

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

## 1. Identification

<b>GHS Product Identifier</b>	CRUCIAL™
<b>Product Code</b>	01800
<b>Product Type</b>	Herbicide
<b>Company Name</b>	Nufarm NZ
<b>Address</b>	6 Manu Street, Otahuhu Auckland 2024 New Zealand
<b>Telephone/Fax Number</b>	Tel: 0-9-270 4150
<b>Emergency phone number</b>	0800 651 911
<b>Email</b>	nzinfo@nufarm.com
<b>Recommended use of the chemical and restrictions on use</b>	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.
<b>Other Information</b>	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

<b>Signal Word (s)</b>	WARNING
<b>Hazard Statement (s)</b>	H333 May be harmful if inhaled H411 Toxic to aquatic life with long lasting effects.
<b>General Precautionary Statement (s)</b>	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.
<b>Pictogram (s)</b>	Environment,  
<b>Precautionary statement – Response</b>	P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell. P391 Collect spillage.
<b>Precautionary statement – Disposal</b>	P501 Dispose of contents/container according to the label, or at an approved landfill.
<b>Other Information</b>	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

<b>Chemical Characterization</b>	Liquid		
<b>Ingredients</b>	<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

<b>First Aid Measures</b>	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.
<b>Inhalation</b>	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.
<b>Ingestion</b>	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.
<b>Skin</b>	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.
<b>Eye contact</b>	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.
<b>First Aid Facilities</b>	Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.
<b>Advice to Doctor</b>	Treat symptomatically.

## 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	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.
<b>Hazards from Combustion Products</b>	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.
<b>Special Protective Equipment for fire fighters</b>	Full protective clothing and self-contained breathing apparatus.
<b>Specific Methods</b>	Keep up wind. Do not allow washings to reach sewage or effluent systems.
<b>Hazchem Code</b>	2Z
<b>Decomposition Temp.</b>	Data not available.
<b>Other Information</b>	Location Certificate: Not applicable Hazardous Atmosphere Zone: Not applicable Number of Fire Extinguishers: Not applicable

## 6. Accidental release measures

<b>Spills &amp; Disposal</b>	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.
<b>Personal Protection</b>	For appropriate personal protective equipment (PPE), refer Section 8.
<b>Environmental Precautions</b>	Prevent contamination of soil and water. This product is a herbicide and spills can damage crops, pastures and desirable vegetation.

## 7. Handling and storage

<b>Precautions for Safe Handling</b>	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/m<sup>3</sup>  
WES TWA for Potassium and Sodium hydroxide = Ceiling 2  
WES TWA for 1,2 propanediol = 150ppm and 474mg/m<sup>3</sup>  
WES TWA for 1,2,3- Propanetriol = 10mg/m<sup>3</sup>  
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

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

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

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

## 14. Transport information

<b>Transport Information</b>	It is good practice not to transport agricultural chemical products with food, food related materials and animal feedstuffs.
<b>U.N. Number</b>	3082
<b>UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. - (glyphosate, 60%)
<b>Transport hazard class(es)</b>	9
<b>Hazchem Code</b>	2Z
<b>Packaging Method</b>	-
<b>Packing Group</b>	III
<b>EPG Number</b>	-
<b>IERG Number</b>	47
<b>IMO Marine Pollutant</b>	Yes. Environmentally Hazardous Substance mark required.
<b>IMDG EMS</b>	F-A, S-F
<b>Other Information</b>	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

<b>National and or International Regulatory Information</b>	Registered pursuant to the ACVM Act 1997, No. P9595 See <a href="http://www.foodsafety.govt.nz">www.foodsafety.govt.nz</a> for registration conditions Approved pursuant to the HSNO Act 1996, Approval Code HSR101362 See <a href="http://www.epa.govt.nz">www.epa.govt.nz</a> for approval controls.
<b>Packaging &amp; Labelling</b>	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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