

# MONSANTO COMPANY

## Safety Data Sheet

For regulatory purposes only

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1. Product identifier

#### Roundup PowerMAX® 3 Herbicide

##### 1.1.1. Chemical name

Not applicable.

##### 1.1.2. Synonyms

None.

##### 1.1.3. EPA Reg. No.

524-659

#### 1.2. Product use

Herbicide

#### 1.3. Company

MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167

**Telephone:** 800-332-3111, **Fax:** 314-694-5557

**E-mail:** safety.datasheet@monsanto.com

#### 1.4. Emergency telephone number (24 hours/7 days)

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call  
CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or  
Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).  
800-332-3111

### 2. HAZARDS IDENTIFICATION

#### 2.1. Classification

Classification according to OSHA Hazard Communication Standard, 29 CFR 1910.1200 (2012)

Eye damage/irritation - Category 2A

Acute toxicity, inhalation - Category 4

#### 2.2. Label elements

##### Hazard pictogram/pictograms



##### Signal word

Warning

##### Hazard statement/statements

H319	Causes serious eye irritation.
H332	Harmful if inhaled.
<b>Precautionary statement/statements</b>	
P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing mist, vapours or spray.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305	IF IN EYES:
P351+338	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313	If eye irritation persists: Get medical advice/attention.
P304+340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.

### 2.3. Other hazards

Not applicable.

### 2.4. Appearance and odour (colour/form/odour)

Clear yellow-Amber /Liquid / Odourless

Refer to section 11 for toxicological and section 12 for environmental information.

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Active ingredient

Potassium salt of N-(phosphonomethyl)glycine; {Potassium salt of glyphosate}

### Composition

COMPONENT	CAS No.	% by weight (approximate)
Potassium salt of glyphosate	70901-12-1	51.2
Surfactant(s), water and minor formulating ingredients		48.8

The specific chemical identity and/or concentration range is being withheld because it is trade secret information of Monsanto Company.

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## 4. FIRST AID MEASURES

Use personal protection recommended in section 8.

### 4.1. Description of first aid measures

**4.1.1. Eye contact:** If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

**4.1.2. Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**4.1.3. Inhalation:** If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.

**4.1.4. Ingestion:** Call poison control center 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 the poison center or doctor. Do not give anything by mouth to an unconscious person.

**4.2. Most important symptoms and effects, both acute and delayed**

**4.2.1. Eye contact, short term:** Causes serious eye irritation.

**4.2.2. Skin contact, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.

**4.2.3. Inhalation, short term:** Harmful if inhaled.

**4.2.4. Single ingestion:** Not expected to produce significant adverse effects when recommended use instructions are followed.

**4.3. Indication of any immediate medical attention and special treatment needed**

**4.3.1. Medical conditions aggravated by exposure:** None.

**4.3.2. Advice to doctors:** This product is not an inhibitor of cholinesterase.

**4.3.3. Antidote:** Treatment with atropine and oximes is not indicated.

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**5. FIRE-FIGHTING MEASURES**

**5.1. Extinguishing media**

**5.1.1. Recommended:** Water, Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam

**5.2. Special hazards**

**5.2.1. Unusual fire and explosion hazards**

Minimise use of water to prevent environmental contamination.

Environmental precautions: see section 6.

**5.2.2. Hazardous products of combustion**

Carbon monoxide (CO), Phosphorus oxides (P<sub>x</sub>O<sub>y</sub>), Nitrogen oxides (NO<sub>x</sub>)

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

**5.4. Flash point**

Does not flash.

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**6. ACCIDENTAL RELEASE MEASURES**

**6.1. Environmental precautions**

SMALL QUANTITIES:

Low environmental hazard.

LARGE QUANTITIES:

Minimise spread.

Keep out of drains, sewers, ditches and water ways.

**6.2. Methods for cleaning up**

SMALL QUANTITIES:

Flush spill area with water.  
LARGE QUANTITIES:  
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.

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## 7. HANDLING AND STORAGE

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

### 7.1. Precautions for safe handling

Avoid contact with eyes, skin and clothing. When using do not eat, drink or smoke. Avoid breathing vapour or mist. 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.

### 7.2. Conditions for safe storage

Minimum storage temperature: -30 °C

Maximum storage temperature: 60 °C

**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 only in the original container.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Airborne exposure limits

Components	Exposure Guidelines
Potassium salt of glyphosate	No specific occupational exposure limit has been established.
Surfactant(s), water and minor formulating ingredients	No specific occupational exposure limit has been established.

### 8.2. Engineering controls:

Provide local exhaust ventilation.

### 8.3. Recommendations for personal protective equipment

#### 8.3.1. Eye protection:

If there is significant potential for contact: Wear chemical goggles. Applicators and other handlers must wear eye protection.

#### 8.3.2. Skin protection:

Wear chemical resistant gloves. If there is potential for contact: Wear face shield. Wear chemical resistant clothing/footwear.

#### 8.3.3. 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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

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.

Colour/colour range:	Clear yellow - Amber
Odour:	Odourless
Form:	Liquid
Physical form changes (melting, boiling, etc.):	
Melting point:	No data.
Boiling point:	Not applicable.
Flash point:	Does not flash.
Explosive properties:	No explosive properties.
Auto ignition temperature:	No data.
Self-accelerating decomposition temperature (SADT):	No data.
Oxidizing properties:	none
Specific gravity:	1.39 @ 20 °C / 15.6 °C
Vapour pressure:	No significant volatility; aqueous solution.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	Not applicable.
Kinematic viscosity:	150 mm <sup>2</sup> /s
Density:	1.384 g/cm <sup>3</sup> @ 25 °C
Solubility:	Water: Soluble
pH:	4.7
Partition coefficient:	log Pow: -3.2 25 °C (Glyphosate)

## 10. STABILITY AND REACTIVITY

### 10.1. Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

### 10.2. Stability

Stable under normal conditions of handling and storage.

