

Infosafe No™ 3NUSD Issue Date : August 2017 ISSUED by NUFARM

Product Name **REVOLVER Herbicide**

Classified as hazardous

## 1. Identification

<b>GHS Product Identifier</b>	REVOLVER Herbicide
<b>Product Code</b>	0954
<b>Product Type</b>	Group L Herbicide
<b>Company Name</b>	NUFARM AUSTRALIA LIMITED. (ABN 80 004 377 780)
<b>Address</b>	103-105 Pipe Road Laverton North Victoria 3026 Australia
<b>Telephone/Fax Number</b>	Tel: +61 3 9282-1000 Fax: +61 3 9282-1001
<b>Emergency phone number</b>	1800 033 498 (24hr Australia)
<b>Recommended use of the chemical and restrictions on use</b>	For the control of a wide range of grasses and broadleaf weeds. Can be utilised in crop establishment programs. Contains non-ionic wetter. FOR USE ONLY AS AN AGRICULTURAL HERBICIDE. DO NOT USE THIS PRODUCT IN THE HOME GARDEN.
<b>Other Information</b>	This Safety Data Sheet describes the properties of the concentrated product. The physical properties and the assessments may not apply to the properties of the product once it has been diluted for application.

## 2. Hazard Identification

<b>GHS classification of the substance/mixture</b>	OT3 Acute Toxicity - Oral: Category 3 DT3 Acute Toxicity - Dermal: Category 3 SC-2 Skin Corrosion/Irritation: Category 2 GT/VT/IT 2 Acute Toxicity - Inhalation: Category 2 SE-3RES STOT Single Exposure Category 3 (respiratory tract irritation) RE1 STOT Repeated Exposure Category 1 ED1 Eye Damage/Irritation: Category 1
<b>Signal Word (s)</b>	DANGER
<b>Hazard Statement (s)</b>	H301 Toxic if swallowed. H311 Toxic in contact with skin. H315 Causes skin irritation. H330 Fatal if inhaled. H335 May cause respiratory irritation. H372 Causes damage to organs through prolonged or repeated exposure. H318 Causes serious eye damage.
<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. P104 Read Safety Data Sheet before use.
<b>Pictogram (s)</b>	Corrosion, Exclamation mark, Health hazard, Skull and crossbones, The below pictograms are GHS Hazard symbols for workplace use only. See SECTION 14 for Dangerous Goods information.



<b>Precautionary statement – Prevention</b>	P260 Do not breathe dust or spray. P264 Wash hands and exposed skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves, clothing, eye and face protection.
<b>Precautionary statement – Response</b>	P272 Contaminated work clothing should not be allowed out of the workplace. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310 Immediately call a POISON CENTER or doctor/physician. P320 Specific treatment is urgent (see First Aid information on this SDS). P301 IF SWALLOWED:

Infosafe No™ 3NUSD	Issue Date : August 2017	ISSUED by NUFARM
--------------------	--------------------------	------------------

 Product Name **REVOLVER Herbicide**

Classified as hazardous

P315 Get immediate medical advice/attention.  
 P320 Specific treatment is urgent (see First Aid information on this SDS).  
 P330 Rinse mouth.  
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
 P315 Get immediate medical advice/attention.  
 P322 Specific measures (see First Aid information on this SDS).  
 P361 Remove/Take off immediately all contaminated clothing.  
 P363 Wash contaminated clothing before reuse.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P315 Get immediate medical advice/attention.  
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
 Poisons Schedule S7 DANGEROUS POISON

**Other Information**

### 3. Composition/information on ingredients

<b>Chemical</b>	Liquid		
<b>Characterization</b>			
<b>Ingredients</b>	<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
	Paraquat present as	1910-42-5	135 g/L
	Paraquat dichloride		
	Diquat (present as	85-00-7	115 g/L
	diquat dibromide)		
	Surfactants		10-30 %
	Water		Balance

