DUNEDIN CITY COUNCIL | kaunihera a-rohe o Ōtepoti

23 March 2021

[redacted]

Dear [redacted]

Local Government Official Information and Meetings Act (LGOIMA) request regarding weed killer on Hilton Road

I refer to your request dated 2 March 2021 in which you requested the date the Council contractor sprayed weed killer on the road verge on Hilton Road, off Highcliff Road and what spray was used and the safety data sheet of the spray, and I provide the following response:

Spraying Date: 15th February 2021

Performed by: This was carried by Oaten Contracting, the Dunedin City Council approved spraying subcontractor.

Reason: The area was in the routine spray round and was carried out by backpack spraying.

Chemicals Used: The routine chemical spray uses a glyphosate mix; detailed below.

- Ken-Up 500 Flexi Herbicide – Main chemical and is glyphosate based. Mix ratio used is 105ml to 15 litres water.
- Silmaxx penetrant – Penetrant to aid absorption within ½ hour of application, as Ken-Up 500 on its own can sit on the foliage for up to 6 hours. Mix ratio 15ml to 15litres water.
- Ken-Met 600 WG Herbicide – Additional chemical to assist Ken-Up 500 Flexi. This is a very, very light dose added to bolster the glyphosate, as on its own does not perform with clovers and perennials. The dose is 1gram per 15 litres of water.

The safety data sheets of the chemicals used i.e. Silmaxx SDS; Ken-Met-600 WG Herbicide and Ken-Up 500 Flexi Herbicide are attached as requested.

I trust this answers your query.

Yours faithfully

Lynne Adamson
Governance Support Officer

SAFETY DATA SHEET
SILMAXX

1: Identification of the Substance and Supplier

Product Name	**SILMAXX**
Recommended Use	Adjuvant for Crop Protection Products
Suppliers Details	Orion AgriScience Ltd Unit 1, 15 Sir Gil Simpson Drive, Harewood, Christchurch, 8053 PO Box 39 071, Harewood, Christchurch, 8545
Web Address	www.orionagriscience.co.nz
Email Address	orders@orionagriscience.co.nz
Telephone Number	(03) 928 2386 (office hours), 0800 674 6627 (free phone)
Emergency Telephone	0800 CHEMCALL (0800 243 622) (24 hours)
National Poison Centre	0800 POISON (0800 764 766) (24 hours)
Date of Issue/Revision	March 2020

2: Hazards Identification

Hazard Pictograms

Signal Words	**Warning**
Hazard Classes:	**Hazard Statements:**
6.1E Acute Toxicity (Dermal Cat. 5)	May be harmful in contact with skin
6.1D Acute Toxicity (Inhalation Cat. 4)	Harmful if inhaled
6.3A Skin Irritation (Cat. 2)	Causes skin irritation
6.4A Eye Irritation (Cat. 2)	Causes serious eye irritation
9.1B Aquatic Ecotoxicity (Cat. 2)	Toxic to aquatic organisms with long lasting effects
Precautionary Statements:	
Prevention	Keep out of reach of children. Read label before use. Avoid contact with eyes and skin. Do not breathe in the spray mist. Use only outdoors or in a well ventilated area. Wash hands thoroughly after use. When mixing or applying, wear personal protection as described in section 8. Take off contaminated clothing and wash before reuse. Take all reasonable steps to ensure that this product does not cause any significant adverse effects to the environment beyond the application area. Do not apply directly into or
Response	First aid measures described in section 4. Contain and collect spillage for disposal. In an emergency call 111, Police or Fire Brigade. For specialist advice in an emergency only, call 0800 CHEMCALL (0800 243 6225) (24 hrs).

3: Composition/ Information on Ingredients

Ingredient	CAS No	Content (% w/v)
Polyoxyethylene modified heptamethyltrisiloxane	134180-76-0	>70
Other ingredients	Proprietary	Remainder

4: First Aid Measures

If medical advice is needed, have product container or label at hand. For advice call the National Poisons Centre or a Doctor

Ingestion:	Seek medical advice if feeling unwell
Skin Contact:	Wash with plenty of soap and water. Seek medical advice if irritation occurs.