### 10.3. Possibility of hazardous reactions

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

### 10.4. Incompatible materials

galvanised steel unlined mild steel see section 10.  
Compatible materials for storage: see section 7.2.

### 10.5. Hazardous decomposition

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

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## 11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

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

**Most important symptoms and effects, both acute and delayed**

**Eye contact, short term:** Causes serious eye irritation.

**Skin contact, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.

**Inhalation, short term:** Harmful if inhaled.

**Single ingestion:** Not expected to produce significant adverse effects when recommended use instructions are followed.

**Indication of any immediate medical attention and special treatment needed**

**Medical conditions aggravated by exposure:** None.

**Advice to doctors:** This product is not an inhibitor of cholinesterase.

**Antidote:** Treatment with atropine and oximes is not indicated.

Data obtained on product and components are summarized below.

**Acute oral toxicity**

**Rat, LD50:** > 5,000 mg/kg body weight  
No mortality.

**Acute dermal toxicity**

**Rat, LD50:** > 5,000 mg/kg body weight  
No mortality.

**Acute inhalation toxicity**

**Rat, LC50, 4 hours, aerosol:** > 2.23 mg/L

**Skin irritation**

**Rabbit, 3 animals:**

Days to heal: 7

Primary Irritation Index (PII): 0.7/8.0

Slight irritation.

**Eye irritation**

**Rabbit, 3 animals:**

Days to heal: 10

Moderate irritation.

**Skin sensitization**

**Guinea pig, 3-induction Buehler test:**

Negative.

**N-(phosphonomethyl)glycine; {glyphosate acid}**

**Genotoxicity**

Not genotoxic.

### **Carcinogenicity**

Not carcinogenic in rats or mice.

Listed as Category 2A by the International Agency for Research on Cancer (IARC) but our expert opinion is that classification as a carcinogen is not warranted.

### **Reproductive/Developmental Toxicity**

Developmental effects in rats and rabbits only in the presence of significant maternal toxicity.

Reproductive effects in rats only in the presence of significant maternal toxicity.

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## **12. ECOLOGICAL INFORMATION**

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on a similar glyphosate formulation and/or glyphosate are summarized below.

### **Similar formulation**

#### **Aquatic toxicity, fish**

##### **Bluegill sunfish (*Lepomis macrochirus*):**

Acute toxicity, 96 hours, static, LC50: 5.2 mg/L  
Moderately toxic.

##### **Common carp (*Cyprinus carpio*):**

Acute toxicity, 96 hours, static, LC50: 4.0 mg/L  
Moderately toxic.

#### **Aquatic toxicity, invertebrates**

##### **Water flea (*Daphnia magna*):**

Acute toxicity, 48 hours, static, EC50: 8.0 mg/L  
Moderately toxic.

### **Similar formulation**

#### **Aquatic toxicity, algae/aquatic plants**

##### **Green algae (*Selenastrum capricornutum*):**

Acute toxicity, 72 hours, static, EC50: 0.46 mg/L  
Highly toxic.

#### **Arthropod toxicity**

##### **Honey bee (*Apis mellifera*):**

Oral, 48 hours, LD50: > 281 µg/bee  
Practically non-toxic.

##### **Honey bee (*Apis mellifera*):**

Contact, 48 hours, LD50: > 273 µg/bee  
Practically non-toxic.

### **N-(phosphonomethyl)glycine; {glyphosate acid}**

#### **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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**13. DISPOSAL CONSIDERATIONS**

**13.1. Waste treatment methods**

**13.1.1. 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.

**13.1.2. 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.

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**14. TRANSPORT INFORMATION**

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

**14.1. US Dept. of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 105-180)**

Proper Shipping Name (Technical Name if required):	Not regulated for domestic ground transportation. ()
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**14.2. IMDG Code**

**14.2.1. Note**

Use description for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

**14.3. IATA/ICAO**

**14.3.1. Note**

Use description for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

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**15. REGULATORY INFORMATION**

**15.1. Environmental Protection Agency**

**15.1.1. TSCA Inventory**

Exempt

**15.1.2. SARA Title III Rules**



Section 311/312 Hazard Categories:

See OSHA Hazard Communication Standard Categories in Section 2.1

Section 302 Extremely Hazardous Substances: Not applicable.

Section 313 Toxic Chemical(s): Not applicable.

#### 15.1.3. CERCLA Reportable quantity

Not applicable.

#### 15.1.4. Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)

This chemical is a pesticide product regulated by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION!

CAUSES MODERATE EYE IRRITATION

Acute oral toxicity: FIFRA category IV.

Acute dermal toxicity: FIFRA category IV.

Acute inhalation toxicity: FIFRA category IV.

Skin irritation: FIFRA category IV.

Eye irritation: FIFRA category III.

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## 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.

Please consult supplier if further information is needed.

In this document the British spelling was applied.

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), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), 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), STOT SE (Specific Target Organ Toxicity, Single Exposure), STOT RE (Specific Target Organ Toxicity, Repeated Exposure), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS 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 the EPA under the authority of the

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, 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 EPA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company or any of its subsidiaries makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company or any of its subsidiaries be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.