STABILISED CHLORINE GRANULES - FOR SPA POOLS

(ChemWatch name: SODIUM DICHLOROISOCYANURATE)

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

STABILISED CHLORINE GRANULES - FOR SPA POOLS

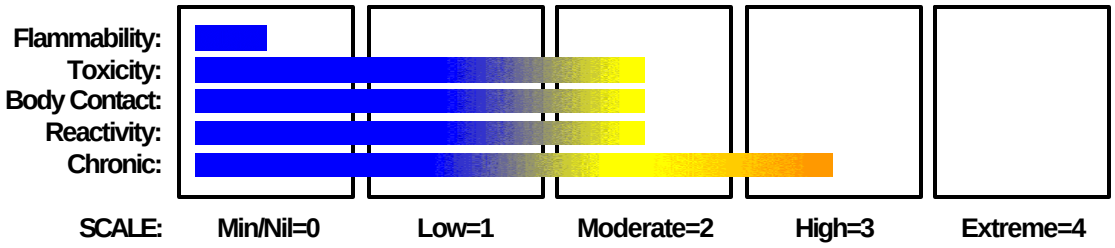
STATEMENT OF HAZARDOUS NATURE

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.

SUPPLIER

Company: Andrew Brands Limited
Address:
3 Porana Road
Glenfield
AUCKLAND
Telephone: 09 444 3733
Telephone: 0800 802 626
Emergency Tel: 0800 243 622
Fax: 09 444 3838

HAZARD RATINGS



PRODUCT USE

Active ingredient in dry bleaches, dishwashing compounds, scouring powders, detergent sanitisers, swimming pool disinfectants, water and sewage treatment, replacement for calcium hypochlorite. Also used as an anti-felting treatment for wool and a textile printing pretreatment.

SYNONYMS

C3-H-Cl2-N3-O3-Na C3-H-Cl2-N3-O3.2H20.Na

continued...

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ...

dichlorocyanuric acid, sodium salt
sodium dichlorocyanurate
dichloroisocyanurate sodium salt
dichloro isocyanurate sodium salt
sodium salt of dichloro-s-triazinetrione

Haztab Haz-Tabs Sodium Troclosene
Dihydrate
ACL 60
CDB 63
Dimanin C
OCI 56
pool chlorine

sodium dichloro isocyanurate
microbiocide
sodium dichlorisocyanurate
1-sodium-3,5-dichloro-1,3,5-triazine-2,4,6-trione
s-triazine-2,4,6 (1H,3H,5H) -trione, dichloro-, sodium salt
sodium dichloro-s-triazinetrione, dry, containing >39% available chlorine
Simpla
Dikonit
FI Clor 60S
SDIC

Section 2 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sodium dichloroisocyanurate	2893-78-9	>95
In presence of moisture/water evolves chlorine	7782-50-5	^

Section 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HAZARD

5.1.1B	Oxidising substance: medium hazard
6.1D	Harmful if swallowed
6.3A	Irritating to skin.
6.4A	Irritating to eyes.
6.8A	May cause harm to the unborn child.

continued...

Section 3 - HAZARDS IDENTIFICATION ...

9.1A Very ecotoxic in the aquatic environment

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.
Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

SKIN

Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period.
Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis.
At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.
Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

INHALED

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system in a substantial number of individuals following inhalation.
Although inhalation is not thought to produce harmful effects (as classified under EC Directives), the material may still produce health damage, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally confined to doses producing mortality rather than those producing morbidity (disease, ill-health).

CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by inhalation of generated dust , skin contact with the dry and wet material and inhalation of vapour given off by

continued...

Section 3 - HAZARDS IDENTIFICATION ...

material that has become wet or damp
Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).
Experimental studies on laboratory animals indicate possible teratogenic and other reproductive effects. [BASF]

Section 4 - FIRST AID MEASURES

SWALLOWED

Rinse mouth out with plenty of water.
If poisoning occurs, contact a doctor or Poisons Information Centre.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconsciousness
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

EYE

If this product comes in contact with the eyes:
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

Brush off dust.
If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear breathing passages.
- Ask patient to rinse mouth with water but to not drink water.
- Seek immediate medical attention.

or

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed,

continued...

Section 4 - FIRST AID MEASURES ...

where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN
Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Water spray or fog - Flooding quantities only.
Foam.
BCF (where regulations permit).
Dry chemical Powder.
Carbon Dioxide.

FIRE FIGHTING
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- Extinguishers should be used only by trained personnel.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- If fire gets out of control withdraw personnel and warn against entry.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD
- Will not burn but increases intensity of fire.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- Heat affected containers remain hazardous.
- Contact with combustibles such as wood, paper, oil or finely divided metal may produce spontaneous combustion or violent decomposition.
- May emit irritating, poisonous or corrosive fumes.
Decomposition may produce toxic fumes of chlorine and phosgene

FIRE INCOMPATIBILITY
Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous

continued...