Eye Contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if easy to do so. Continue rinsing. Seek medical advice if irritation persists.
Inhalation:	Remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical advice if feeling unwell.
Workplace Facilities:	Hand wash facility. Eye wash facility
Advice to Doctor:	No specific antidote. Treat symptomatically
National Poison Centre	0800 POISON (0800 764 766) (24 hours)

Symptoms of Exposure which could occur if this material is not handled in accordance with instructions:

Ingestion:	No data available
Skin Contact:	Irritation
Eye Contact:	Serious irritation
Inhalation:	Respiratory discomfort

5: Fire-Fighting Measures

Fire/Explosion Hazard	Non-Flammable
HAZCHEM Code	Not Applicable
ERP Guide No	Not Applicable
Extinguishing Media	Water spray, foam, dry chemical or C02. Avoid water jet.
Fire Fighting Instructions	During a fire, toxic fumes may be emitted. Wear self-contained breathing apparatus. Contain runoff.
Specific Hazards Arising from Fire	No data available

6: Accidental Release Measures

Personal Precautions	Caution: Floors may be slippery if wet. Wear personal protective clothing and equipment as described in section 8. Exclude non-essential people from the area.
Environmental Precautions	Prevent further spillage or leakage. Prevent material from entering drains, waterways, etc.
Clean Up	Absorb spillage with inert material such as spill kit, sand or cat litter. Collect and place in a sealable container for disposal. Wash down affected area with water and detergent. Absorb and collect washings for disposal. Dispose of safely to a suitable landfill.

7: Handling and Storage

Storage:	Keep out of reach of children. Store in the original tightly closed container in a secure area.
Handling and Use:	Refer to Prevention statements in section 2 above. Exclude people and animals from the application area, both during application and for the duration of the REI.
REI	Until spray has dried (Also refer to companion product)

8: Exposure Controls / Personal Protection

Tolerable Exposure Limit	None established
Workplace Exposure Standards	None established
Engineering Controls	Select spray application equipment to minimize exposure to operator and bystanders
Personal Protection:	
Eye	Safety glasses/goggles when mixing or applying
Skin	Chemical resistant overalls snugly fitting at the neck, wrist and ankle, boots and gloves
Respiratory	Not required where spray mist is not inhaled. Otherwise, respirator (organic vapour and particulate matter) is required.

Clean protective equipment after use

9: Physical and Chemical Properties

Appearance	Clear Amber Liquid

Odour	Sweet slightly solvent
Odour Threshold	No data available
pH	No data available
Melting Point/Freezing Point	-50ºC
Boiling Point	150ºC
Flash Point	143ºC
Flammability	Combustible
Upper/Lower Flammability Limits	No data available
Vapour Pressure	0.133 kPa
Vapour Density	No data available
Relative Density	1.00 g/mL (approx.)
Solubility in Water	Dispersible
Partition Coefficient: n-octanol/water	See section 12
Auto ignition Temperature	No data available
Decomposition Temperature	No data available
Kinematic Viscosity	No data available

10: Stability and Reactivity

Stability	Stable under normal conditions
Hazardous Reactions	None Expected
Incompatibility	None Known
Hazardous Decomposition Products	None Known

11: Toxicological Information

This section describes effects which could occur if this material is not handled in accordance with this data sheet and label instructions

Acute Oral Toxicity	LD50 > 5000 mg/kg
Acute Dermal Toxicity	LD50 > 5000 mg/kg
Acute Inhalation Toxicity	LD50 > 1 mg/L
Skin Irritant/Corrosive	Skin Irritant
Eye Irritant/Corrosive	Serious eye irritant
Sensitisation Effects	None
Mutagenic Effects	None
Carcinogenic Effects	None
Reproductive Effects	None
Specific Organ Toxicity	None

12: Ecological Information

This section describes effects which could occur if this material is not handled in accordance with this data sheet and label instructions

The following information is presented in respect of the active ingredient:

- LC50 (96 hr) (Fish) 2.1 mg/l
- Non toxic to bees

Persistence/degradability	No data available
Bioaccumulative Potential	No data available
Soil Mobility	No data available
Environmental Exposure Limit:	None established

13: Disposal Considerations

Product	Dispose of product by using it in accordance with the label. Waste product should be disposed of to a suitable landfill. For disposal of large quantities contact Orion AgriScience Ltd.
Container	Dispose of to a suitable landfill or via AgRecovery. Do not burn. Do not use packaging for any other purpose.

