

MATERIAL SAFETY DATA SHEET

DATE PREPARED: 01/27/1997



MSDS No: 6045

Roundup Ready-To-Use Weed & Grass Killer

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Roundup Ready-To-Use Weed & Grass Killer**PRODUCT DESCRIPTION:** Herbicide

MANUFACTURER

The SOLARIS Group

of Monsanto Company

P.O. Box 5008

San Ramon, CA 94583-0808

24 HR. EMERGENCY TELEPHONE NUMBERS

Emergency Phone 800-454-2333**EPA REG. NO.:** 239-2638A **PN:** 6035-B

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS Registry #</u>
Glyphosate, Isopropylamine salt of N-(phosphonomethyl) glycine	0.96	38641-94-0
INERT INGREDIENTS	~ 99.04	

"Inert Ingredients" is a term defined by the U.S. Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act (40 CFR 158.153). It refers to any substance, other than an active ingredient, which is intentionally added to a pesticide product. Some inert ingredients may be hazardous chemicals, as defined by the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). The hazards associated with these inert ingredients have been included in this document.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Yellow or off-white hazy liquid.

IMMEDIATE CONCERNS: - WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING

- CAUSES EYE IRRITATION
- AVOID CONTACT WITH EYES OR CLOTHING
- KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

EYES: This substance causes moderate irritation to the eyes. Eye contact may include discomfort, tearing, swelling, redness, and blurred vision. See Toxicological Information, section 11.

SKIN: This substance is not expected to cause skin irritation.

INGESTION: If swallowed, this product may cause gastrointestinal tract irritation.

INHALATION: If inhaled, this substance is considered practically non-toxic to internal organs. This substance may be irritating if inhaled. Read the Toxicological Information section (11) of this document for more information.

COMMENTS HEALTH: Inhalation and skin contact are expected to be the primary routes of occupational exposure to ROUNDUP. Occupational exposure to this material has not been reported to cause significant adverse health effects. However, swallowing of a similar, but more concentrated formulation, has been reported to produce gastrointestinal discomfort, nausea, vomiting and diarrhea.

4. FIRST AID MEASURES

EYES: Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Call a physician if irritation persists.

SKIN: No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.

INGESTION: If swallowed, immediately telephone a poison control center, emergency treatment center or a physician for advice. DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then immediately take person and product container, with label, to an emergency treatment center.

INHALATION: Since this material is not expected to be an immediate inhalation problem, no first aid procedures are required. If respiratory discomfort or irritation occurs,

move the person to fresh air. See a doctor if discomfort or irritation continues.

ADDITIONAL INFORMATION: Medical Information: Call day or night, 1-800-454-2333.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: >212°F TAG CC

EXTINGUISHING MEDIA: Water spray, foam, CO₂, dry chemical or any class B extinguishing agent.

FIRE FIGHTING PROCEDURES: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of normal products of combustion or oxygen deficiency. Equipment should be thoroughly cleaned after use. Read the entire document.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Soak up spilled material with paper towels and discard in trash.

LARGE SPILL: Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgite, bentonite or other absorbent clays. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under Section 13. "DISPOSAL". Thoroughly scrub floor or other impervious surface with a strong industrial type detergent solution and rinse with water.

For liquid spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. If disposal is required then refer to Section 13 "DISPOSAL" for instructions.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Section 13 "Disposal". Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs or feed by storage or disposal.

GENERAL PROCEDURES: Observe all protection and safety precautions when cleaning up spills -- see Section 8. "EXPOSURE CONTROLS/PERSONAL PROTECTION". For help with any spill, leak, fire or exposure involving this material, call day or night (800) 454-2333.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Keep pesticide in original container. For containers larger than 24 oz.: Place sprayer nozzle under handle on container so the sprayer is not below level of contents of container to prevent leakage. Store in a secure, preferably locked, storage area. Protect container from freezing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: No special ventilation is necessary.

PERSONAL PROTECTION

EYES AND FACE: For application of product in accordance with label instructions, no special eye protection is needed.

Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

SKIN: Although this product 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: Avoid breathing vapor or mist.

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

<u>Chemical Name</u>	<u>EXPOSURE LIMITS</u>		
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>ACGIH STEL</u>
Pelargonic Acid	None	None	None
Potassium Hydroxide Solution	None	None	None
Ammonium Sulfate	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

APPEARANCE: Yellow or off-white hazy liquid.

pH: ~6.7 to 6.9

SOLUBILITY IN WATER: Soluble

SPECIFIC GRAVITY: 1.01 gr/cc at 20°C

VISCOSITY: Same as water.

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

HAZARDOUS DECOMPOSITION: None.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: Found to be moderately irritating to rabbit eyes; irritation cleared by test day 7 (EPA FIFRA Toxicity Category - III).

DERMAL LD₅₀: Practically non-toxic, (Rat) LD50 >5.0 gm/Kg; EPA FIFRA toxicity category - IV. Nonirritating to skin (Rabbit); EPA FIFRA toxicity category - IV.

ORAL LD₅₀: Practically non-toxic, (Rat LD50 >5000 mg/Kg). EPA FIFRA Toxicity Category - IV.

INHALATION LC₅₀: Practically non-toxic, (Rat 4-hr LC50 >10mg/L). EPA FIFRA toxicity category - IV.

