**SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION**

**Product identifier:** STONEWALL™
**Product use:** Herbicide.
**PCP Reg. No.:** 31655.01

**Supplier’s name and address:**
Winfield United Canada, ULC
101-302 Wellman Lane
Saskatoon, Saskatchewan S7T 0J1

**Emergency Telephone #:**
- 24-Hour Emergency Contact: 1-(306) 222-6978
- Local Emergency Contact: 1-(888)-975-4769

Customer Information Number: 1-888-976-4769

**SECTION 2 — HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**

Clear, yellow, viscous liquid, odourless to slight amine-like odor.

Caution! Poison

Reacts with materials made of iron, galvanized steel and unlined steel, liberating hydrogen, which may ignite.

May cause eye irritation. Contains material which may cause liver and kidney effects.

Dangerous for the environment. Toxic to flora (plants). May be harmful to aquatic organisms.

***POTENTIAL HEALTH EFFECTS***

**Likely routes of exposure:** Skin contact, eye contact, inhalation

**Inhalation:** Inhalation may cause irritation to the nose, throat and upper respiratory tract. Symptoms may include coughing and sneezing.

**Skin contact:** Direct skin contact may cause slight irritation.

**Eye contact:** Direct eye contact may cause moderate irritation and reversible eye injury. Symptoms may include pain, redness and tearing.

**Ingestion:** This product is not expected to be harmful by oral administration route. Ingestion of large amounts could cause irritation. Symptoms may include nausea, vomiting and diarrhea. Effects of long-term (chronic) exposure: Prolonged or repeated overexposure may cause liver and kidney effects.

**Carcinogenicity:** See TOXICOLOGICAL INFORMATION (Section 11).

**Other important hazards:** See TOXICOLOGICAL INFORMATION (Section 11).

**Potential environmental effects:** This product is a herbicide and therefore toxic to all green plants. The product is harmful to fish, aquatic invertebrates and aquatic plants. See ECOLOGICAL INFORMATION (Section 12).

**SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No.</th>
<th>Percentages (%)</th>
<th>ACGIH TLV (mg/m³)</th>
<th>OSHA PEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Glyphosate potassium salt</td>
<td>70901-12-1</td>
<td>48.8</td>
<td>N.D.</td>
<td>N.D.</td>
</tr>
<tr>
<td><strong>Surfactant, water and other minor components</strong></td>
<td></td>
<td>51.2</td>
<td>N.D.</td>
<td>N.D.</td>
</tr>
</tbody>
</table>

*Note: The product contains about 540 g/L of the active ingredient Glyphosate as its potassium salt

**Note: The specific chemical identity is being withheld because it is trade secret information.
SECTION 4 — FIRST AID MEASURES

**IF SWALLOWED:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

**IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

SECTION 5 — FIRE FIGHTING MEASURES

**Flash point:** Does not flash.

**Extinguishing media:** Recommended: Water, foam, dry chemical, carbon dioxide (CO2)

**Unusual fire and explosion hazards:** Minimize use of water to prevent environmental contamination. Environmental precautions: see section 6.

**Hazardous products of combustion:** Carbon monoxide (CO), phosphorus oxides (P_xO_y), nitrogen oxides (NO_x)

**Fire fighting equipment:** Self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

**Personal precautions:** Keep all non-essential people away from affected area.

**Environmental precautions** SMALL QUANTITIES: Low environmental hazard. LARGE QUANTITIES: Minimise spread. Keep out of drains, sewers, ditches and water ways.

**Methods for cleaning up:** Absorb in earth, sand or absorbent material. Dig up heavily contaminated soil. Collect in containers for disposal. Refer to section 7 for types of containers. Flush residues with small quantities of water. Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material. Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

SECTION 7 — HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

**Handling:** Avoid breathing vapour or mist. Avoid contact with eyes, skin and clothing. When using do not eat, drink or smoke. Wash hands thoroughly after handling or contact. Wash contaminated clothing before re-use. Thoroughly clean equipment after use. Do not contaminate drains, sewers and water ways when disposing of equipment rinse water. Refer to section 13 of the safety data sheet for disposal of rinse water. Emptied containers retain vapour and product residue.

FOLLOW LABELLED WARNINGS EVEN AFTER CONTAINER IS EMTIED.
**Storage:** Compatible materials for storage: stainless steel, aluminium, fibreglass, plastic, glass lining
Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10. Keep out of reach of children. Keep away from food, drink and animal feed. Keep container tightly closed in a cool, well-ventilated place. Keep only in the original container. Partial crystallization may occur on prolonged storage below the minimum storage temperature. If frozen, place in a warm room and shake frequently to put back into solution.

