


Infosafe No™ 3NV3Q	Issue Date : July 2019	ISSUED by NUFARM
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 Product Name **CRUCIAL™**

1. Identification

GHS Product Identifier	CRUCIAL™
Product Code	01800
Product Type	Herbicide
Company Name	Nufarm NZ
Address	6 Manu Street, Otahuhu Auckland 2024 New Zealand
Telephone/Fax Number	Tel: 0-9-270 4150
Emergency phone number	0800 651 911
Email	nzinfo@nufarm.com
Recommended use of the chemical and restrictions on use	A non-residual, non-selective herbicide for weed control prior to planting crops and pasture, prior to harvesting some crops and for general weed control in horticulture, agriculture, and forestry.
Other Information	This SDS describes, to the best of our knowledge, the properties of the concentrated product. The physical properties and some of the assessments do not apply to the properties of the product once it has been diluted for application. Acute health effects of the diluted product are likely to be much less severe.

2. Hazard Identification

Signal Word (s)	WARNING
Hazard Statement (s)	H333 May be harmful if inhaled H411 Toxic to aquatic life with long lasting effects.
General Precautionary Statement (s)	P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P103 Read label before use.
Pictogram (s)	Environment, 
Precautionary statement – Response	P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell. P391 Collect spillage.
Precautionary statement – Disposal	P501 Dispose of contents/container according to the label, or at an approved landfill.
Other Information	6.1E acute toxicant, 9.1B aquatic toxicant, TOXICITY Warning-May be harmful if inhaled ECOTOXIC Toxic to aquatic life with long-lasting effects. Non-selective herbicide - toxic to plants.

3. Composition/information on ingredients

Chemical Characterization	Liquid		
Ingredients	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
	Glyphosate (as potassium, monomethylamine and ammonium salts)	1071-83-6	600 g/L
	Non hazardous components		10-30 %
	Water		Balance

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4. First-aid measures

First Aid Measures	For advice contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately. Begin artificial respiration if the victim is not breathing. Use mouth-to-nose rather than mouth-to mouth. Obtain medical attention.
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.
Ingestion	Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre (0800 764 766). Seek medical assistance immediately.
Skin	Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash affected areas with soap and water. If a large area is affected seek medical assistance.
Eye contact	Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary. Seek medical assistance. Remove contact lenses, if present and easy to do.
First Aid Facilities	Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.
Advice to Doctor	Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	If involved in a fire, the product will not burn. Choose extinguishing media to suit the burning material. Water, foam, carbon dioxide or dry chemical.
Hazards from Combustion Products	This product, or spray solutions of this product, react with galvanised steel or unlined steel (except stainless steel) containers and tanks, to produce hydrogen gas which may form a highly flammable or explosive gas mixture. If involved in a major fire, could evolve oxides of nitrogen or phosphorus.
Special Protective Equipment for fire fighters	Full protective clothing and self-contained breathing apparatus.
Specific Methods	Keep up wind. Do not allow washings to reach sewage or effluent systems.
Hazchem Code	2Z
Decomposition Temp.	Data not available.
Other Information	Location Certificate: Not applicable Hazardous Atmosphere Zone: Not applicable Number of Fire Extinguishers: Not applicable

6. Accidental release measures

Spills & Disposal	Wear protective clothing. Clear area of unprotected personnel. Contain spill and absorb with sand, soil or absorbent granules. If spill does enter waterways contact the local authority. Collect in an appropriate sealable container for disposal in an approved landfill. Final clean-up with degreasing agent or detergent is advised.
Personal Protection	For appropriate personal protective equipment (PPE), refer Section 8.
Environmental Precautions	Prevent contamination of soil and water. This product is a herbicide and spills can damage crops, pastures and desirable vegetation.