14: Transport Information

Dangerous Goods

UN Number	3082
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (SILICONE FLUID 70%)
Class	9
Subsidiary Class	None
Packing Group	III
Additional Information	MARINE POLLUTANT
MTQ (Non-Commercial)	1000 litres
Passenger Service Vehicle	No restriction

15 Regulatory Information

EPA Approval No	HSR002503
ACVM Registration No	Not applicable
Qualified Person	Not required
Certified Handler	Not required
Workplace Only	No
Tracking	Not required
Record Keeping	Not required
Site Requirements under EPA Notice and HSWHS Regs:	• A hazardous substance location compliance certificate is not required • A hazardous area is not required • Separation distances for class 3 and class 6 substances to protected places and public places is not applicable • Fire extinguishers are not required • Signage is required for more than 1000 litres • An emergency response plan is required for more than 1000 litres • Secondary containment is required for more than 1000 litres • Separation/Segregation from incompatible substances (classes 1, 2, 3.2, 4 and 5) is not applicable
Additional Requirements	Refer to NZS 8409:2004 'Management of Agrichemicals', and relevant local and regional council plans

16: Other Information

Glossary

ADE	Acceptable Daily Exposure – A daily dose, received via any route, below which no adverse effects are expected over a lifetime of exposure
ACVM	Agricultural Compounds and Veterinary Medicines group of the Ministry of Primary Industries
Cat.	GHS category
Ceiling	A concentration that should not be exceeded at any time during any part of the working day
Certified Handler	A qualification issued by a Compliance Certifier to handle and use particularly toxic substances (6.1A and 6.1B)
DT50	Time (days) for 50% reduction in concentration
EC50	Concentration required to produce an effect in 50% of organisms
Environmental Exposure Limit	Maximum concentration limit of a substance in an environmental medium, e.g., water, soil.

EPA Notice	Hazardous Property Controls Notice 2017
ERP Guide	Dangerous Goods – Initial Emergency Response Guide SNZ HB 76:2008
GHS	Globally harmonized system of classification and labelling of chemicals
Hazardous Substance Location	For locations storing hazard substances of certain classes above threshold quantities
Compliance Certificate	
Hazardous Area	A designated area designed for the presence of flammable substances - Refer AS/NZS 60079.10.1:2009
HAZCHEM Code	Emergency action code for emergency services
HSWHS Regs	Health and Safety at Work (Hazardous Substances) Regulations 2017
LC50	Concentration that will kill 50% of organisms
LD50	Dose that will kill 50% or organisms
MTQ	Maximum Transport Quantity. The maximum amount of dangerous goods that can be transported by road by the user
Notification	Advance notice given to neighbours and other affected parties, of details of proposed application, and other details as described
Octanol-Water Partition Coefficient	The partition coefficient of a substance between n-octanol and water, used as the Logarithm base 10 form, as an indicator that a substance may bioaccumulate
PDE	Permitted Daily Exposure - A daily dose below which no adverse effects are expected over a lifetime of exposure
Protected Place	Residential properties, schools, hospitals, kindys, factories, shops, warehouses, etc., and other places where people assemble
Public Place	A place frequented by the public, including roads (does not include private property)
Qualified Person	A requirement for the loader, contractor or person applying the product to hold a qualification such as a GROWSAFE Certificate, Unit Standard 21563, etc.
Record Keeping	Includes a spray diary or other record of application
REI	Restricted Entry Interval – The length of time after application before entry into the treated area is permitted without the use of protective equipment. For indoor environments, this time period commences once ventilation after treatment begins.
Separation Distances	The distances specified in Part 11 and Part 13 of HSWHS Regs between storage and/or use of hazardous substances and protected places and/or public places
Signage	Positioned at entrances to commercial premises providing information on the hazardous substances present
Soil Adsorption Coefficient (Kd)	The ratio of the concentrations of a substance adsorbed onto a solid sorbent to that dissolved in a liquid phase. The higher the value the less mobile the chemical is in soil
Soil Organic Carbon-Water Partitioning Coefficient (Koc)	The ratio of the mass of a chemical that is adsorbed in the soil per unit mass of organic carbon in the soil. The higher the value the less mobile the chemical is in soil
STEL	Short term exposure level – 15 minute time weighted average
Tolerable Exposure Limit	Maximum concentration limit of a substance above which persons must not be exposed
Tracking	For some particularly hazardous substances, a record must be kept of the transport, storage, sale and use of the product
TWA	Time weighted average calculated over an 8 hour working day
Workplace Exposure Standard	An occupational health standard limiting concentrations of specified substances to which persons are exposed
Workplace Only	A product that is restricted to a workplace only and under the supervision of a certified handler

