

## Section 1 – Identification of Chemical Product and Company

Code	Description	Size	Colour
	<b>Chemical Stain</b>		Coffee
<b>Recommended use:</b>		Concrete Stain	
<b>Supplier contact details:</b>		New Zealand Decorative Concrete Ltd T/A	
	42A Egmont Road,	Freephone: 0508 444 555	
	Waiwhakaiho	Phone: 06 755 3320	
	New Plymouth	Fax: N/A	
	New Zealand	Email: info@permacolour.co.nz	
		Website: www.permacolour.co.nz	
<b>POISON CENTRE NUMBER: 0800 764 766 (24 hours)</b>			

## Section 2 – Hazard Identification

### Statement of Hazardous Nature

This product is classified as:

**HAZARDOUS SUBSTANCE** according to the criteria of HSNO.

**REGULATED** under NZS5433:2007 Transport of Dangerous Goods on Land

### Hazardous Substances and New Organisms (HSNO) classification:

Classification	Hazard statements
<b>Metallic Corrosivity Category 1</b> <b>8.1A</b>	H290    May be corrosive to metals
<b>Acute Oral Toxicity Category 4</b> <b>6.1D</b>	H302    Harmful if swallowed
<b>Acute Inhalation Toxicity Category 5</b> <b>6.1E</b>	H333    May be harmful if inhaled
<b>Skin Effects Category 1B</b> <b>8.2B</b>	H314    Causes severe skin burns and eye damage
<b>Eye Effects Category 1</b> <b>8.3A</b>	H318    Causes serious eye damage
<b>Chronic Aquatic Hazard Category 3</b> <b>9.1C</b>	H412    Harmful to aquatic effects with long lasting effects
<b>Vertebrate Hazard Category 2</b> <b>9.3B</b>	H432    Toxic to terrestrial Vertebrates

HSNO Signal Word:

**DANGER**



### Precautionary Statements:

Keep out of reach of Children	P270	Do not eat, drink or smoke whilst handling this product
Do not handle until all safety precautions have been read and understood	P273	Avoid release to the environment
P260 Do not breathe mists/ vapours/ sprays	P405	Store locked up
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection	P501	Dispose of contents. Container in accordance with local regulations
P281 Use personal protective equipment as required		
P234 Keep in original packaging		

### Section 3 - Composition/Information on Ingredients

Ingredient	CAS No.	Individual HSNO classification	Concentration (% by Wt.)
Ferric chloride	7705-08-0	Metallic Corrosivity Category 1; Acute Oral Toxicity Category 4; Skin Effects Category 1C; Eye Effects Category 1; Chronic Aquatic Hazard Category 3; Vertebrate Hazard Category 2	30 - 40
Hydrochloric acid	7647-01-0	Metallic Corrosivity Category 1; Acute Oral Toxicity Category 4; Acute Dermal Toxicity Category 4; Acute Inhalation Toxicity Category 2; Skin Effects Category 1B; Eye Effects Category 1; Chronic Aquatic Hazard Category 2; Vertebrate Hazard Category 3	1 - 10
Chromic chloride	10025-73-7	Acute Oral Toxicity Category 4; Acute Dermal Toxicity Category 4; Vertebrate Hazard Category 3	1 - 10
Ingredients not contributing to classification			balance

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non-hazardous ingredients are also possible.

### Section 4 – First Aid Measures

**NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111**

**Eye contact:**

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 contact:**

Immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. Transport to hospital, or doctor.

**Inhalation:**

Remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, 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, without delay. Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. This must definitely be left to a doctor or person authorised by him/her.

**Ingestion:**

For advice, contact a Poisons Information Centre or a doctor at once. Urgent hospital treatment is likely to be needed. 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 unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Transport to hospital or doctor without delay.

**General advice and advice for physicians:**

Treat symptomatically.

## Section 5 - Fire-Fighting Measures

**Extinguishing media:**

Foam, Carbon Dioxide, Dry Powder

**Fire/ Explosion Hazard**

The product contains a substantial proportion of water, Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances. Not considered to be a significant fire risk. Acids may react with metals to produce hydrogen, a highly flammable and explosive gas. Heating may cause expansion or decomposition leading to violent rupture of containers. May emit corrosive, poisonous fumes. May emit acrid smoke.

