

MATERIAL SAFETY DATA SHEET

Section 1 Chemical product and company identification

Product trade name: Forward Glyphosate 450 Herbicide

Common name: Glyphosate 450g/L SL

Formulation: soluble concentrate

Use: Control of annual and perennial grasses and broad-leaved weeds, pre-harvest, in cereals, peas, beans, oilseed rape, flax and mustard; control of annual and perennial grasses and broad-leaved weeds in stubble and post-planting/pre-emergence of many crops; as a directed spray in vines and olives; in orchards, pasture, forestry and industrial weed control.

Company name and address: Forward Australia Pty Ltd.

715/8 Point Street, Pyrmont

NSW 2009

Telephone Number: 0488 992 823

Section 2 Composition / Information on ingredients

Composition	CAS	Concentration(g/L)
Glyphosate present as the Isopropylamine salt	1071-83-6	450
Other ingredients		Balance

Section 3 Hazards summarizing

GHS Classification : Eye damage - category 1
Hazardous to the aquatic environment (chronic) - category 2

Signal Word : DANGER

Hazard Statement : H318: Causes serious eye damage.
H411: Toxic to aquatic life with long lasting effects.

Hazard pictograms :



Section 4 First-aid measures

Skin contact :	Remove contaminated clothing, shoes and leather goods, Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap.
Eyes Contact :	Immediately flush the eyes with gently flowing, lukewarm water or saline solution for 20 minutes, occasionally lifting the upper and lower lids. Obtain medical attention if necessary.
Inhalation :	Remove source of contamination or move victim to fresh air. Keep victim warm and at rest. Treat symptomatically and supportively. Obtain medical advice if necessary.
Ingestion :	Wash mouth out with water. If vomiting occurs, give more water to drink to assist dilution.
Other information :	Treat symptomatically and supportively as and when required.

Section 5 Fire-fighting measures

Extinguishing media :	For small fires, use foam, carbon dioxide or dry powder extinguishant. For large fires, use foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers.
Specific hazards :	Drums exposed to flames or high temperature must be cooled with dispersed water spray and removed from the affected area if possible.
Special fire protection equipment for fire fighters :	The personnel directly participating in fire-fighting operations should wear proper, light clothes, protecting the skin (gas proof) and be provided with equipment isolating the airways because of the toxic burning products, such as: hydrogen chloride, carbon monoxide and phosgene.

Section 6 Accidental release measures

Personal Precautions :	Avoid Contact with skin and eyes. Do not breathe in fumes.
Environmental Precautions :	Do not allow entering drains or watercourses. When the product contaminates public waters, inform appropriate authorities immediately in accordance with local regulations.
Occupational spill :	For small dry spills, sweep up with damp earth or sand or other suitable absorbents, such as sawdust, taking care not to raise a dust cloud. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. For large spills contact the manufacturer. Contain liquid far ahead of spill. Contain spillage and contaminated water and soil for subsequent disposal. Do not flush spilled material into drains. Keep spectators away and upwind.

Section 7 Handling and storage

Handling :	Keep product in original tightly closed container. Remove sources of naked flame or sparks. Avoid contact with eyes, prolonged contact with skin, and inhalation of dust and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Remove clothing immediately if the product gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.
Storage :	Keep out of reach of unauthorized persons, children and animals. Store in its original labeled container in shaded, well-ventilated area, away from heat, sparks and other sources of ignition. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

Section 8 Exposure controls/Personal protection

Engineering control measures :

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Only spark –resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

Personal protective equipment :

Respirator : An approved full-face respirator suitable for protection from dusts and mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed. Comply with occupational safety, environmental, fire, and other applicable regulations.

Clothing : Employee must wear appropriate protective (impervious) clothing, boots and equipment to prevent repeated or prolonged skin contact with this substance. Do not wear leather clothing.

Gloves : Employee must wear appropriate chemical resistant Protective gloves to prevent contact with this substance.

Eye protection : The use of safety goggles is recommended. **Emergency eye wash**: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

Section 9 Physical and chemical properties

Form : Liquid.

Colour : Blue

Odour : Faint amine odour

Boiling point : approx. 100 °C aqueous solution

Flash point : Not applicable

Autoignition temp. : Not self-igniting

Vapour Pressure : Not available.

