

MATERIAL SAFETY DATA SHEET

DATE PREPARED: 10/31/2000

MSDS No: 7071

Roundup® Weed & Grass Killer Concentrate

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Roundup® Weed & Grass Killer Concentrate

PRODUCT DESCRIPTION: HERBICIDE

MANUFACTURER

Monsanto Company
Lawn & Garden Products
P.O. Box 1750
Columbus, OH 43216

24 HR. EMERGENCY TELEPHONE NUMBERS

Emergency Phone: 1-800-225-2883

EPA REG. NO.: 71995-26 **PN:** 7038

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS#</u>
Glyphosate, isopropylamine salt	25	38641-94-0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Light amber liquid

IMMEDIATE CONCERNS: CAUSES EYE IRRITATION

AVOID CONTACT WITH EYES OR CLOTHING

WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING

KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

EYES: Eye contact may cause discomfort, tearing, swelling, redness, and blurred vision. See Toxicology Information, section 11.

SKIN: This substance is not expected to cause prolonged or significant skin irritation. If

absorbed through the skin, this substance is considered practically non-toxic to internal organs. This product is not expected to cause allergic skin reaction. See Toxicology Information, section 11.

INGESTION: Ingestion may produce irritation of the digestive tract as demonstrated by signs and symptoms of mouth membrane irritation, nausea, vomiting and diarrhea. See Toxicology Information, section 11.

INHALATION: Overexposure to spray mist may result in minor irritation of the upper respiratory tract. See Toxicology Information, section 11.

4. FIRST AID MEASURES

EYES: If in eyes, immediately flush with plenty of water. Get medical attention if irritation persists.

SKIN: No first aid procedures are required. Wash skin thoroughly with soap and water after handling. 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: 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, 1-800-225-2883

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: None

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

HAZARDOUS COMBUSTION PRODUCTS: This material will not burn.

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. 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.

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) 225-2883.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Store this product only in its original container in a secured storage area. Protect container from freezing.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: No special ventilation is necessary.

PERSONAL PROTECTION

EYES AND FACE: Workers handling the concentrate should wear chemical goggles to prevent eye contact during mixing/transfer operations or other activities where there is potential for eye contact with the concentrated product. The wearing of goggles is not required during use of this product in accordance with label instruction.

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: For Handling the Concentrated Product: Avoid breathing vapor or mist. This product concentrate is not likely to pose an airborne exposure concern during

manufacture or packaging. In the event of abnormal exposure conditions, use NIOSH approved equipment. Air purifying elements for protection against organic vapor and dust/mist approved for pesticides is recommended. Full facepiece replaces the need for chemical goggles. Observe respiratory use limitations specified by the manufacturers. Respiratory protection programs must comply with 29 CFR 1910.134.

For Use of Product in accordance with label instructions: Respirators are not required for use of this product in accordance with label instructions.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Practically odorless to slight amine-like odor

COLOR: Amber to yellow liquid

SOLUBILITY IN WATER: Soluble

DENSITY: 1.1006 g/ml

VISCOSITY: No Data Available

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

STABILITY: Product is stable for at least 5 years under normal conditions of warehouse storage.

INCOMPATIBLE MATERIALS: Mix, spray, apply and store solutions of this product only in stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers.

DO NOT MIX, APPLY OR STORE THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED OR UNLINED STEEL (EXCEPT STAINLESS STEEL) SPRAYERS, because the product and such containers can react to produce a highly combustible mixture of hydrogen gas. This buildup of hydrogen gas in a closed container can create enough pressure to cause the container to rupture, or can flash or explode, causing serious personal injury, if ignited by open flame, spark, welders torch, lit cigarette or any other ignition source.

11. TOXICOLOGICAL INFORMATION

ACUTE

EYES: Rabbit - moderately irritating, irritation cleared by test day 7.
EPA FIFRA toxicity category - III.

DERMAL LD₅₀ : Rat = > 5.0 g/kg. EPA FIFRA toxicity category - IV.

SKIN IRRITATION: Rabbit - slightly irritating. EPA FIFRA toxicity category - IV.

ORAL LD₅₀ : Rat = >5.0 g/kg.

EPA FIFRA toxicity category - IV.

INHALATION LC₅₀ : Rat - 4 hour inhalation exposure = >2.9 mg/liter.

EPA FIFRA toxicity category - IV.

SENSITIZATION: Guinea pig - no evidence of allergic skin reactions.

SUBCHRONIC: 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.

Additional toxicity information is available on glyphosate, the active herbicidal ingredient of MON 0139.

Rats - 90 day feeding: No treatment related effects.

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

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Dogs - 6 month feeding: Only slight body weight changes noted.
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Mice - 90 day feeding: Decreased weight gains at the high dose level group animals.

CARCINOGENICITY:

CARCINOGENICITY COMMENTS: GLYPHOSATE: Glyphosate is not considered to be 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.

NEUROTOXICITY: GLYPHOSATE: There was no evidence of nervous system toxicity, including delayed induced peripheral neuropathy in chickens (repeated oral dosing) or cholinesterase inhibition in rats (single oral dosing).

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

ENVIRONMENTAL DATA: Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters.

ECOTOXICOLOGICAL INFORMATION: Available ecotoxicity data for similar formulations suggest that this product would be slightly to moderately toxic to fish and practically nontoxic to avian species and honeybees. The results of degradation and bioconcentration studies with the active ingredient in this product indicate that it is rapidly adsorbed to soil, readily biodegrades in soil and water, and does not bioaccumulate.

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: Securely wrap partially filled or empty container in several layers of newspaper and discard in trash. Never pour product down any drain.

EMPTY CONTAINER: Do not reuse container. 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: None

U.S. SURFACE FREIGHT CLASS: Weed killing compounds, NOBIN.

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

311/312 HAZARD CATEGORIES: Immediate

313 REPORTABLE INGREDIENTS: None

TITLE III NOTES: Immediate (acute) health hazard: Product is moderately irritating to the eyes.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

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

STATE REGULATIONS

PROPOSITION 65 STATEMENT: No ingredients on list.

16. OTHER INFORMATION

HMIS CODES

FIRE: 0 HEALTH: 1 REACTIVITY: 0

NFPA CODES

FIRE: 0 HEALTH: 1 REACTIVITY: 0

APPROVAL DATE: 10/31/2000

REVISION SUMMARY New MSDS

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 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 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 determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company 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.**