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Clean up all spills immediately.
- No smoking, naked lights, ignition sources.
- Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result.
- Avoid breathing dust or vapours and all contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with dry sand, earth, inert material or vermiculite.
- DO NOT use sawdust as fire may result.
- Scoop up solid residues and seal in labelled drums for disposal.
- Neutralise/decontaminate area.

MAJOR SPILLS

DO NOT delay. Restrict access to area. DO NOT touch the spill material

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, flames or ignition sources.
- Increase ventilation.
- Contain spill with sand, earth or other clean, inert materials.
- NEVER use organic absorbents such as sawdust, paper, cloth; as fire may result.
- Avoid any contamination by organic matter.
- Use spark-free and explosion-proof equipment.
- Collect any recoverable product into labelled containers for possible recycling.
- DO NOT mix fresh with recovered material.
- Collect residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- Decontaminate equipment and launder all protective clothing before storage and re-use.
- If contamination of drains or waterways occurs advise emergency services.

DO NOT use unlined steel containers

PROTECTIVE ACTIONS FOR SPILL

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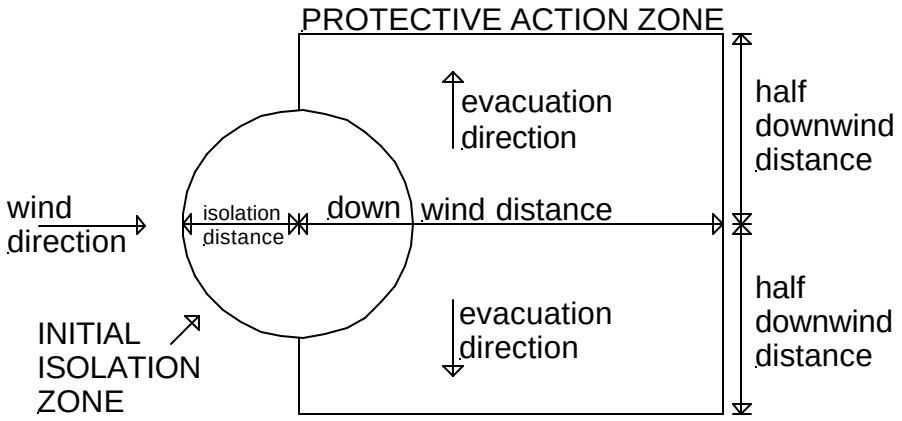
Section 6 - ACCIDENTAL RELEASE MEASURES ...



From IERG (Canada/Australia)

Isolation Distance	25 metres
Downwind Protection Distance	100 metres

FOOTNOTES

1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.
2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.
3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.
4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".
LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.
5 Guide 140 is taken from the US DOT emergency response guide book.
6 IERG information is derived from CANUTEC - Transport Canada.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Avoid generating and breathing dust.

continued...

Section 7 - HANDLING AND STORAGE ...

- Avoid personal contact and inhalation of dust, mist or vapours.
- Provide adequate ventilation.
- Always wear protective equipment and wash off any spillage from clothing.
- Keep material away from light, heat, flammables or combustibles.
- Keep cool, dry and away from incompatible materials.
- Avoid physical damage to containers.
- DO NOT repack or return unused portions to original containers. Withdraw only sufficient amounts for immediate use.
- Contamination can lead to decomposition leading to possible intense heat and fire.
- When handling NEVER smoke, eat or drink.
- Always wash hands with soap and water after handling.
- Use only good occupational work practice.
- Observe manufacturer's storing and handling directions.

SUITABLE CONTAINER

Glass container or Plastic container
- Lined metal can, Lined metal pail/ can
- Plastic pail
- Polyliner drum
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

DO NOT use aluminium, galvanised or tin-plated containers

STORAGE INCOMPATIBILITY

Keep dry . Avoid mixing with organic materials / compounds , particularly finely divided combustible materials as ignition may result
Contact with acids produces toxic fumes , i.e. chlorine

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed as supplied.
- Store in a cool, well ventilated area.
- Keep dry.
- Store under cover and away from sunlight.
- Store away from flammable or combustible materials, debris and waste. Contact may cause fire or violent reaction.
- Store away from incompatible materials and foodstuff containers.
- DO NOT stack on wooden floors or pallets.
- Protect containers from physical damage.
- Check regularly for leaks.
- Observe manufacturer's storage and handling recommendations

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

REL: 0.5 mg/m^3; STEL: 1.5 mg/m^3 [Manfr.]
Evolves chlorine in presence of moisture/water.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

chlorine:
TLV TWA: 0.5 ppm, 1.5 mg/m³; STEL: 1 ppm, 2.9 mg/m³
ES Peak: 1 ppm, 3 mg/m³

ODOUR SAFETY FACTOR (OSF)
OSF=1.6 (CHLORINE)
Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.
Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.
The Odour Safety Factor (OSF) is defined as:
OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm
Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

PERSONAL PROTECTION




EYE
- Safety glasses with side shields
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all

continued...