### 4. First-aid measures

<b>Inhalation</b>	Remove patient from exposure, keep warm and at rest. Obtain medical attention urgently.
<b>Ingestion</b>	<p>RAPID TREATMENT IS ESSENTIAL IN CASE OF PARAQUAT POISONING.</p> <p>Immediately transfer patient to nearest hospital or medical centre, warning by telephone of the estimated time of arrival so that the start of treatment is not delayed. If swallowed, do NOT induce vomiting; make every effort to prevent vomit from entering the lungs by careful placement of the patient. Rinse mouth. A slurry of activated charcoal or clay (fuller's earth, bentonite) may be administered by a trained person. Ingestion of activated charcoal tablets, food, or even plain dirt, may be of benefit if absorbent slurry cannot be given.</p>
<b>Skin</b>	<p>Wash affected areas thoroughly with soap and water.</p> <p>Remove contaminated clothing and launder before re-use.</p> <p>Seek medical advice, but only after the exposed skin has been thoroughly washed.</p>
<b>Eye contact</b>	<p>If in eyes, hold eyelids open and wash with copious amounts of water for at least 15 minutes.</p> <p>Seek medical advice immediately.</p>
<b>First Aid Facilities</b>	If poisoning occurs, contact a doctor or the Poisons Information Centre (Australia) on 13 11 26.
<b>Advice to Doctor</b>	<p>RAPID TREATMENT FOR PARAQUAT POISONING IS ESSENTIAL. Evacuation of the stomach, stomach washout and administration of adsorbents should be carried out as quickly as possible.</p> <p>A booklet entitled 'Paraquat Poisoning, a practical guide to diagnosis, first aid and hospital treatment' (prepared by Syngenta) is available at major hospitals or Poisons Information Centres, or contact the emergency number at the end of this SDS.</p> <p>TREATMENT: Wash out stomach and test urine and gastric aspirate (if clear) for presence of paraquat. Give activated charcoal (100 g for adults or 2 g / kg body weight for children) orally or via gastric tube, together with a suitable purgative (200 ml of an aqueous solution of mannitol). Alternatively, 1 litre of 15% aqueous suspension of Fuller's Earth or a 7% suspension of bentonite in 10% glycerol in water should be used if activated charcoal is unavailable. Repeat administration of adsorbent plus purgative until adsorbent is seen in the stools. This should normally take between 4 and 6 hours after the start of treatment. NOTE: The use of gastric lavage without administration of an adsorbent has not shown any clinical benefit. Do not use supplemental oxygen.</p>

Infosafe No™ 3NUSD Issue Date : August 2017 ISSUED by NUFARM

Product Name **REVOLVER Herbicide**

Classified as hazardous

Treat skin irritation / damage symptomatically with daily review if contaminated with concentrate as blistering and chemical burns may develop over 1 to 3 days. If systemic toxicity is suspected, test for paraquat in urine or blood and treat confirmed paraquat systemic toxicity as above.

**Indication of immediate medical attention and special treatment needed if necessary**  
OBTAIN IMMEDIATE MEDICAL ATTENTION.  
SPEED IS ESSENTIAL.

## 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.  
**Hazards from Combustion Products** Non-combustible.  
If involved in a fire, the dehydrated components may emit oxides of carbon, oxides of nitrogen and hydrogen chloride.  
**Special Protective Equipment for fire fighters** Breathable air apparatus must be worn when fighting a fire in which this product is involved.  
**Hazchem Code** 2X  
**Other Information** STOP FIRE WATER FROM ENTERING DRAINS OR WATER BODIES.

## 6. Accidental release measures

**Spills & Disposal** Contain spill and absorb with clay, sand, soil or proprietary absorbent (such as vermiculite).  
Collect spilled material and waste in sealable open-top type containers for disposal.  
On-site disposal of concentrate is not acceptable.  
If possible, ring 1800 033 498 for specialist advice.  
**Personal Protection** Wear specified PPE to decontaminate personnel and equipment, or to handle broken packages or containers.  
Wear eye protection, chemically resistant gloves, rubber boots, chemically resistant overalls and full face shield with chin guard. Decontaminate emergency personnel with soap and water before leaving the emergency area.  
**Clean-up Methods - Large Spillages** If large liquid spills occur, attempt to recover as much spilt material from sumps and bunded areas, as possible, before absorbing remaining material into vermiculite or other absorbent.  
**Environmental Precautions** Use earthen bunds or absorbent bunding to prevent spreading of spillage.