Please Note

Users must ensure that the most up to date version of this safety data sheet is used.

This Safety Data Sheet summarises information on this product, and how to safely handle and use the product. Each user should familiarise themselves with the product label and Safety Data Sheet, and consider the information in the context of how the product will be handled and used, including in conjunction with other products. Orion AgriScience Ltd assumes no responsibility for the accuracy, completeness or suitability of this information. The user is responsible for determining the suitability and accuracy of this information for their particular purposes.
If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name	**Ken-Met 600 WG Herbicide**
Company Name	Kenso Corporation (M) Sdn Bhd
Address	2 Bond Crescent, Forrest Hill, Auckland 0620 New Zealand
Telephone	(09) 410 0861
Hazardous Substance	
Emergency Telephone	**0800 CHEMCALL (0800 243 622) (24 hours)**
National Poisons Centre	**0800 POISON (0800 764 766) (24 hours)**
Use	For the control of gorse, blackberry, broom and other scrub and broadleaf weeds in pasture, forestry and non-cropland areas.

SECTION 2 – HAZARDS IDENTIFICATION

Hazard Pictograms	
Hazard Classification	**6.3B, 6.4A, 9.1A, 9.2A**
Priority Identifier	**ECOTOXIC** **KEEP OUT OF REACH OF CHILDREN**
Secondary Identifier	6.3B = Harmful – may cause skin irritation. 6.4A = Harmful – may cause eye irritation. 9.1A = Very toxic to aquatic organisms. 9.2A = Very toxic to the soil environment.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	**CAS No**	**Proportion**
Metsulfuron-methyl	74223-64-6	60% w/w
Inert ingredients	secret	To 100% w/w

SECTION 4 – FIRST AID MEASURES

Ingestion	The product is not likely to be hazardous by ingestion. If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre (0800 764 766). Seek medical assistance immediately.
Eye	Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Seek medical assistance.
Skin	Wash contaminated skin with plenty of water. Remove contaminated clothing and wash before re-use.
Inhalation	Remove patient to fresh air. Lay down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance immediately.
Advice to Doctor	Treat symptomatically.

SECTION 5 – FIRE FIGHTING MEASURES

Fire/Explosion Hazard	Non flammable.
HAZCHEM Code	2X
IER Guide No	47
Extinguishing Media	Dry Chemical, water spray, carbon dioxide
Fire Fighting Instructions	During a fire, toxic fumes may be emitted. Wear self-contained breathing apparatus. Contain runoff.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions	For appropriate personal protective equipment (PPE), refer to section 8.
Spillage	Wear suitable chemical resistant clothing including coverall, face shield, respiratory protection (organic vapour minimum) gauntlet gloves and boots. Prevent the product or spilled material from entering drains or water bodies. Contain and sweep spills or if spillage is a liquid absorb spills with inert material such as zeolite clay or sand and place in waste containers. Wash area with

Environmental Precautions	water detergent and absorb with further inert material. Dispose of through a designated hazardous substances disposal facility or contact the local regional/district council for disposal information. Washings must be prevented from entering surface water drains or waterways.