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**SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Airborne exposure limits**

<table>
<thead>
<tr>
<th>Components</th>
<th>Exposure Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium salt of glyphosate</td>
<td>No specific occupational exposure limit has been established.</td>
</tr>
<tr>
<td>Surfactant and minor formulating ingredients</td>
<td>No specific occupational exposure limit has been established.</td>
</tr>
</tbody>
</table>

**Engineering controls:** Provide local exhaust ventilation.

**Eye protection:** If there is potential for contact: Wear chemical goggles.

**Skin protection:** Wear chemical resistant gloves. Applicators and other handlers must wear:
- Wear long sleeved shirt, long pants and shoes with socks.
- Wear chemical resistant clothing/footwear.

**Respiratory protection:** If airborne exposure is excessive: Wear respirator. Full facepiece/hood/helmet respirator replaces need for chemical goggles.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

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**SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES**

**Physical state and appearance:** Clear, yellow, viscous liquid.

**Odor:** Odorless to slight amine-like odor.

**Specific gravity** (water = 1): 1.165 g/cm³ @ 68°F/20°C.

**Solubility in water:** The product is miscible with water.

**pH:** 4.4 @ 68°F / 20°C (1% aqueous solution).

**Boiling point:** 235°F / 113°C

**Freezing point:** <32°F / 0°C.

**Vapour density** (Air=1.0): N/Ap

**Percent Volatile by Weight:** N/Av

**Evaporation rate** (n-BuAc=1.0): N/Av

**Vapour pressure:** 1.75 x 10⁻⁷ mmHg (1.31 x 10⁻⁵ Pa) @ 77°F / 25°C (free Glyphosate acid).

**Coefficient of n-Octanol/water distribution:** P = 4.5 x 10⁻⁶ (free Glyphosate acid); Log P = -3.3 (free Glyphosate acid)

**Viscosity:** 43 centistokes @ 68°F / 20°C; 18 centistokes @ 104°F / 40°C.

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.
SECTION 10 — REACTIVITY AND STABILITY DATA

Stability: Stable under normal conditions of handling and storage.

Oxidizing properties: No data.

Materials to avoid/ Reactivity: Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

Hazardous decomposition: Thermal decomposition: Hazardous products of combustion: see section 5.

Self-accelerating decomposition temperature (SADT): No data.

SECTION 11 — TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals. Data obtained on similar products and on components are summarized below.

Similar formulation

Acute oral toxicity
Rat, LD50: > 5,000 mg/kg body weight
Practically non-toxic. FIFRA category IV.

Acute dermal toxicity
Rat, LD50: > 5,000 mg/kg body weight
Practically non-toxic. FIFRA category IV.

Skin irritation
Rabbit, 3 animals, OECD 404 test:
Days to heal: 14
Primary Irritation Index (PII): 2.2/8.0
Moderate irritation. FIFRA category III.

Eye irritation
Rabbit, 3 animals, OECD 405 test: Days to heal: 10
Moderate irritation.
FIFRA category III.

Acute inhalation toxicity
Rat, LC50, 4 hours, aerosol: > 1.20 mg/L
Slightly toxic. FIFRA category III.
No mortality. For purposes of the inhalation test, product was artificially aerosolized. Since this material will not become aerosolized to a hazardous concentration during transport, it is classified as non-hazardous under the transportation regulations in accordance with 2.6.2.2.4.7(b) and (c) of the UN Recommendations on the Transport of Dangerous Goods.

Skin sensitization
Guinea pig, 3-induction Buehler test: Positive incidence: 0 %

N-(phosphonomethyl)glycine; (glyphosate)

Mutagenicity
In vitro and in vivo mutagenicity test(s): Not mutagenic.

Repeated dose toxicity
Rabbit, dermal, 21 days:
NOAEL toxicity: > 5,000 mg/kg body weight/day
Target organs/systems: none
Other effects: none

**Rat, oral, 3 months:**
NOAEL toxicity: > 20,000 mg/kg diet
Target organs/systems: none
Other effects: none

**Chronic effects/ carcinogenicity**

**Rat, oral, 24 months:**
NOAEL toxicity: ~ 8,000 mg/kg diet
Target organs/systems: eyes
Other effects: decrease of body weight gain, histopathologic effects
NOEL tumour: > 20,000 ppm
Tumours: none

**Toxicity to reproduction/ fertility**

**Rat, oral, 2 generations:**
NOAEL toxicity: 10,000 ppm
NOAEL reproduction: > 30,000 mg/kg diet
Target organs/systems in parents: none
Other effects in parents: decrease of body weight gain
Target organs/systems in pups: none
Other effects in pups: decrease of body weight gain
Effects on offspring only observed with maternal toxicity.

