SAFETY DATA SHEET

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

1. Identification

1.1 GHS Product identifier

Product name Glyphosate-potassium

1.2 Other means of identification

Product number -

Other names N-(phosphonomethyl)glycine

1.3 Recommended use of the chemical and restrictions on use

Identified uses For industry use only. Herbicide

1.4 Supplier's details

Initial Supplier	WinField United Canada, ULC 101-302 Wellman Lane Saskatoon, SK S7T-0J1, CANADA
Manufactured For	Winfield Solutions, LLC P.O. Box 64589 St. Paul, MN 55164-0589, UNITED STATES
Emergency Telephone Numbers	**FOR MEDICAL EMERGENCY: 1-877-424-7452 (24 hrs)** **FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL: CHEMTREC 1-800-424-9300 (24 hrs)**
Non-Emergency Business Inquiries	1-888-875-4769 Mon – Fri 8am – 5pm (Central Standard Time)

2. Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity (Dermal irritation): Mild irritation (category 3);

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning

Hazard statement(s) H316 Causes mild skin irritation

Precautionary statement(s)

Prevention P280 Wear protective gloves/protective clothing/eye protection/face protection.

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Response	P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P391 Collect spillage.
Storage	None
Disposal	P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

None

3. Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Glyphosate-potassium	Glyphosate	39600-42-5	none	660g/l

4. First-aid measures

4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Remove to fresh air. Get medical attention if symptoms occur.

In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

In case of eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

If swallowed

Rinse mouth. Do NOT induce vomiting.

4.2 Most important symptoms/effects, acute and delayed

SYMPTOMS: None known.

ACUTE/CHRONIC HAZARDS: May cause cancer. See Section 11 for additional Toxicological Information.

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep

patient quiet and maintain normal body temperature. Obtain medical attention. /Glyphosate (Roundup) and Related Compounds.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

To fight fire use powder, alcohol-resistant foam, water spray, carbon dioxide.

5.2 Specific hazards arising from the chemical

None known based on information supplied.

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Sweep spilled substance into plastic containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2Conditions for safe storage, including any incompatibilities

Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Well closed. Do NOT store or transport in containers made from galvanized steel or unlined steel. Store in an area without drain or sewer access. Safe Storage of Pesticides. Always store pesticides in their original containers, complete with labels that list ingredients, directions for use, and first aid steps in case of accidental poisoning. Never store pesticides in cabinets with or near food, animal feed, or medical supplies. Do not store pesticides in places where flooding is possible or in places where they might spill or leak into wells, drains, ground water, or surface water.

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies.

Biological limit values

No data available.

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Thermal hazards

No data available.

9. Physical and chemical properties

Physical state	liquid
Color	Pale yellow clear liquid
Odor	Odorless
pH	4.0 - 5.8
Formaldehyde, (g/kg)	≤ 0.3
Nitroso Glyphosate, (mg/kg)	≤ 0.3
Low Temp stability(0±2℃,7 days)	Qualified
Thermal stability, (54±2℃,14 days)	Qualified

10. Stability and reactivity

10.1 Reactivity

None under normal use conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

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May produce hydrogen gas if this product comes into contact with galvanized steel or unlined steel.

10.4 Conditions to avoid

Incompatible materials.

10.5 Incompatible materials

Oxidizing agents, Galvanized steel, Unlined steel.

10.6 Hazardous decomposition products

When heated to decomposition it emits very toxic fumes of /nitrogen and phosphorus oxides/.

11. Toxicological information

Acute toxicity

Oral: LD_{50} in Wistar rats 5000mg/kg body weight. Category 5 or Unclassified.
Inhalation: LC_{50} in male and female wistar rats ＞5.415mg/L. Category 5 or Unclassified.
Dermal: LD_{50} in wistar rats ＞2000mg/kg body weight. Category 5 or Unclassified.
Eye irritation: No sign of systemic toxicity in any animal. Not classified as an eye irritant.
Dermal irritation: Mild irritation (category 3);
Skin sensitization: Not considered as positive;

Carcinogenicity

Classification - D; not classifiable as to human carcinogenicity. Basis - Inadequate evidence for oncogenicity in animals. Glyphosate was originally classified as C, possible human carcinogen, on the basis of increased incidence of renal tumors in mice. Following independent review of the slides the classification was changed to D on the basis of a lack of statistical significance and uncertainty as to a treatment-related effect.