## 7. Handling and storage

**Precautions for Safe Handling** For use by licensed pest control operators or primary producers only.  
Do not work in spray mist.  
Avoid contact of the concentrate with skin cuts or abrasions.  
Do not continue to use if skin irritation or nose bleed occurs. This may be caused by exposure to spray mist as the result of incorrect use of equipment or adverse climatic conditions. Stop and review handling and spraying techniques before further spraying. If symptoms persist seek medical advice.  
**Conditions for safe storage, including any incompatibilities** Store in the closed, original container in a cool, well ventilated area.  
Do not store for prolonged periods in direct sunlight.  
Store in a locked enclosure.  
For use by licensed pest-control operators or primary producers only.  
**Other Information** Always read the label and any attached leaflet before use.

## 8. Exposure controls/personal protection

**Occupational exposure limit values** No exposure standard for this product has been set, however, an exposure standard has been set for paraquat (respirable sizes) at 0.1 mg/m3.  
An exposure standard has been set for diquat dibromide at 0.5 mg/m3.  
**Appropriate engineering controls** No special requirements.  
Ensure workplace is well ventilated.  
Some people who are extremely sensitive to the product may develop nose

Infosafe No™ 3NUSD	Issue Date : August 2017	ISSUED by NUFARM
--------------------	--------------------------	------------------

 Product Name **REVOLVER Herbicide**

Classified as hazardous

**Respiratory Protection**

bleeds when handling the concentrate. If possible, these people should not handle the material; if they must, provide effective local ventilation. If exposure to vapour, spray or dusts from dried product is expected, wear a high efficiency particulate respirator covering nose and mouth.

**Personal Protective Equipment**

When opening the container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and goggles.

**Hygiene Measures**

When there is a risk of exposure to spray mist wear waterproof footwear and waterproof protective clothing, impervious gauntlet length gloves (rubber or PVC), goggles and a face mask and respirator covering nose and mouth and capable of filtering spray droplets. A high efficiency type particulate respirator is recommended, but in any event use a respirator which complies with the requirements of AS1716 (Standards Association of Australia). Further advice on safety equipment should be obtained from a safety equipment manufacturer.

Avoid contacting vegetation wet with spray, but if necessary to do so, wear waterproof footwear and waterproof protective clothing and gloves. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

**Requirements Concerning Special Training**

After each day's use, wash contaminated clothing and safety equipment. Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

## 9. Physical and chemical properties

<b>Form</b>	Liquid
<b>Appearance</b>	Dark green-blue liquid
<b>Odour</b>	Obnoxious odour
<b>Boiling Point</b>	~100°C
<b>Solubility in Water</b>	Soluble in water.
<b>Specific Gravity</b>	1.16
<b>pH</b>	5.0 - 6.0
<b>Vapour Pressure</b>	<1 x 10 <sup>-2</sup> mPa (25°C, paraquat dichloride); <0.01 mPa (diquat dibromide monohydrate).
<b>Partition Coefficient: n-octanol/water</b>	Kow Log P is -4.5 (@ 20°C for paraquat); -4.6 (diquat)
<b>Flammability</b>	Non combustible material.

## 10. Stability and reactivity

<b>Chemical Stability</b>	Paraquat and diquat are inactivated by adsorption onto clay.
<b>Incompatible Materials</b>	Paraquat and diquat are highly corrosive to most metals, e.g. aluminium, zinc and iron.
<b>Possibility of hazardous reactions</b>	Keep away from strong oxidising agents.