Density : 1.2 g/m³

Solubility : Soluble in water.

pH-value (quant.) : 4.5 – 5.5

Oxidising Properties : Not applicable.

Section 10 Stability and reactivity

Stability :	Stable under normal, dry storage conditions.
Conditions to be avoided :	Heat, sunlight.
Materials to be avoided :	Strong alkalis and alkaline material.
Hazardous decomposition products :	Thermal decomposition may lead release of: Carbon oxides, Sulphur oxides, Nitrogen oxides and Hydrogen fluoride. Hazardous polymerization is not possible.

Section 11 Toxicological information

LD ₅₀ Acute Oral	>5000 mg/kg in rats
LD ₅₀ Acute Dermal	>5000mg/kg in rats
LC ₅₀ Acute Inhalation	>1.3mg/L in rats
Skin Irritation	Slight irritation
Eye Irritation	High irritation
Dermal sensitisation	No sensitizing to Guinea pigs
Mutagenicity	Not mугenic

Section 12 Ecological information

Birds Acute oral LD₅₀ for bobwhite quail >3851 mg/kg. Dietary LC₅₀ (5 d) for quail and ducks >4640 mg/kg diet.

Fish LC₅₀ (96 h) for trout 86, bluegill sunfish 120, harlequin fish 168, sheepshead minnows >1000 mg/l.

Daphnia LC₅₀ (48 h) 780 mg/l.

Algae E_bC₅₀ (72 h) for green algae (*Selenastrum capricornutum*) 485 mg/l, (7 d) 13.8 mg/l, E_rC₅₀ (72 h) 460 mg/l; EC₅₀ (96 h) for marine algae (*Skeletonema costatum*) 1.3 mg/l, (7 d) 0.64 mg/l; EC₅₀ (7 d) for diatom (*Navicula pelliculosa*) 42, blue-green algae (*Anabaena flos-aquae*) 15 mg/l.

Other aquatic spp. LC₅₀ (96 h) for mysid shrimps (*Mysidopsis bahia*) >1000, grass shrimps 281, fiddler crabs 934 mg/l. EC₅₀ (96 h) for sea urchins >1000 mg/l; (14 d) for *Lemna gibba* 25.5 mg/l; (48 h) for *Litoria moorei* tadpoles 111 mg/l.

Bees LD₅₀ (48 h) (contact) >100 µg/bee; (oral) 100 µg/bee.

Other beneficial spp. Formulation of glyphosate had no effects on carabid beetles; harmless to slightly harmful to green lacewing, parasite species, mites/spiders and insects, except moderately harmful to *Bembidion lampros* (EU Guidelines).

Section 13 Disposal

Pesticide disposal	Contaminated absorbents, used containers, surplus product, etc., should be burnt at > 1000°C in an incinerator, preferably designed for pesticide disposal,
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Container disposal

or buried in an approved landfill. Comply with local legislation applying to waste disposal.

1 Emptied containers retain product residues. Observe all labelled safeguards until container is cleaned, reconditioned, or destroyed. Combustible containers should be disposed of in pesticide incinerators or buried in an approved landfill.

2 Noncombustible containers must first be triplerinsed with water.

3 Containers that are not to be reused and should be punctured and transported to a scrap metal facility for recycling or disposal.

Section 14 Transport information

UN No.: 3082

ROAD

ADR/IRD

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Glyphosate 45%)

Class: 9

Packing group: III

IMDG/IMO

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Glyphosate 45%)

Class: 9

Packaging group: III

Marine pollutant: Yes

AIR/IATA

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Glyphosate 45%)

Class: 9

Packaging Group: III

Section 15 regulatory information

Risk phrases

R 36 Irritating to eyes.

R 52 Harmful to aquatic organisms.

R 54 Toxic to flora.

Safety Phrases

S 2 Keep out of reach children.

S 24/25 Avoid contact with skin and eyes.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 61 Avoid release to the environment

Section 16 Other information

The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or nonstandard uses of neither the product nor where instructions or recommendations are not followed. The information contained in this safety data sheet is given in good faith. Forward Australia Pty Ltd. will not be liable for any claims or damages arising out of use of this information.