



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product Resolva Path & Patio Concentrate

Usage Herbicide

Manufacturer Westland Horticulture Ltd
14 Granville Industrial Estate
Granville Road
Dungannon
County Tyrone
BT70 1NJ

Email www.gardenhealth.com

Emergency Tel 08700 663566 (UK)

2. HAZARDS IDENTIFICATION

Classification of the Substance:

Classification under CHIP: N

Most important adverse effects: Very toxic to aquatic life with long lasting effects

Label Elements:

Under CHIP:

Hazard Symbol: Dangerous for the environment



Risk Phrases: R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment





3. COMPOSITION/INFORMATION ON INGREDIENTS

Description Herbicide containing 153g/l glyphosate and 4.5 g/l diquat as a soluble concentrate

Hazardous Ingredients

This product contains ingredients, substances, mixtures, impurities or stabilizing additives required to be declared under Article 18(2) of Regulation (EC) No 1272/2008.

EEC Annex I of Directive 67/548/EEC contains a list of harmonised classifications and labelling for substances or groups of substances and the following Risk Phrases/Safety phrases (where applicable) are relevant to anyone using or handling this product:

CAS Number	Active Ingredient	Concentration	Directive 67/548/EEC	
			Warning Symbols	'R' Phrase(s)
69254-40-6	Glyphosate Diammonium	16.2% W/W	 N	R51/53
68515-73-1	D-Glucopyranose, oligomeric, decyl octyl glycosides	5-15% W/W	 Xi	R41
85-00-7	Diquat Dibromide	0.7% W/W	  N T+	R22 R26 R36/37/38 R43 R48/25 R50/53

For the full text of the R phrases mentioned in this section, see section 16.

4. FIRST AID MEASURES

General Advice: Have the product container, label or Material Safety Data Sheet with you when calling a poison control center or physician, or going for treatment.

Inhalation: Move person to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or Poison Control Centre immediately.

Skin Contact: Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists call a physician.
Wash contaminated clothing before re-use.

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses and continue flushing.
Immediate medical attention is required.

Ingestion: If swallowed seek medical advice immediately and show container or label.
Do NOT induce vomiting.

Treatment (Medical Advice):
There is no specific antidote available.
Treat symptomatically



5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

- Extinguishing media – small fires: Use water spray, alcohol-resistant foam dry chemical or carbon dioxide
- .Extinguishing media – large fires: Alcohol resistant foam or Water spray

Extinguishing Media Which Must Not Be Used For Safety Reasons:

Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising From The Substance Or Mixture:

As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health

Special Protective Equipment For Fire Fighters:

Wear full protective clothing and self-contained breathing apparatus.

Further Information:

Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment And Emergency Procedures:

Refer to protective measures listed in sections 7 and 8.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.

Methods And Materials For Containment And Cleaning Up:

Contain Spillage, and then collect with non-combustible absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Additional Advice: If the product contaminates rivers and lakes or drains inform respective authorities.



7. HANDLING AND STORAGE

Handling:

- No special protective measures against fire required.
- Avoid contact with skin and eyes
- When using do not eat, drink or smoke
- For personal protection see Section 8

Storage:

- No special storage conditions required.
- Keep containers closed tightly in a dry, cool and well-ventilated place.
- Keep out of reach of children
- Keep away from food, drink and animal feeding stuffs
- Physically and chemically stable for at least two years when stored in the original unopened sales container at ambient temperatures.

Specific End Uses:

Use only as herbicide according to the instruction on the label

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Component(s)	Exposure Limit(s)	Type of exposure limit	Source
Glyphosate	10mg/m ³	8 h TWA	SYNGENTA
Diquat Dibromide	0.5 mg/m ³ 1 mg/m ³	8h TWA 15 min STEL	UK HSE

The following recommendations for exposure controls/personal protection are intended for the manufacture, formulation and packaging of the product

Exposure Controls

Engineering Measures: Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.
The extent of these protection measures depends on the actual risks in use.
If airborne mists or vapors are generated, use local exhaust ventilation controls.
Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.
Where necessary, seek additional occupational hygiene advice.



- Protective Measures:** The use of technical measures should always have priority over the use of personal protective equipment
When selecting personal protective equipment, seek appropriate professional advice
Personal protective equipment should be certified to appropriate standards
- Respiratory Protection:** No personal respiratory protective equipment normally required.
A particulate filter respirator may be necessary until effective technical measures are installed.
- Hand Protection:** Chemical resistant gloves are not usually required.
Select gloves based on the physical job requirements.
- Eye Protection:** Eye protection is not usually required
Follow any site specific eye protection policies
- Skin and Body Protection:** No special protective equipment required
Select skin and body protection based on the physical job requirements

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** Light brown liquid
Odour: Faint sweet

Other Properties:

	Value	Temperature	Method
pH	6.2 at 1% W/V	25°C	
Autoignition Temperature	>650°C		
Density	1.14 g/ml	20°C	
Viscosity, dynamic	6 mPa.s	20°C	

- Oxidising Properties:** Not oxidizing
Explosive Properties: Not explosive

10. STABILITY AND REACTIVITY

- Hazardous Decomposition:** Combustion or thermal decomposition will evolve toxic or irritant vapours
- Hazardous Reactions:** None known. Hazardous polymerization does not occur.
- Conditions To Avoid:** No information available, stable under normal conditions.