## 11. Toxicological Information

<b>Acute Toxicity - Oral</b>	LD50 (rat) 129 - 157 mg/kg for paraquat dichloride LD50 (guinea pig) 30 - 58 mg/kg LD50 (rat) 408 mg/kg for diquat dibromide
<b>Acute Toxicity - Dermal</b>	LD50 (rat) 911 mg/kg for paraquat dichloride LD50 (rabbit) 240 mg/kg for paraquat ion LD50 (rat) >793 mg/kg for diquat dibromide May cause temporary damage to nails and a delay in the healing of cuts and wounds.
<b>Acute Toxicity - Inhalation</b>	LC50 (rat) (4hr) 0.5 - 1.5 µg/l for paraquat dichloride LC50 (rat) (4hr) 571 - 673 µg/l for diquat dibromide

Infosafe No™ 3NUSD	Issue Date : August 2017	ISSUED by NUFARM
--------------------	--------------------------	------------------

 Product Name **REVOLVER Herbicide**

Classified as hazardous

<b>Ingestion</b>	TREATMENT OF PARAQUAT POISONING MUST COMMENCE AS RAPIDLY AS POSSIBLE. Rapid treatment is essential. The immediate effects of poisoning depend on the dose of paraquat absorbed into the blood. Mild poisoning occurs at <20 mg paraquat ion/kg body weight and the effects are vomiting and diarrhoea. Moderate to severe poisoning occurs at 20-30 mg paraquat ion/kg body weight and the effects are vomiting, abdominal discomfort, soreness and inflammation of the mouth, throat and oesophagus, difficulty in swallowing and, later, diarrhoea. Kidney and liver damage may appear 1-3 days after exposure. Can cause death by a delayed proliferating fibrosis of the lung within 1-3 weeks. Lethal poisoning occurs at >30 mg paraquat ion/kg body weight and the effects are nausea and vomiting, and can cause death by multi-organ failure and circulatory collapse within 48 hours.
<b>Inhalation</b>	Highly toxic if inhaled. Nose bleeding and soreness of the throat may result from spray mist or dust trapped on the nasal mucosa. Irritating to the respiratory system. Pulmonary oedema may occur up to 48 hours after exposure and could prove fatal. If the concentrate is allowed to dry out, solid paraquat dust can be created. Paraquat dust is highly toxic (TLV 0.1mg/m3) and should not be handled without full respiratory protection. This product contains a stenching agent to give an offensive smell. This has been done to reduce the likelihood of accidental ingestion. This stenching agent may cause headaches and nausea in some people when inhaled. The presence of this offensive smell in the air does not necessarily indicate the presence of paraquat.
<b>Skin</b>	Contact with concentrate on skin will result in moderate irritation. Can cause inflammation and in severe cases blistering of the skin. Contamination of the nails may cause white spots or in severe cases cracking and loss of the nail. Normal growth follows without delay. Intact skin is a very effective barrier to paraquat. Damaged skin removes the barrier and paraquat may be absorbed with effects as outlined above under ingestion.
<b>Eye</b>	Eye irritation may be delayed. May lead to ulceration of corneal and conjunctival epithelium giving rise to secondary infection. Although healing may be slow, the injury is superficial and with proper medical care will be complete, even in severe cases.
<b>Skin Sensitisation</b>	Product is not a skin sensitiser.
<b>Carcinogenicity</b>	Data indicates no carcinogenic effects.
<b>Reproductive Toxicity</b>	Data indicates no reproductive effects.
<b>Chronic Effects</b>	Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.
<b>Serious eye damage/irritation</b>	This product is a severe eye irritant.
<b>Respiratory Irritation</b>	The product is a moderate respiratory irritant.
<b>Skin corrosion/irritation</b>	Moderate skin irritant.
<b>Other Information</b>	The Australian Acceptable Daily Intake (ADI) for paraquat (as cation) for a human is 0.004 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.45 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: Aust Govt Dept. of Health, Office of Chemical Safety, 'ADI List', March 2016). ADI for diquat is 0.002 mg/kg/day, NOEL 0.2 mg/kg/day.

## 12. Ecological information

<b>Persistence and degradability</b>	Paraquat and diquat are rapidly absorbed and inactivated by contact with soil. There is evidence of photodegradation in air.
<b>Known Harmful Effects on the Environment</b>	The product is a marine pollutant for sea transport.
<b>Acute Toxicity - Fish</b>	LC50 (96hr) for rainbow trout is 15 mg/l for paraquat dichloride LC50 (96hr) for rainbow trout is 39.2 mg/l for diquat dibromide

Infosafe No™ 3NUSD	Issue Date : August 2017	ISSUED by NUFARM
--------------------	--------------------------	------------------

