

MONSANTO

MATERIAL SAFETY DATA

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: RoundUp ProDry™ Herbicide

MSDS Number: S00013143

Date: February 24, 2000

Chemical Name: Not applicable, formulated product

EPA Registration No: 524-505

MONSANTO COMPANY, 800 N. LINDBERGH BLVD., ST. LOUIS, MO 63167

FOR MEDICAL EMERGENCY, CALL COLLECT, DAY OR NIGHT: (314) 694-4000

For additional non-emergency information, call: 1-800-332-3111 (CONTACT: Richard Kramer)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No.	% by weight
Active Ingredient:		
Glyphosate, N-(phosphonomethyl) glycine, in the form of its monium salt	114370-14-8	71.4
Inert Ingredients:	+	<u>28.6</u>
		<u>100.0</u>

* Hazardous chemical(s) under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

+ The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance and Odor: granules with non distinct odor

WARNING STATEMENTS

CAUTION

HARMFUL IF SWALLOWED

CAUSES MODERATE EYE IRRITATION

Avoid contact with eyes or clothing

POTENTIAL HEALTH EFFECTS

LIKELY ROUTES OF EXPOSURE: inhalation, eye and skin contact

EYE CONTACT: This material may cause modest pain, redness and tearing based on toxicity studies.

SKIN CONTACT: This material is practically nontoxic and slightly irritating based on toxicity studies.

INHALATION: This material is practically nontoxic if inhaled based on toxicity studies.

INGESTION: Slightly toxic based on toxicity studies.

Refer to Section 11 for toxicological information.

4. FIRST AID MEASURES

IF IN EYES: Immediately flush with plenty of water. If easy to do, remove any contact lenses. Remove material from skin and clothing. Get medical attention if irritation persists.

IF ON SKIN: Immediately first aid is not likely to be required. However, this material can be removed with soap and water. Wash heavily contaminated clothing before reuse.

IF INHALED: If symptoms occur, remove to fresh air. Get medical attention if breathing difficulty develops. Remove material from eyes, skin and clothing.

IF SWALLOWED: Rinse mouth thoroughly with water. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Get medical attention. Contact a Poison Control center. Do NOT induce vomiting unless directed by medical personnel. Remove material from eyes, skin and clothing.

NOTE: For additional human emergency first aid or treatment guidance, call collect, anytime, day or night (314) 694-4000.

5. FIRE FIGHTING MEASURES

FLASH POINT: None

HAZARDOUS PRODUCTS OF COMBUSTION: None known

EXTINGUISHING MEDIA: In case of fire, use water spray (fog), foam, dry chemical, or CO₂.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known

FIRE FIGHTING EQUIPMENT: Fire fighters and others exposed to products of combustion should wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

In case of spill, sweep, scoop or vacuum and place in a chemical waste container or plastic-lined metal drum. Refer to Section 13 for disposal information and Section 15 for reportable quantity information.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with eyes, skin and clothing. Wash thoroughly with after handling.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned, or destroyed. **DO NOT REUSE THIS CONTAINER.**

STORAGE: Definitive data is not available but product is expected to stable under normal conditions of storage and handling. Store in a cool, well ventilated place away from foodstuffs, reducing agents and acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: These materials may cause eye irritation. Wear chemical goggles when direct eye contact with material is likely.

SKIN PROTECTION: Although this material does not present a significant skin concern, minimize skin contamination by following good industrial practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

RESPIRATORY PROTECTION: Avoid breathing dust. Use NIOSH equipment approved for vapor/mist/dust when airborne exposure is excessive. Consult respirator manufacturer to determine appropriate type of equipment for given application. The respirator use limitations specified by NIOSH or the manufacturer must be observed. Respiratory protection programs must be in compliance with 29 CFR 1910.134.

VENTILATION: Provide ventilation to minimize exposure. The use of local mechanical exhaust ventilation at sources of air contamination such as open process equipment is recommended.

AIRBORNE EXPOSURE LIMITS:

Product/Component	OSHA PEL	ACGIH TLV
RoundUp ProDry™ Herbicide	None established	None established

OSHA and ACGIH have not established specific exposure limits for this material. However, OSHA and ACGIH have established limits for nuisance dusts which are the least stringent exposure limits applicable to dusts. The OSHA PEL/TWA for nuisance dusts is 15 mg/m³total dust, and 5 mg/m³respirable dust. The ACGIH TLV/TWA for nuisance dusts is 10 mg/m³ total dust.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	granules
Odor:	non-distinct

NOTE: 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.