7. Handling and storage

Precautions for Safe Handling	Any application of CRUCIAL when used as an aquatic herbicide, must be under the personal control of a 'Qualified Loader', 'Qualified Contractor' or a 'Qualified Person'. For more information refer to Hazardous Substances (Hazardous Property Controls) Notice 2017. Avoid skin and eye contact and inhalation of spray mist. CERTIFIED HANDLER: Is not required TRACKING: Is not required RECORD KEEPING: Not applicable BEWARE: Spray drift hazard. Apply this product carefully. Spray drift may cause serious damage to other desirable plants. Solutions of CRUCIAL should be mixed, stored and applied only in stainless steel, aluminium, brass, copper, fibreglass, plastic or plastic lined containers. Do not mix or store this product in galvanized or unlined steel
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Conditions for safe storage, including any incompatibilities (except stainless steel) containers or spray tanks. CRUCIAL or solutions of CRUCIAL react with such containers to produce hydrogen gas which may form a highly combustible gas mixture which can flash or explode if ignited. Keep out of reach of children.

Store in original container tightly closed and in a locked, dry, cool area away from foodstuffs, fertilisers and seeds. Storage must be in accordance with NZS 8409 Management of Agrichemicals.

Stores containing 1,000L of CRUCIAL require secondary containment and are subject to signage, and more than 1,000L require emergency response plans.

Other Information Aggregate Storage Volume Thresholds:
When stored with substances of the same hazard classification the aggregate quantity must be considered. For full details refer to the current NZS8409 Management of Agrichemicals and the HSNO Regulations.
Avoid contact with foliage or green stems of fruit or crops, desirable plants and trees, since severe injury or death may occur. Do not allow drift to occur outside the target area.

8. Exposure controls/personal protection

Occupational exposure limit values No TEL has been set for CRUCIAL or any element or compound in this substance. No EEL value is set at this time.
There are Workplace Exposure Standards (WES) values currently set for components of CRUCIAL but as they are not Prescribed Exposure Standard (PES) they are guidance values used for the management of health risk. No PES has been set for any component of CRUCIAL.
WES TWA for Methylamine = 10ppm and 13mg/m³
WES TWA for Potassium and Sodium hydroxide = Ceiling 2
WES TWA for 1,2 propanediol = 150ppm and 474mg/m³
WES TWA for 1,2,3- Propanetriol = 10mg/m³
WES STEL for Glutaraldehyde = 0.05ppm

Appropriate engineering controls Handle in well ventilated areas, generally natural ventilation is adequate.

Personal Protective Equipment When opening the container, preparing spray and using the prepared spray wear safety goggles, impervious gloves, waterproof hat, coat and trousers (worn outside rubber boots)

Hygiene Measures Do not eat, drink or smoke while using.
Remove protective clothing and wash hands and face thoroughly before meals and after work.
Wash protective clothing daily after work.

9. Physical and chemical properties

Form	Liquid
Appearance	Clear green liquid.
Odour	No odour
Decomposition Temperature	Data not available.
Melting Point	N/A
Boiling Point	>105°C
Solubility in Water	Soluble
Specific Gravity	1.323
pH	4.4 - 5.0 (5%w/v)
Vapour Pressure	1.31 x 10 ⁻² mPa (25°C) for glyphosate
Vapour Density (Air=1)	Data not available.
Partition Coefficient: n-octanol/water	Kow Log P is <-3.2 (pH2-5, 20°C) for glyphosate
Flash Point	N/A
Flammability	Non combustible material.
Auto-Ignition Temperature	N/A

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Kinematic Viscosity Data not available.

Other Information (SL) Soluble concentrate

10. Stability and reactivity

Chemical Stability Stable under normal conditions of handling and storage.

Incompatible Materials Non corrosive to stainless steel, polyethylene and plastics. CRUCIAL reacts with galvanised steel or unlined steel (except stainless steel) containers and tanks, to produce hydrogen gas that may form a highly combustible gas mixture.

Possibility of hazardous reactions Avoid contact of the concentrate with strong alkalis and alkaline materials such as lime.
Such contact may release isopropylamine vapour with a strong fish like odour, which is an irritant to eyes.

Hazardous Polymerization Hazardous polymerisation will not occur.

11. Toxicological Information

Toxicology Information No harmful effects are expected if the precautions on the label and this SDS are followed.

Acute Toxicity - Oral LD50 (rat) = 5,000mg/kg

Acute Toxicity - Dermal LD50 (rabbits) = >2,000mg/kg

Acute Toxicity - Inhalation LC50 (rat) (4h) = >5mg/L air.