Product Name **REVOLVER Herbicide**

Classified as hazardous

<b>Acute Toxicity - Daphnia</b>	EC50 (48hr) for daphnia is 1.2 mg/l for paraquat dichloride. EC50 (48hr) for daphnia is 2.2 mg/l for diquat dibromide.
<b>Acute Toxicity - Algae</b>	EC50 (72hr) for algae 0.32 mg/l for paraquat. EC50 (72hr) for algae >0.021 mg/l for diquat.
<b>Acute Toxicity - Other Organisms</b>	The following data is for the active ingredient, paraquat dichloride. LD50 for mallard duck is 199 mg/kg LD50 for bobwhite quail is 175 mg/kg Bees: Not toxic to bees. LD50 36 µg/bee. LD50 for mallard duck is 155 mg/kg for diquat

### 13. Disposal considerations

<b>Product Disposal</b>	On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemClear®).
<b>Container Disposal</b>	Do not use this container for any other purpose. Triple or preferably pressure rinse containers before disposal. Add rinsings to the spray tank. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, puncture or shred and bury containers in local authority landfill. If no landfill is available, bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt. Returnable containers: empty contents fully into application equipment. Replace cap, close all valves and return to the point of supply for refill or storage. drumMUSTER is the national program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical containers. If the label on your container carries the drumMUSTER symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program.

### 14. Transport information

<b>U.N. Number</b>	2922
<b>UN proper shipping name</b>	CORROSIVE LIQUID, TOXIC, N.O.S. - (Contains Paraquat and Diquat)
<b>Transport hazard class(es)</b>	8
<b>Sub.Risk</b>	6.1
<b>Hazchem Code</b>	2X
<b>Packaging Method</b>	3.8.6.1
<b>Packing Group</b>	III
<b>Storage and Transport EPG Number</b>	8C3
<b>IERG Number</b>	37
<b>UN Number (Sea Transport)</b>	2922
<b>IMO Class/Packing Group</b>	Class 8, subrisk 6.1; Packing Group III
<b>IMO Marine Pollutant</b>	Marine Pollutant
<b>IMO Proper Shipping Name</b>	CORROSIVE, LIQUID, TOXIC, N.O.S. (contains paraquat and diquat)

Infosafe No™ 3NUSD	Issue Date : August 2017	ISSUED by NUFARM
--------------------	--------------------------	------------------

Product Name **REVOLVER Herbicide**

Classified as hazardous

## 15. Regulatory information

<b>Regulatory Information</b>	WHS Schedule 11, item 40 ( corrosive to metals ), item 34 ( acute toxicity category 2 ).
<b>Poisons Schedule</b>	S7
<b>Packaging &amp; Labelling</b>	DANGEROUS POISON KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING CAN KILL IF SWALLOWED DO NOT PUT IN DRINK BOTTLES KEEP LOCKED UP
<b>Other Information</b>	This product is registered with the Australian Pesticides and Veterinary Medicines Authority (APVMA). APVMA product number: 59311.

## 16. Other Information

<b>Date of preparation or last revision of SDS</b>	Issued 28/08/2017 This SDS replaces document dated June 2017
<b>Contact Person/Point</b>	Normal Hours: Mrs Kathleen Marsh Phone: +61 3 9282 1000 After Hours: Shift Supervisor Phone: 1800 033 498
<b>Revisions Highlighted</b>	The SDS was reviewed. Various changes were made to the information. Section 1 - product code changed to 0954. ...End Of MSDS...

© Copyright ACOHS Pty Ltd

Copyright in the source code of the HTML, PDF, XML, XFO and any other electronic files rendered by an Infosafe system for Infosafe MSDS displayed is the intellectual property of Acohs Pty Ltd.

Copyright in the layout, presentation and appearance of each Infosafe MSDS displayed is the intellectual property of Acohs Pty Ltd. The compilation of MSDS's displayed is the intellectual property of Acohs Pty Ltd.

Copying of any MSDS displayed is permitted for personal use only and otherwise is not permitted. In particular the MSDS's displayed cannot be copied for the purpose of sale or licence or for inclusion as part of a collection of MSDS without the express written consent of Acohs Pty Ltd.