**Advice for fire-fighters:**

Alert Fire & Emergency New Zealand and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use firefighting procedures suitable for surrounding area. 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 Equipment should be thoroughly decontaminated after use.

## Section 6 - Accidental Release Measures

**Minor Spills**

Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. Check regularly for spills and leaks. Clean up all spills immediately Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Wipe up. Place in a suitable, labelled container for waste disposal.

**Major Spills**

Clear area of personnel and move upwind. Alert Fire & Emergency New Zealand and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water course. Stop leak if safe to do so. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Neutralise/decontaminate residue (see Section 13 for specific agent). Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. After clean-up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If contamination of drains or waterways occurs, advise emergency services.

## Section 7 - Handling and Storage

**Handling:**

Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with moisture. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. DO NOT allow clothing wet with material to stay in contact with skin

**Storage:**

Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS. DO NOT use aluminium or galvanised containers Check regularly for spills and leaks 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. For low viscosity materials Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure.

## Section 8 - Exposure Controls/Personal Protection

**Exposure limits:**




CAS no.	Substance or ingredient	WES-TWA	WES-STEL
7705-08-0	Ferric Chloride	1 mg/m <sup>3</sup>	
10025-73-7	Chromic Chloride	0.5 mg/m <sup>2</sup>	

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

#### Engineering Controls:

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self-contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. 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.

#### Exposure controls:

Control	Protective measure
<b>Eye</b>	Chemical goggles. Full face shield may be required for supplementary but never for primary protection of eyes. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent] 
<b>Respiratory</b>	Type AB-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent) 
<b>Skin</b>	Butyl or Neoprene Avoid skin contact. If skin contact or contamination of clothing is likely, protective clothing should be worn. [AS 2161] Wear protective clothing. 

## Section 9 - Physical and Chemical Properties

#### General substance properties:

Property	Details
<b>Appearance</b>	Liquid
<b>Odour</b>	Characteristic
<b>pH</b>	< 1
<b>Vapour pressure</b>	No data
<b>Vapour Density</b>	> 1 heavier than air

<b>Viscosity</b>	1.004 cSt
<b>Boiling Point</b>	102 °C
<b>Volatile materials</b>	60 %
<b>Water solubility</b>	miscible
<b>Freezing/melting point</b>	0 °C
<b>Specific gravity/density</b>	1.79 g/ml
<b>Flash point</b>	No data
<b>Auto-ignition temperature</b>	No data
<b>Upper and lower flammability limits</b>	Lower %                      Upper %
<b>Corrosiveness</b>	Corrosive to metals/ skin/ eyes

## Section 10 - Stability and Reactivity

### Stability:

Stable under normal conditions.

### Conditions to avoid:

Metal containers, acids

### Incompatible materials to avoid:

Avoid oxidising agents (nitrates, oxidising acids, chlorine bleaches, pool chlorine etc) as ignition may result

### Hazardous decomposition products:

Combustion products include: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) other pyrolysis products typical of burning organic material.

## Section 11 - Toxicological Information

### Summary of Toxicity

<b>Test</b>	<b>Data and symptoms of exposure</b>
<b>Inhaled</b>	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. Hydrogen chloride (HCl) vapour or fumes present a hazard from a single acute exposure. Exposures of 1300 to 2000 ppm have been lethal to humans in a few minutes. Inhalation of HCl may cause choking, coughing, burning sensation and may cause ulceration of the nose, throat and larynx. Fluid on the lungs followed by generalised lung damage may follow. Breathing of HCl vapour may aggravate asthma and inflammatory or fibrotic pulmonary disease. High concentrations cause necrosis of the tracheal and bronchial epithelium, pulmonary oedema, atelectasis and emphysema and damage to the pulmonary blood vessels and liver. Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness. High concentrations cause inflamed airways and watery swelling of the lungs with oedema.
<b>Oral</b>	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. The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and oesophagus. Immediate pain and difficulties in swallowing and speaking may also be evident. Iron poisoning results in pain in the upper abdomen and vomiting, and is followed hours later by shock, in severe cases coma and death. Iron toxicity increases in proportion to their solubility in the gastrointestinal tract.