11. TOXICOLOGICAL INFORMATION

The toxicological data has been taken from products of similar composition

Acute Oral Toxicity:	LD50 Median lethal dose female rat, >5,000 mg/kg
Acute Inhalation Toxicity:	LC50 Median lethal concentration male and female Rat, >2.56 mg/l, 4h
Acute Dermal Toxicity:	LD50 Median lethal dose male and female Rat, >2,000 mg/kg
Skin Irritation:	Rabbit: Non Irritating
Eye Irritation:	Rabbit: Mildly Irritating
Sensitization:	Guinea pig: not a skin sensitizer in animal tests.
Long Term Toxicity:	<p>Glyphosate diammonium Did not show mutagenic, carcinogenic or teratogenic effects in animal experiments.</p> <p>Diquat Dibromide Did not show mutagenic, carcinogenic, teratogenic or reproductive toxicity effects in animal experiments Ocular effects (cataracts) have been reported following long term oral exposure of laboratory animals.</p>

12. ECOLOGICAL INFORMATION

Persistence and Degradability

- **Stability in Water:** Glyphosate diammonium: Degradation half life: 302 d. Persistent in water.
Diquat dibromide: Degradation half life: >30 d. Persistent in water
- **Stability in Soil:** Glyphosate diammonium: Degradation half life: 1.4-19 d. Not persistent in soil.
Diquat dibromide: Degradation half life: 11-41 d. Persistent in soil
- **Mobility in Soil:** Glyphosate and Diquat are immobile in soil.
- **Bioaccumulative Potential:** Diquat has low potential to bioaccumulate



Toxicity

The toxicity data has been derived from components

- **Toxicity To Fish:** LC50 *Oncorhynchus mykiss* (rainbow trout), >100 mg/l, 96h
- **Toxicity To Aquatic Invertebrates:** EC50 *Daphnia magna* (water flea), 61 mg/l 48h
GHS Classification: Category 3
- **Toxicity To Aquatic Plants:** EbC50 *Pseudokirchneriella subcapitata* (green algae), 2.8 mg/l, 96 h
ErC50 *Pseudokirchneriella subcapitata* (green algae), 4.9 mg/l, 96 h
ErC50 *Navicula Pelliculosa* (freshwater diatom), 0.3 mg/l, 72h
GHS Classification: Category 1

13. DISPOSAL CONSIDERATIONS

Product: Do not contaminate ponds, waterways or ditches with chemical or used container. Do not dispose of waste into sewer. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated Packaging: Empty remaining contents. Triple rinse containers. The rinse water should be added to the final spray solution. It must not be put down the drain, sink or toilet. Completely empty containers can be put in the bin or disposed of in compliance with applicable local regulations. Do not reuse empty containers.

14. TRANSPORT INFORMATION

Land Transport (ADR /RID) UN Number: 3082
Class: 9
Labels: 9
Packaging Group: III
Proper shipping name: ENVIRONMENTAL HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (DIQUAT DIBROMIDE)
Environmentally Hazardous Substance

Sea Transport (IMDG) UN Number: 3082
Class: 9
Labels: 9
Packaging Group: III
Proper shipping name: ENVIRONMENTAL HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (DIQUAT DIBROMIDE)
Marine Pollutant



Air Transport (IATA-DGR) UN Number: 3082
Class: 9
Labels: 9
Packaging Group: III
Proper shipping name: ENVIRONMENTAL HAZARDOUS SUBSTANCE,
LIQUID, N.O.S. (DIQUAT DIBROMIDE)

15. REGULATORY INFORMATION

Registration Numbers: MAPP 15439
PCS 04489

Labelling According to EC Directives

Symbol: N Dangerous for the environment

R-Phrases

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S- Phrases

S2 Keep out of the reach of children

S13 Keep away from food, drink and animal feedingstuffs

S20/21 When using do not eat, drink or smoke

S35 This material and its container must be disposed of in a safe way

S57 Use appropriate containment to avoid environmental contamination

Note

The product is classified and labeled in accordance with Directive 1999/45/EC

Special Labelling of Certain Preparations:

To avoid risks to man and the environment, comply with the instructions for use

GHS Labelling

Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 2nd revised edition

Pictogram



Signal Word: Warning

Hazard Statements: H410 Very toxic to aquatic life with long lasting effects



Precautionary Statements: P102 Keep out of reach of children
P270 Do not eat, drink or smoke when using this product
P391 Collect spillage
P501 Dispose of contents/ container to an approved waste disposal plant

Remarks Classified using all GHS hazard classes and categories. Where the GHS contains options, the most conservative option has been chosen. Regional or national implementation of GHS may not implement all hazard classes and categories

16. OTHER INFORMATION

Recommended uses and restrictions: Follow the instructions

Full text of R Phrases referred to under Section 3:

R22 Harmful if swallowed
R26 Very toxic by inhalation
R36/37/38 Irritating to eyes, respiratory system and skin
R41 Risk of serious damage to eyes
R43 May cause sensitisation by skin contact
R48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Abbreviations and Acronyms

CAS No	Chemicals Abstract Service Registry Number
MAPP	Ministerially Approved Pesticide Product
PCS	Pesticide Control Service
Regulation (EC) No 1272/2008	Classification, Labelling and packaging
Directive 67/548/EEC	Dangerous Substances Directive
Directive 91/689/EEC	Directive on Hazardous Waste
IMDG Code	International Maritime Dangerous Goods Code
ADR	International carriage of dangerous Goods by Road

Further information

Before using this product, ensure that you read and understand its label

The information in this Safety Data Sheet has been prepared in accordance with the applicable European Directives. The information is believed to be correct at the time of going to press. Always read the label and product information before use. For further information please contact Westland Horticulture Ltd, 14 Granville Industrial Estate, Granville Road, Dungannon, County Tyrone, BT70 1NJ.