Miscible with water in all proportions.
Specific Gravity/Density:	1.1 g/mL @ 20 °C
Flash Point:	None.
Flammable Limits:	None.
Dust Explosion:	Not applicable.
Auto-ignition Temperature:	No data.

Other Information:

Dilute solution of sodium hypochlorite. Contact with acids will generate chlorine, a toxic gas. May react vigorously with reducing agents, other types of chlorinating compounds. May attack wood and wood products. Decomposes slowly on storage, or faster on exposure to direct sunlight, evolving oxygen; open cautiously, containers may be under pressure. May be decomposed by contamination of any sort. May react with metal salts, hydrogen peroxide. May be slightly corrosive to many metals. May be slippery when spilled.

Section 10: Stability and Reactivity

Chemical Stability: May decompose slowly in long storage, evolving oxygen.

Conditions to Avoid: Incompatible materials, sunlight, contamination of any sort.

Incompatible Materials: Acids, reducing agents, oxidising agents, other types of chlorinating compounds, metals, wood and wood products.

Hazardous Decomposition Products: Chlorine.

Hazardous Reactions: Contact with acids will generate chlorine gas. Prolonged contact with readily combustible materials may cause fire.

Section 11: Toxicological Information

Health Effects:
No data available for the mixture. Information presented relates to individual ingredients.

Acute:

Swallowed: May be irritating when swallowed. Likely to cause gastric upset, a burning sensation, possible damage to the oesophagus and mucous membranes, nausea, vomiting and diarrhoea. May cause a lowering of blood pressure and muscle weakness.

Skin: Mildly irritating to the skin. May cause redness and pain. May cause blisters and burns on prolonged contact.

Eyes: Irritating to eyes. May cause redness, pain and burns.

Inhaled: Irritating to the respiratory system. May cause coughing, a burning sensation in the chest, shortness of breath. May cause a swelling and obstruction of the airways. Onset of symptoms may be delayed for several hours.

Chronic: Chronic exposure to sodium hypochlorite may cause methaemoglobinemia, characterised by chocolate-brown coloured blood, headache, dizziness, weakness, shortness of breath, cyanosis, rapid heart rate, loss of consciousness.

Sodium hypochlorite is classified by IARC (1991) as group 3; unclassifiable as to carcinogenicity to humans (on inadequate animal data, no human data). **(1)**

LD_{50}: Sodium hypochlorite 5,800 mg/kg oral, mouse.

TDLo: Sodium hypochlorite 1,000 mg/kg oral, woman - general depressed activity, lowered blood pressure.

Section 12: Ecological Information

Ecotoxicity: Sodium hypochlorite is harmful to aquatic organisms.

LC_{50}: 0.07 mg/L (48 hours) - Fish *(rainbow trout)*.
5.9 mg/L (48 hours) - Fish *(flathead minnow)*.

Persistence and degradability: Readily decomposed on exposure to organic matter.

Mobility: Readily transported by water.

Environmental Fate: No data.

Bioaccumulative potential: No data.

Other adverse environmental effects: No data.

Section 13: Disposal Considerations

The generator of any wastes from this product is responsible for its proper classification, transport and disposal.

Consult appropriate local and State regulations.

Disposal methods and containers:
Avoid disposal to natural waters.
Avoid using un-lined metal containers.

Special precautions for landfill or incineration:
Unsuitable for incineration.
May be unsuitable for landfill sites.

Section 14: Transport Information

UN Number: None assigned.

UN Proper shipping name: None assigned.

Class and subsidiary risk: None assigned.

Packaging group: None assigned.

Special precautions for user: Contain spillages.

HAZCHEM Code: None assigned.

Material for export: Not regulated.

Section 15: Regulatory Information

Poisons (SUSDP): Not a scheduled poison.

Dangerous Goods: No.

Carcinogen:	**Australia**	**IARC**	**NTP**	**RTECS**
	No.	**(1)**	No.	No.

Agricultural and Veterinary Chemicals Act: Not applicable.

Australian Inventory of Chemical Substances (AICS): Listed.

Other National/International Regulations: No data.

Section 16: Other information

Date of MSDS update: August 2007
Complete review and re-write of all sections.

Abbreviations:
NOHSC - National Occupational Health and Safety Commission.
ACGIH - American Conference of Governmental Industrial Hygienists.
MAK - Maximum workplace concentration - Germany, (*maximale Arbeitsplatzkonzentration*)
IARC - International Agency for Research on Cancer (France).
NPT - National Toxicology Program (USA).
RTECS - Registry of Toxic Effects of Chemical Substances.

Literature references:
(1) *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. (WHO Publications Centre USA, 49 Sheridan Ave., Albany, NY 12210). v.52, p.159, 1991.*

Other Available Sources of Data:
National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [2011(2003)] - NOHSC.
Australian Dangerous Goods Code.
Standard for the Uniform Scheduling of Drugs and Poisons - AHMAC.
Exposure Standards for Atmospheric Contaminants in the Occupational Environment [1003]- NOHSC.
List of Designated Hazardous Substances [10005] - NOHSC.
Merck Index - Merck Inc.
Sax's Dangerous Properties of Industrial Materials - Lewis.
Handbook of Toxic and Hazardous Chemicals and Carcinogens - Sittig.
Handbook of Reactive Chemical Hazards - Bretherick.
Hawley's Condensed Chemical Dictionary - Wiley Interscience.
AUSREG's Chemical Data Package for PCs - AUSREG Consultancy.