<b>Dermal</b>	The material can produce chemical burns following direct contact with the skin. Skin contact is not thought to produce harmful health effects (as classified under EC Directives using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions. Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
<b>Eye</b>	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. If applied to the eyes, this material causes severe eye damage. Irritation of the eyes may produce a heavy secretion of tears (lachrymation). Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns. Mild burns of the epithelia generally recover rapidly and completely.
<b>Chronic</b>	Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and/or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs. Chronic minor exposure to hydrogen chloride (HCl) vapour or fume may cause discolouration or erosion of the teeth, bleeding of the nose and gums; and ulceration of the mucous membranes of the nose. Workers exposed to hydrochloric acid suffered from stomach inflammation and a number of cases of chronic bronchitis (airway inflammation) have also been reported. Repeated or prolonged exposure to dilute solutions of hydrogen chloride may cause skin inflammation. Chronic excessive intake of iron have been associated with damage to the liver and pancreas. People with a genetic disposition to poor control over iron are at an increased risk. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Overexposure to the breathable dust may cause coughing, wheezing, difficulty in breathing and impaired lung function. Chronic symptoms may include decreased vital lung capacity and chest infections. Repeated exposures in the workplace to high levels of fine-divided dusts may produce a condition known as pneumoconiosis, which is the lodgement of any inhaled dusts in the lung, irrespective of the effect. This is particularly true when a significant number of particles less than 0.5 microns (1/50000 inch) are present. Lung shadows are seen in the X-ray. Symptoms of pneumoconiosis may include a progressive dry cough, shortness of breath on exertion, increased chest expansion, weakness and weight loss. As the disease progresses, the cough produces stringy phlegm, vital capacity decreases further, and shortness of breath becomes more severe. Other signs or symptoms include changed breath sounds, reduced oxygen uptake during exercise, emphysema and rarely, pneumothorax (air in the lung cavity). Removing workers from the possibility of further exposure to dust generally stops the progress of lung abnormalities. When there is high potential for worker exposure, examinations at regular period with emphasis on lung function should be performed. Inhaling dust over an extended number of years may cause pneumoconiosis, which is the accumulation of dusts in the lungs and the subsequent tissue reaction. This may or may not be reversible.

<b>Ingredient</b>	<b>Oral LD<sub>50</sub></b>	<b>Dermal LD<sub>50</sub></b>	<b>Inhalation LC<sub>50</sub></b>
Ferric chloride	13 mg/kg	> 861 mg/kg	
Hydrochloric acid	700 mg/kg	5010 mg/kg	780.1 mg/L/1hr
Chromic chloride	440 mg/kg	> 2000 mg/kg	0.01575 mg/L/2hr

## Section 12 - Ecological Information

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites. Ecotoxicity: The tolerance of water organisms towards pH margin and variation is diverse. Recommended pH values for test species listed in OECD guidelines are between 6.0 and almost 9. Acute testing with fish showed 96h-LC50 at about pH 3.5 Prevent, by any means available, spillage from entering drains or water courses. DO NOT discharge into sewer or waterways.

<b>Ingredient</b>	<b>Fish</b>	<b>Crustacea</b>	<b>Algae</b>
Ferric Chloride	LC <sub>50</sub> 96hr 10 mg/L NOEC 504hr 0.32 mg/L	EC <sub>50</sub> 48hr 9.6 mg/L EC <sub>84</sub> 48hr 8.8 mg/L	EC <sub>50</sub> 96hr 3423.43 mg/L
Hydrochloric acid	LC <sub>50</sub> 96hr 70.05 mg/L NOEC 504hr 10 mg/L		EC <sub>50</sub> 96hr 344.947 mg/L
Chromic chloride	LC <sub>50</sub> 96hr 0.004 mg/L	EC <sub>50</sub> 48hr 3.24 mg/L	EC <sub>50</sub> 96hr 0.397 mg/L

	NOEC <sub>504hr</sub> 0.048 mg/L	BCF <sub>0.5hr</sub> 0.0005 mg/L	
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	Persistence H <sub>2</sub> O/ Soil	Persistence Air	Bioaccumulation	Mobility
Ferric Chloride	HIGH	HIGH	HIGH	LOW
Hydrochloric acid	LOW	LOW	LOW	LOW