Ingestion The concentrate is of low toxicity if swallowed.
Amounts swallowed incidental to normal handling procedures and use are not expected to cause injury.
Possible symptoms of exposure include: nausea, vomiting and gastrointestinal discomfort and diarrhoea.
Ingestion of a large quantity of the undiluted product may result in hypotension and pulmonary oedema.

Inhalation When applying the product as a spray avoid breathing in spray mist.
May cause irritation to mucous membranes and respiratory tract.

Skin Not a skin irritant and not harmful by dermal exposure.

Eye Not an eye irritant.

Skin Sensitisation Not a contact sensitiser.

Germ cell mutagenicity Information is not available.

Carcinogenicity Various regulatory agencies classify glyphosate as non-carcinogenic. The International Agency for Research on Cancer (IARC) classified glyphosate as 'probably carcinogenic to humans' (Group 2A). This finding was considered by various regulators post 2015.

Reproductive Toxicity Information is not available.

STOT-repeated exposure Information is not available.

Aspiration Hazard Data not available.

Chronic Effects No information available, no chronic effects expected.

Serious eye damage/irritation Not an irritant.

Mutagenicity No data to support a positive result.

Respiratory Irritation Not an irritant.

Skin corrosion/irritation Not an irritant.

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

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term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing, Office of Chemical Safety, 'ADI List', June 2018).

12. Ecological information

Persistence and degradability	Adsorption studies indicate that glyphosate has very low mobility. DT50 varies from 1-130 days depending on environmental conditions for glyphosate
Bioaccumulative Potential	Glyphosate is not bio accumulative, BCF = <1 for bluegill sunfish.
Other Precautions	Do not spray in high winds. Do not contaminate dams, waterways or sewers with this product.
Environmental Protection	Glyphosate is a non-selective contact herbicide. Spray drift can cause damage.
Acute Toxicity - Fish	LC50 (96h) for bluegill sunfish is 120 mg/L for glyphosate LC50 (96h) for trout >1,227mg a.e./L for glyphosate potassium salt
Acute Toxicity - Daphnia	LC50 (48h) for daphnia is >1,227mg a.e./L for glyphosate potassium salt
Acute Toxicity - Algae	EbC50 (72h) green algae (Selenastrum capricornutum) = 35mg a.e./L for glyphosate potassium salt
Acute Toxicity - Other Organisms	Acute oral LD50 for bobwhite quail >2,241mg a.e./kg for glyphosate potassium salt Bee LD50 (48h) (contact & oral) >100 µg a.e/bee for glyphosate potassium salt

13. Disposal considerations

Product Disposal	Dispose of product only by using according to the label, or at an approved landfill.
Container Disposal	Triple rinse empty container and add rinsate to spray tank. Recycle empty container. Otherwise crush and bury in a suitable landfill.

14. Transport information

Transport Information	It is good practice not to transport agricultural chemical products with food, food related materials and animal feedstuffs.
U.N. Number	3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. - (glyphosate, 60%)
Transport hazard class(es)	9
Hazchem Code	2Z
Packaging Method	-
Packing Group	III
EPG Number	-
IERG Number	47
IMO Marine Pollutant	Yes. Environmentally Hazardous Substance mark required.
IMDG EMS	F-A, S-F
Other Information	Do not carry more than 10L of CRUCIAL on a passenger service vehicle. Segregation: Check the latest Land Transport Rule Dangerous Goods Rule 45001 for additional information. Sea transport may require additional segregation. Refer NZS5433 sea segregation for details.

15. Regulatory information

National and or International Regulatory Information	Registered pursuant to the ACVM Act 1997, No. P9595 See www.foodsafety.govt.nz for registration conditions Approved pursuant to the HSNO Act 1996, Approval Code HSR101362 See www.epa.govt.nz for approval controls.
Packaging & Labelling	WARNING KEEP OUT OF REACH OF CHILDREN READ LABEL BEFORE USE.



Safety Data Sheet

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Hazard Rating Systems NFPA/HMIS: 2-1-0

16. Other Information

Date of preparation or last revision of SDS June 2019

Contact Person/Point IN AN EMERGENCY, DIAL 111 - FIRE OR POLICE
24Hr Tollfree Emergency No: 0800 651 911
24Hr Emergency No: National Poisons Centre Phone: 0800 764 766

Revisions Highlighted Minor changes made to sub section-carcinogenicity under section 11.

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