SECTION 7 – HANDLING AND STORAGE

Storage	Keep out of reach of children. Store in original container, tightly closed, away from foodstuffs, medicines, animal remedies, seeds and fertlisers. Store in a cool, dry, well ventilated place and protect from sunlight.
Handling	Avoid contact with skin and eyes and inhalation of concentrate or spray mist. When using, do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking.
Handler Competence	Persons responsible for the storage, handling, mixing, applying or disposing of this product must be trained, experienced or supervised in accordance with requirements for class 6 and 9 substances of the Health and Safety at Work (Hazardous Substances) Regulations 2017 part 4.5 and the Hazardous Substances (Hazardous Property Controls) Notice 2017 Part 4 Subpart C.
Additional Requirements	All aspects of storage, handling, use, disposal and record keeping must be in accordance with NZS 8409:2004 'Management of Agrichemicals', and relevant local and regional council plans.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls	No special requirements. Product is used outdoors. Containment and/or segregation is the most reliable technical protection measure The extent of these protection measures depends on the actual risks in use. If airborne mists or vapours are generated, use local exhaust ventilation controls or adequate respiratory protection (organic vapour minimum) Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit. Follow precaution statements on the label and the use and safety directions in Code of Practice for the Management of Agrichemicals NZS8409.
Personal Protection	Use only protective equipment bearing the mark of the Standards Association of Australia/ New Zealand. When mixing, applying or disposing this product , wear full respiratory protection (at least to organic vapour standard) eye protection, chemical resistant coveralls. gloves and footwear.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form	Granules
Colour	Off white to beige colour
Odour	Non specific
pH	5-7
Flash point (°C)	NA
Flammability Limits	Non flammable
Miscibility	Miscible
Oxidising properties	Not oxidising
Explosive properties	Not explosive

SECTION 10 – STABILITY AND REACTIVITY

Stability	Stable under normal conditions
Incompatibility	None known
Decomposition	Combustion or thermal decomposition will evolve toxic and irritant vapours.
Dangerous Reactions	Products arising from combustion or thermal decomposition may be toxic, corrosive or flammable.

SECTION 11 – TOXICOLOGICAL INFORMATION

This section describes effects which could occur if this product is not handled in accordance with this data sheet.
The following information is presented in respect of the active ingredient:

Acute Toxicity	Acute Oral LD_{50} (rat) >5000 mg/kg

	Acute Dermal LD_{50} (rabbit) >2000 mg/kg Acute Inhalation LC_{50} (rat) (4hr) >5 mg/l
Sensitisation Effects	Not a sensitizer
Eye Damage/ Irritation	Moderate eye irritant
Skin Corrosion/ Irritation	Mild skin irritant
Chronic Effiects	Based on data available, repeated exposures are not anticipated to cause additional significant adverse effects.

SECTION 12 – ECOTOXICITY INFORMATION

This section describes effects which could occur if this material is not handled in accordance with this data sheet.

The following information is presented in respect of the active ingredient:

Ecotoxic Effects	**Actue toxicity to Fish** LC_{50} (96 h) (bluegill sunfish) >150 mg/L LC_{50} (96 h) (rainbow trout) >150 mg/L **Acute toxicity to Birds** Not toxic to birds Oral LC_{50} (mallard duck) >2,510mg/kg Dietary LC_{50} (8d) (bobwhite quail & mallard duck) >5,620mg/kg **Growth Inhibition, Algae** EC_{50} (96 h) (lemna minor duckweed) = 0.4 µg/L EC50 (72 h) (green algae) = 0.45 mg/L **Toxicity to aquatic Invertebrates** LC_{50} (48 h) (daphnia magna) > 150 mg/L **Toxicity to honey bees** Not toxic to bees LD_{50} (oral) >44.3µg/bee; (contact) >50µg/bee

SECTION 13 – DISPOSAL CONSIDERATIONS

Product	Dispose of this product only by using according to the label, or at an approved hazardous substances waste disposal facility.
Container	Ensure the container is empty. Recycle the packaging otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose.

SECTION 14 – TRANSPORT INFORMATION

Dangerous Goods	
UN Number	3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains METSULFURON-METHYL)
Class	9
Subsidiary Class	None
Packaging Group	III
Additional Information	MARINE POLLUTANT
MTQ (Non-Commercial)	250 kg

SECTION 15 – REGULATORY INFORMATION

HSNO Approval No	HSR000242
ACVM Approval No	P8293

SECTION 16 – OTHER INFORMATION

This SDS contains only safety-related information. For other data see product literature.