10. STABILITY AND REACTIVITY

Stability: Product is stable under normal conditions of storage and handling.

Materials to Avoid: None known

Hazardous Decomposition Products: None known

Hazardous Polymerization: Will not occur
Incompatibility: None known

11. TOXICOLOGICAL INFORMATION

Monsanto has conducted studies on this material as shown below:

Rat Oral LD50: 5827 mg/kg (LD50 female rats = 3794 mg/kg), slightly toxic, FIFRA Category III
Rat Dermal LD50: >5000 mg/kg, practically nontoxic, FIFRA Category IV
Rat Inhalation LC50: >2.1 mg/liter, practically non-toxic, FIFRA Category IV
Eye Irritation: moderately irritating, FIFRA Category III
Skin Irritation: Slightly irritating, FIFRA Category IV, FIFRA P11 = 1.58/B.0
Dermal Sensitization: negative

COMPONENTS:

Data from laboratory studies conducted by Monsanto and from the scientific literature on components of this material:

Glyphosate:

Additional toxicity information is available on glyphosate, the active herbicidal ingredient of this material. Following repeated exposures (90-days) to glyphosate in their feed, decreased weight gains were noted at the highest test level in mice, while no treatment-related effects occurred in rats. Following repeated skin exposure (3 weeks) to glyphosate, slight skin irritation was the primary effect observed in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure. There was no evidence of effects on the nervous system, including delayed effects in chickens (repeat oral doses) or cholinesterase inhibition in rats (single oral doses). Reduced body weight gain and effects on liver tissues were observed with long-term (2-year) feeding of glyphosate to mice at high-dose levels. Reduced body weight gain and eye changes were observed at the high-dose level in one long-term (2 year) feeding study with rats, while no treatment-related effects occurred in a second study. No adverse effects were observed in feeding studies with dogs. Glyphosate did not produce tumors in any of these studies. Based on the results from the chronic studies, EPA has classified glyphosate in category E (evidence of non-carcinogenicity for humans). No birth defects were noted in rats and rabbits given glyphosate orally during pregnancy, even at amounts which produced adverse effects on the mothers. Glyphosate was fed continuously to rats at very high dose levels for 2 successive generations. Toxicity was reported in offspring from the high dose, a level which also produced adverse effects on the mothers. In a 3 generation study conducted at lower dose levels, no effects were seen on the ability of male or female rats to reproduce. Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells.

Surfactant:

The surfactant component of this material is reported to cause irritation to the eyes and skin and may contribute to the irritation potential reported for this herbicide. Ingestion may produce gastrointestinal irritation, nausea, vomiting, and diarrhea.

12. ECOLOGICAL INFORMATION

Monsanto has not conducted environmental toxicity studies with this product. Toxicity data for a similar formulation are summarized below.

Aquatic Invertebrates:	48-hr EC ₅₀ <i>Daphnia magna</i> : 42 mg/L	Slightly Toxic
Coldwater Fish:	96-hr LC ₅₀ Rainbow trout: 20 mg/L	Slightly Toxic
Terrestrial Invertebrates:	14-d LC ₅₀ Earthworm: >1,250 mg/kg dry soil	Practically Nontoxic

The results of degradation and bioconcentration studies with a similar formulation indicate that the active ingredient is rapidly adsorbed to soil, readily biodegrades in soil and water, and does not bioaccumulate.

13. DISPOSAL CONSIDERATIONS

Dispose of by incineration or recycle in accordance with local, state and federal regulations. Consult your attorney or appropriate regulatory officials for information on such disposal. Wastes resulting from the use of these products that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures.

Do not reuse container. Observe all label safeguards until container is triple rinsed. Emptied container retains vapor and product residue. Triple rinse container, then puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal. This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

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.

This product is not hazardous under the applicable DOT, ICAO/IATA, or IMDG regulations.

15. REGULATORY INFORMATION

TSCA inventory: all ingredients are listed.

SARA Hazard Notification

Hazard Categories Under Title III Rules (40 CFR 370): Immediate, delayed

16. OTHER INFORMATION

Reason for revision: New

Supersedes MSDS dated: April 6, 1999

RoundUp ProDry is a trademark of Monsanto Company

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-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 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.

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