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

lenses concentrate them.

HANDS/FEET

Wear chemical protective gloves, eg. PVC.
Wear safety footwear.
DO NOT handle directly. Wear gloves and use scoop / tongs / tools
Neoprene gloves
Nitrile rubber gloves

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

ENGINEERING CONTROLS

Use in a well-ventilated area
General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

continued...

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.
Mixes with water.
Contact with acids liberates toxic gas.

Molecular Weight: 220.95 (anhyd.)	Boiling Range (°C): Not applicable.
Melting Range (°C): 240-250 (decomp)	Specific Gravity (water=1): 0.91-1.00
Solubility in water (g/L): Miscible	pH (as supplied): Not applicable
pH (1% solution): 5.8-7.0 @ 1%	Vapour Pressure (kPa): Not available.
Volatile Component (%vol): Nil @ 38 C.	Evaporation Rate: Non Volatile
Relative Vapour Density (air=1): Not available.	Flash Point (°C): Not applicable
Lower Explosive Limit (%): Not applicable	Upper Explosive Limit (%): Not applicable
Autoignition Temp (°C): Not available	Decomposition Temp (°C):
State: Divided solid	

APPEARANCE

White, slightly hygroscopic crystalline powder. Slight chlorine odour.
Strong oxidising material. Soluble in water and decomposes to Chlorine gas, hypochlorous acid and cyanuric acid.
Anhydrous form contains 64.5% available chlorine CAS 2893-78-9.
Loose bulk density about 0.6 g/cc; granulated 0.91 g/cc.
Note: Commercial grades are usually the dihydrate form which contains 56%

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES ...

available chlorine [CAS 51580-86-0]. Its transport is not regulated under the provision of SP139 of the Aust. DG Code.

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable under normal handling conditions.
- Prolonged exposure to heat.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

Stabilised Chlorine Granules - for Spa Pools

TOXICITY
Oral (human) LDLo: 3570 mg/kg
Oral (rat) LD50: 700 mg/kg [Manufacturer] Skin (rabbit): 500 mg - SEVERE
Oral (rat) LD50: 1823 mg/kg (as dihydrate)
Dermal (rabbit) LD50: 6000 mg/kg
Dermal (rabbit) LD50: 3160-5100 mg/kg (as dihydrate)
Evolves chlorine in presence of moisture/water.

IRRITATION
Skin (rabbit): 500 mg/24h - mild

Eye (rabbit): 10 mg/24hr-moderate

chlorine:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

TOXICITY
Inhalation (human) LCLo: 2530 mg/m3/30 minutes
Inhalation (human) LCLo: 500 ppm/5 minutes
Inhalation (rat) LC50: 293 ppm/1 hour

IRRITATION

Section 12 - ECOLOGICAL INFORMATION

If introduced in concentrations not exceeding 10 mg/L, the decomposing activity of the activated sludge in an operating water treatment plant should not be affected.
Fish Toxicity: LC50 <1mg/L/48Hr (Rainbow Trout) [BASF]

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible. Special hazard may exist - specialist advice may be

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Section 13 - DISPOSAL CONSIDERATIONS ...

required.
- Consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Treat and neutralise residue at an approved site.
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
- Puncture containers to prevent re-use and bury at an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

Shipping Name: DICHLOROISOCYANURIC ACID, DRY OR SALTS
Hazard Class: 5.1
UN/NA Number: 2465
ADR Number: 50
Packing Group: II
Labels Required: oxidizing agent
Additional Shipping Information:
International Transport Regulations:
IMO: 5.1

Section 15 - REGULATORY INFORMATION

SAFETY

Keep away from combustible material.
Avoid exposure - obtain special instructions before use.
To clean the floor and all objects contaminated by this material, use water.
Keep away from food, drink and animal feeding stuffs.
Take off immediately all contaminated clothing.
In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label).
If you feel unwell contact Doctor or Poisons Information Centre (show the label if possible).

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Section 16 - OTHER INFORMATION

NEW ZEALAND POISONS INFORMATION CENTRE
0800 POISON (0800 764 766)
NZ EMERGENCY SERVICES: 111

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