Contact Points	
Police, Ambulance and Fire Service	111
National Poisons Information Centre	0800 POISON (0800 764 766)
Hazardous Substances Emergency	0800 Chemcall (0800 243 622)

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Product Name:	**Ken-Up 500 Flexi Herbicide**
Company Name:	Kenso Corporation (M) Sdn Bhd
Address:	2 Bond Crescent, Forrest Hill, Auckland 0620 New Zealand
Telephone Number:	(09) 410 0861
Hazardous Substances Emergency Telephone Number:	**0800 CHEMCALL (0800 243 622)**
National Poisons Information Centre:	**0800 POISON (0800 764 766)**
Use:	A non-selective, non-residual herbicide suitable for use in drains and aquatic areas and for general use in agriculture, horticulture, forestry and non-cropland areas.

SECTION 2 – HAZARD IDENTIFICATION

Hazard classification: 6.3B, 8.3A, 9.1B
Priority Identifier: KEEP OUT OF REACH OF CHILDREN
Secondary Identifiers: 6.3 B = May cause skin irritation.
8.3A = May cause eye irritation.
9.1B = Toxic to aquatic organisms.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	**CAS number**	**Proportion**
Glyphosate (as Isopropylamine Salt)	38641-94-0	50 % w/v
Inert Ingredient	secret	<10% w/v
Water	7732-18-5	to 100% w/v

SECTION 4 – FIRST AID MEASURES

Swallowed	Rinse mouth with water. Give plenty of water to drink. Do NOT induce vomiting. Seek medical assistance.
Eye	Hold the eyes and flush immediately with plenty of water. Seek medical advice if irritation develops.
Skin	Remove contaminated clothing and wash affected areas or skin with soap and water. Seek medical advice if irritation develops.
Inhaled	Remove to fresh air, keep warm and at rest. Give artificial respiration or oxygen if breathing is shallow or stopped. Get medical attention immediately.

Advice to Doctor
Treatment is symptomatic.

SECTION 5 – FIRE FIGHTING MEASURES

Fire/Explosion Hazard
Dangerous decomposition or Combustion Products
Thermal decomposition
Not a fire or explosion hazard

Hazardous decomposition products
None known

Hazardous reactions
DO NOT mix, store or apply the product or spray solutions of the product in galvanised steel or unlined steel (except stainless steel) containers or spray tanks. The product or spray solutions of the product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture that can flash or explode if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source. Spray solutions of the product should be mixed, stored and applied only in stainless steel, aluminium, fibreglass, plastic and plastic-lined steel containers.

Extinguishing Media
Extinguish fire with foam, dry powder, carbon dioxide or water spray.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spills and Disposal
Ensure suitable personal protection (including respiratory protection) during removal of spillage. Contain spill and absorb with sand or other absorbent material. Do not allow to enter drains, sewers and watercourses. Collect in sealed container for disposal. Triple rinse containers, add rinsings to spray tanks and send containers for recycling (Agrecovery) or if not recycle, break, crush or puncture and bury empty containers in a local authority landfill or in accordance with local authority regulation. Do not dispose of undiluted chemicals on site.

SECTION 7 – HANDLING AND STORAGE

Storage:
Keep out of reach of children. Store in the original, tightly closed container, in a secure area away from human and animal foodstuffs, seeds, fertilisers, food packaging, human/animal remedies/medicines.