SENSITIZATION: No evidence of allergic skin reactions was observed in guinea pigs following repeated skin exposure.

CHRONIC: Data from glyphosate laboratory toxicology studies were conducted with a formulation comprised of 62% isopropylamine salt of glyphosate (MON 0139).

Rabbits - 3 week dermal: Repeated daily primarily resulted in slight skin irritation.

Dogs - 6 month feeding: Only slight body weight changes noted.

Rats - 90 day feeding: No treatment related effects.

Mice - 90 day feeding: Decreased weight gains at the high dose level group animals.

CARCINOGENICITY:

CARCINOGENICITY COMMENTS: Glyphosate: Not a carcinogen. Glyphosate

did not produce tumors in any of the long-term toxicology studies. EPA has classified glyphosate in category "E" (Evidence of noncarcinogenicity for humans).

Mice: 2-year feeding study. Reduced body weight gain and effects on liver tissues were observed at high dose levels.

Rats: 2-year feeding study. Reduced body weight gain and eye changes were observed at the high dose level in one study, while no treatment related effects occurred in a second study conducted at lower dose levels.

Dogs: No adverse effects were observed in feeding studies with dogs.

TERATOGENICITY: Glyphosate: No evidence of teratogenic effects. Results of rat and rabbit teratology studies indicate that no birth defects were noted. This included dose levels of glyphosate that were maternally toxic.

REPRODUCTIVE TOXIN: Glyphosate: No evidence of adverse reproductive effects. 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.

MUTAGENICITY: Glyphosate: Glyphosate has not produced any genetic changes in various mutagenicity tests involving animals and animal or bacterial cells.

COMMENTS: See Section 16 for definition of EPA FIFRA toxicity categories.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters.

13. DISPOSAL CONSIDERATIONS

FOR LARGE SPILLS: Material collected that cannot be reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.

PRODUCT DISPOSAL: The Solaris Group is committed to responsible environmental practices and recommends that all of the product be used up, carefully following all label directions and precautions.

If necessary to dispose of partially filled product container, then securely wrap it in several layers of newspaper and discard in trash.

EMPTY CONTAINER: Do not reuse spray bottle except for refill in accordance with directions on the ROUNDUP Quick Stick Grass & Weed label. If not used for refill, rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Not Regulated

PRIMARY HAZARD CLASS/DIVISION: None

UN/NA NUMBER: None

PACKING GROUP: No

U.S. SURFACE FREIGHT CLASS: Tree or weed killing compounds, NOI,
Density of 20 lbs. or greater per cu. ft.

AIR (ICAO/IATA)

PROPER SHIPPING NAME: Not Regulated

SPECIAL SHIPPING NOTES: The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA				
ACUTE: YES	CHRONIC: NO	FIRE: NO	REACTIVITY: NO	PRESSURE GENERATING: NO

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: All non FIFRA regulated components are on the US EPA's TSCA Inventory List.

16. OTHER INFORMATION

HMIS CODES**FIRE: 0 HEALTH: 1 REACTIVITY: 0 PROTECTION: -****NFPA CODES****FIRE: 0 HEALTH: 1 REACTIVITY: 0 SPECIAL: -****APPROVAL DATE:** 05/19/1997**REVISION SUMMARY** Revision #: 3

This MSDS replaces the September 27, 1995 MSDS. Any changes in information are as follows:

In Section 1

Prepared By Date Prepared EPA Product Number

In Section 4

Additional Information (text)

In Section 8

Skin Protection (text) Eyes-Face Protection (text) Respiratory Protection (text)

In Section 9

(pH) (From) (pH) (To) Specific Gravity (From) Density (text)

In Section 10

Hazardous Polymerization (Y/N)?

In Section 11

Acute Eye (text) Dermal LD50 (text) Chronic (text) Carcinogenicity (text) Teratology (text) Reproduction (text) Mutagenicity (text) Toxicological (text) Section 11 Footnotes Sensitization (text)

In Section 15

Accute

In Section 16

HMIS Health Manufacturer Supplemental Notes (text)

MANUFACTURER SUPPLEMENTAL NOTES: EPA FIFRA (Federal Insecticide, Fungicide and Rodenticide Act) Toxicity Categories: The EPA toxicity categories are based on the results of the acute toxicology studies. The toxicology findings are compared to the FIFRA criteria to determine the product label signal word, precautionary and first aid statements. The EPA FIFRA toxicity category summary:

EPA FIFRA Product Label Toxicity Rating

Toxicity Category Signal Word

I DANGER Most toxic and irritating
II WARNING
III CAUTION
IV CAUTION Least toxic and irritating

COMMENTS: For additional information concerning this product, call the SOLARIS Groups Consumer Helpline at 800-225-2883.

MANUFACTURER DISCLAIMER: This Material Safety Data Sheet (MSDS) contains health, safety and environmental information for you and your employees. It does not replace the precautionary language, use directions, or the storage and disposal information found on the product label. Information contained in this MSDS will help you to prepare for emergency response and to meet community right-to-know, emergency response and reporting requirements under SARA Title III and many other laws. Emergency response agencies and health care providers will also find this additional information useful.

Use of this product is regulated by the U.S. Environmental Protection Agency (EPA) through the approved label copy. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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 and The Solaris Group make no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company or The Solaris Group 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 WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.