12. Ecological information

12.1 Toxicity

Acute oral toxicity test-Japanese quail, OECD 223;
Statistically no significant difference in the feed consumption of birds was observed at the dose level of 2000mg glyphosate potassium 660g/l SL/kg body weight between days 0-3, 4-7 and 8-14 when compared with the control group.

Fish, Acute toxicity test, OECD 203;
The study was conducted as a limit test in which the 96h LC_{50} of Glyphosate potassium 660g/l was found to be greater than 100.0mg a.i./L.

Honeybee acute contact toxicity study, OECD 214;
The median contact lethal dose (LD50) of glyphosate potassium 660g/l SL to honeybee was found to be greater t han 207.4ug/bee, equivalent to 100ug a.i./bee.

12.2 Persistence and degradability

AEROBIC: When glyphosate was incubated in William's silt loam soil (pH 6.4, 1.9% organic matter), 19% degradation occurred in 9 days. No degradation was noted in sterilized soil (1). In shake-flask metabolism studies, glyphosate was rapidly and completely biodegraded in the presence of soil microorganisms under both aerobic and anaerobic conditions (2). After 28 days under aerobic conditions, 45-55% of the glyphosate was mineralized using Ray silt loam soil, Lintonia sandy loam

soil, and Drummer silty clay loam soil. Norfolk sandy loam mineralized glyphosate at a much slower, but still significant, rate. In greenhouse experiments, the half-lives of glyphosate in Ray, Drummer and Norfolk soil were 3, 27, and 130 days, respectively (2). The biodegradation half-life of glyphosate in a Kickapoo sandy loam and Dupo silt loam soil were 1.85 and 2.06 days, respectively, under aerobic conditions. The major degradation product observed was aminomethyl phosphonic acid. The aerobic and anaerobic biodegradation half-life of glyphosate in a flooded silty clay loam sediment was 7 and 8.1 days, respectively (3).

12.3 Bioaccumulative potential

In controlled laboratory studies using glyphosate at levels 3 to 4 times the recommended application rates, BCF values in fish tissue 10-14 days post application ranged from 0.2 to 0.3(1). A BCF value of 0.52 (whole body) was measured in bluegill (Lepomis macrochirus) exposed for 28 days (2). BCF values of 0.38 for edible tissues and 0.63 for non-edible tissues have been reported (3). According to a classification scheme (4), these BCF data suggest that bioconcentration in aquatic organisms is low (SRC).

12.4 Mobility in soil

When applied to clay loam or muck soil at an application rate of 56 kg/ha, glyphosate was rapidly inactivated. This inactivation was probably the result of reversible adsorption to clay and organic matter. Iron and aluminum clays and organic matter adsorbed more glyphosate than sodium and calcium clays and was readily bound to kaolinite, illite, bentonite, charcoal and muck but not to ethyl cellulose. (14)C-Labeled glyphosate was degraded in soil and (14) CO_2 was released.

12.5 Other adverse effects

No data available

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13. Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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14. Transport information

14.1 UN Number

ADR/RID: Not regulated IMDG: Not regulated IATA: Not regulated

14.2 UN Proper Shipping Name

ADR/RID: Not regulated

IMDG: Not regulated

IATA: Not regulated

14.3 Transport hazard class(es)

ADR/RID: Not regulated IMDG: Not regulated IATA: Not regulated

14.4 Packing group, if applicable

ADR/RID: Not regulated IMDG: Not regulated IATA: Not regulated

14.5 Environmental hazards

ADR/RID: Not regulated IMDG: Not regulated IATA: Not regulated

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15. Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Glyphosate-potassium	Glyphosate	39600-42-5	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

16. Other information

Information on revision

Creation Date 3 DECEMBER 2024

Revision Date

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.