Handling and Use: Avoid contact with eyes and skin. Avoid inhalation of spray mist. When mixing or applying, wear protective clothing as described in section 8. Do not eat, drink or smoke while using. Wash hands and face after use. Wash protective clothing after use. This product should only be mixed, contained in or sprayed by, equipment made from stainless steel, fibreglass, plastic, aluminium, brass or copper. A highly flammable gas (hydrogen) may be formed from the contact of this product with galvanised or unlined steel. All spray equipment, including pumps, spray tanks, lines, nozzles, and landing gear (aircraft) should be thoroughly washed with water after each day of spraying.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards:
None established for formulated product or its components

Engineering Controls:
Well ventilated

Personal Protection:
Avoid contact with eyes and skin. Do not inhale spray mist. When preparing spray solution, wear chemical resistant coveralls, gauntlet gloves footwear and goggles or face-shield. If contact of spray mist is likely wear respiratory protection to a minimum of level of "Organic Vapour" specification. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face and contaminated clothing.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid
Colour:	Clear blue liquid
Odour:	Slight ammoniacal odour
Boiling point (°C):	Not applicable
Vapour Pressure:	Not applicable
Specific Density:	1.22 ± 0.01
Flashpoint:	Non flammable
Flammability Limits:	Non flammable
Solubility in Water:	Completely soluble

SECTION 10 – STABILITY AND REACTIVITY

Chemical Stability:	This product is unlikely to react or decompose under normal storage conditions.
Conditions to Avoid:	This product should be kept in a cool place, preferably below 30^0C.
Incompatibilities:	No particular incompatibilities.
Fire Decomposition:	Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas. Oxides of phosphorus and other phosphorus compounds. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death. Hydrogen cyanide poisoning signs and symptoms are weakness, dizziness, headache, nausea, vomiting, coma, convulsions, and death. Death results from respiratory arrest. Hydrogen cyanide gas acts very rapidly; symptoms and death can both occur quickly.
Polymerization:	This product is unlikely to undergo polymerisation.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity data:

Glyphosate isopropylamine salt technical
Acute oral LD_{50} for rat: 5600 mg/kg
Acute dermal LD_{50} for rabbits: >5000 mg/kg

LC_{50} (96 hr) for rainbow trout: 8.2 – 26 mg/L
LC_{50} (96 hr) for bluegill sunfish: 5.8 – 14 mg/L
LD_{50} for bees: > 0.1 mg/kg

Other Information

The Australian Acceptable Daily Intake (ADI) for glyphosate for a human is 0.3 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 30 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing, 'ADI List', TGA, August 2003).

SECTION 12 – ECOLOGICAL INFORMATION

Known Harmful Effects on the Environment

Technical glyphosate acid is practically nontoxic to fish and may be slightly toxic to aquatic invertebrates.

Other Precautions
Do not spray in high winds. Do not contaminate dams, waterways or sewers with this product.

Environ. Protection
Glyphosate is a non-selective contact herbicide. Spray drift can cause damage.

Persistence / Degradability
Adsorption studies indicate that glyphosate has very low mobility. Average field half life of glyphosate is 47 days.

Acute Toxicity - Fish
The following data is for the formulated product.
Not toxic to fish.
LC_{50} (96 hr) for rainbow trout is >989 mg/l.
LC_{50} (96 hr) for carp is >895 mg/l.

Acute Toxicity – Other Organisms
Birds: Not toxic to birds. LD_{50} for mallard ducks and bobwhite quail (diet) is >5620 mg/kg
Bees: Not toxic to bees. LD_{50} >100 µg/bee.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal: Dispose of tank rinsate in accordance with normal application practices. Disposal of contaminated clean-up materials and/or undiluted material must be through an approved Hazardous Substances disposal service or facility. Advice regarding the disposal of this product can be sourced from the relevant local authority. In most circumstances this product may be disposed of in approved local authority land fills.

SECTION 14 – TRANSPORT INFORMATION

UN Number (Sea Transport): 3082

IMO Proper Shipping: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains GLYPHOSATE, 50%), Class 9, Packing Group III.

SECTION 15 – REGULATORY INFORMATION

HSNO Approval Number: HSR101039
HSNO Controls (inc. Tracking and Record Keeping):
See http://www.epa.govt.nz for controls.
ACVM Registration: P9123
ACVM Controls:
See www.footsafety.govt.nz for registration conditions.

SECTION 16 – OTHER INFORMATION

This SDS contains only safety-related information. For other data see product literature.

CONTACT POINT:

Police and Fire Service:	Dial	111
National Poisons Information Centre:	Dial	0800 POISON (0800 764 766)
Hazardous Substances Emergency Telephone Number:	Dial	0800 CHEMCALL (0800 243 622)