**Developmental toxicity/ teratogenicity**

**Rat, oral, 6 - 19 days of gestation:**
NOAEL toxicity: 1,000 mg/kg body weight
NOAEL development: 1,000 mg/kg body weight
Other effects in mother animal: decrease of body weight gain, decrease of survival Developmental effects: weight loss, post-implantation loss, delayed ossification Effects on offspring only observed with maternal toxicity.

**Rabbit, oral, 6 - 27 days of gestation:**
NOAEL toxicity: 175 mg/kg body weight NOAEL development: 175 mg/kg body weight Target organs/systems in mother animal: none
Other effects in mother animal: decrease of survival Developmental effects: none

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**SECTION 12 — ECOLOGICAL INFORMATION**

This section is intended for use by ecotoxicologists and other environmental specialists. Data obtained on similar products and on components are summarized below.

**Similar formulation**

**Aquatic toxicity, fish**

**Rainbow trout (Oncorhynchus mykiss):**
Acute toxicity, 96 hours, semi-static, LC50: 3.13 mg/L
Moderately toxic.

**Aquatic toxicity, algae/ aquatic plants**

**Green algae (Selenastrum capricornutum):**
Acute toxicity, 72 hours, static, EbC50 (biomass): 0.124 mg/L
Highly toxic.

**Arthropod toxicity**

**Honey bee (Apis mellifera):**
Contact, 48 hours, LD50: > 250 µg/bee
Practically non-toxic.

**Honey bee (Apis mellifera):**
Oral, 48 hours, LD50: > 238.8 µg/bee
Practically non-toxic.

**Soil organism toxicity, invertebrates**

Earthworm (Eisenia fetida):
Acute toxicity, 14 days, LC50: > 10,000 mg/kg dry soil
Practically non-toxic.

**Soil organism toxicity, microorganisms**

Nitrogen and carbon transformation test:
40 L/ha, 28 days: Less than 25% effect on nitrogen or carbon transformation processes in soil.

**Similar formulation**

**Aquatic toxicity, invertebrates**

Water flea (Daphnia magna):
Acute toxicity, 48 hours, static, EC50: 2.0 mg/L Moderately toxic.

**N-(phosphonomethyl)glycine; (glyphosate)**

**Avian toxicity**

Bobwhite quail (Colinus virginianus):
Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet
No more than slightly toxic.

Mallard duck (Anas platyrhynchos):
Dietary toxicity, 5 days, LC50: > 4,640 mg/kg diet
No more than slightly toxic.

**Bobwhite quail (Colinus virginianus):**
Acute oral toxicity, single dose, LD50: > 3,851 mg/kg body weight
Practically non-toxic.

**Bioaccumulation**

Bluegill sunfish (Lepomis macrochirus):
Whole fish: BCF: < 1
No significant bioaccumulation is expected.

**Dissipation**

**Soil, field:**
Half life: 2 - 174 days
Koc: 884 - 60,000 L/kg
Adsorbs strongly to soil.

**Water, aerobic:**
Half life: < 7 days

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**SECTION 13 — DISPOSAL CONSIDERATIONS**

**Product:** Keep out of drains, sewers, ditches and water ways. Recycle if appropriate facilities/equipment available. Burn in proper incinerator. Follow all local/regional/national/international regulations.

**Container:** See the individual container label for disposal information. Emptied containers retain vapour and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Empty packaging completely. Triple or pressure rinse empty containers. Do NOT contaminate water when disposing of rinse waters. Ensure packaging cannot be reused. Do NOT re-use containers.
Store for collection by approved waste disposal service. Recycle if appropriate facilities/equipment available. Follow all local/regional/national/international regulations. Use handling recommendations in Section 7 and personal protection recommendations in Section 8.
SECTION 14 — TRANSPORTATION INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Not hazardous under the applicable DOT, ICAO/IATA, IMO, TDG and Mexican regulations.

SECTION 15 — REGULATORY INFORMATION

PCPA registered.

SECTION 16 — OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data. Follow all local/regional/national/international regulations.

HMIS Rating: 2 Health; 1 Flammability; 1 Reactivity

0 = Minimal hazard, 1 = Slight hazard, 2 = Moderate hazard, 3 = Severe hazard, 4 = Extreme hazard

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), TLV-C (Threshold Limit Value - Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

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This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE Pest Management Regulatory (PMRA)- APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products are regulated by product labeling and provincial legislation, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the PMRA- approved label.

Prepared by: Winfield United Canada, ULC
Telephone #: 888-975-4769
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Revision date: March 2, 2018