## Section 13 - Disposal Considerations

Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Where possible retain label warnings and SDS and observe all notices pertaining to the product. DO NOT allow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Recycle wherever possible or consult manufacturer for recycling options. Consult Land Waste Authority for disposal. Bury or incinerate residue at an approved site. Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled. The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous. Only dispose to the environment if a tolerable exposure limit has been set for the substance. Only deposit the hazardous substance into or onto a landfill or sewage facility or incinerator, where the hazardous substance can be handled and treated appropriately. Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

## Section 14 - Transport Information



HAZCHEM **2X**

### Land Transport UNDG

Class or division 8  
Subsidiary Risk None  
UN Number **3066**  
UN Packing Group II  
Shipping Name **PAINT RELATED MATERIAL, CORROSIVE**  
Special Provisions 163 367  
Limited Quantities 1 L

### Air Transport IATA

ICAO/IATA Class 8  
ICAO/IATA Subrisk None  
UN/ID Number **3066**  
Packing Group II  
Special provision A3 A72 A192 A803

### Cargo only

Packing instructions 855  
Maximum Qty/pack 30 L

### Passenger and Cargo

Packing instructions 851  
Maximum Qty/pack 1 L

### Passenger & Cargo Limited Quantity

Packing instructions Y840  
Maximum Qty/pack 0.5 L

Shipping Name **PAINT RELATED MATERIAL, CORROSIVE**

### Marine Transport IMDG

IMDG Class 8  
IMDG Subrisk None  
UN Number **3066**

UN Packing Group	II
EmS Number	F-A S-B
Special provisions	163 367
Limited quantities	1 L
Marine pollutant	No
Shipping Name	<b>PAINT RELATED MATERIAL, CORROSIVE</b>

## Section 15 - Regulatory Information

### HSNO approval number and Group Standard:

HSR002658      Surface Coatings & Colourants (Corrosive)

### Group Standard conditions and other regulations:

Condition	Requirement
<b>SDS</b>	Safety data sheet must be available to a person handling the substance within 10 minutes.
<b>Emergency plan</b>	Required when quantities exceed 1,000 Lt
<b>Certified handler</b>	Not required
<b>Tracking</b>	Not applicable
<b>Bunding and secondary containment</b>	Required
<b>Signage</b>	Required when present in quantity 100 L.
<b>Location Compliance Certificate</b>	Not required
<b>Hazardous Atmosphere zone</b>	Not applicable
<b>Fire extinguisher</b>	Not applicable

### National Inventories

Australia	AICS	Y
Canada	DSL	Y
Canada	NDSL	N
China	IECSC	Y
Europe	EINEC/ELINCS/NLP	Y
Japan	ENCS	N
Korea	KECI	Y
New Zealand	NZIOC	Y
Philippines	PICCS	Y
USA	TSCA	Y
Taiwan	TCSI	Y
Mexico	INSQ	Y
Vietnam	NCI	Y
Russia	ARIPS	Y
Thailand	TECI	Y



## Section 16 – Other Information

### Revision History

August 2019

origination

### Abbreviations:

Abbreviation	Description
CAS number	Number assigned to chemical in the Chemical Abstracts Service registry
HAZCHEM code	Code used by fire-fighters to determine correct method of action in the case of fire
HSNO	Hazardous Substances and New Organisms (Act)
ICAO Technical Instructions	International Civil Aviation Organization Technical Instructions
IMDG code	International Maritime Dangerous Goods code controlled by the International Maritime Organization (IMO)
LC <sub>50</sub>	Lethal concentration 50% - concentration fatal to 50% of the tested population
LD <sub>50</sub>	Lethal dose 50% - dose fatal to 50% of the tested population
NZS 5433	New Zealand Standard 5433 (Standard for the Transport of Dangerous Goods on Land)
SDS	Safety data sheet
STEL	Short term exposure limit
TWA	Time weighted average (typically measured as 8 hours)
UN number	United nations number
WES	Workplace exposure standard

### References

Chemical properties and HSNO classifications derived from the New Zealand chemical classification information database (CCID). [www.epa.govt.nz](http://www.epa.govt.nz).  
Workplace exposure limits derived from Workplace Exposure Standards and Biological Exposure Indices 9th Edition.

***The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material in combination with any other material or in any process, unless specified in the text.***

This SDS was prepared by Collievale Enterprises Ltd in accord with the Hazardous Substances (Safety Data Sheets) Notice 2017  
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End of MSDS