
The MSDS format adheres to U.S. standards and regulatory requirements and may not meet regulatory requirements in other countries.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience are gained.

"DuPont" GLYPHOSATE HERBICIDE

M0000440

Revised 20-MAR-2000

Printed 19-APR-2000

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont
1007 Market Street
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515
Transport Emergency : CHEMTREC 1-800-424-9300
Medical Emergency : 1-800-441-3637

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
GLYPHOSATE Glyphosate, N-(phosphonomethyl)glycine, in the forms of its isopropylamine salt Inert Ingredients:	1071-83-6	41
Inert Ingredient Component ETHOXYLATED TALLOWAMINES	61791-26-2	59

HAZARDS IDENTIFICATION

Emergency Overview

APPEARANCE AND ODOR: Clear, viscous amber-colored solution

WARNING STATEMENTS:

Keep out of the reach of children.

WARNING!

CAUSES SUBSTANTIAL BUT TEMPORARY EYE INJURY.

HARMFUL IF SWALLOWED OR INHALED.

Do not get in eyes or on clothing.

Avoid breathing vapor or spray mist.

Potential Health Effects

EYE

May cause pain, redness and tearing based on toxicity studies.

SKIN

No more than slightly toxic and no more than slightly irritating based on toxicity studies.

INGESTION

No more than slightly toxic based on toxicity studies. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed. Ingestion of similar formulations has been reported to produce gastrointestinal discomfort with irritation of the mouth, nausea, vomiting and diarrhea. Oral ingestion of large quantities of one similar product has been reported to result in hypotension and lung edema.

INHALATION

No more than slightly toxic if inhaled based on toxicity studies.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses

of water. Never give anything by mouth to an unconscious person.
Call a physician.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : >200 F (>93 C)

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Wear self-contained breathing apparatus. Wear full protective equipment.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spill Clean Up

Small Spills - For a spill less than one gallon on floor or other impervious surface, soak up with towels or other absorbent material and discard in the trash. Clean the spill area with soap and water and rinse the area thoroughly.

Large liquid spills - on the floor or other impervious surface should be contained or diked and then absorbed with attapulgate, bentonite or other absorbent clays. Collect the contaminated absorbent, place in a metal drum and dipsose of in accordance with the instructions provided under Disposal. Thoroughly scrub floor or other impervious surface with a strong industrial detergent and rinse with water.

Large spills that soak into the ground should be dug up, placed in metal drums and disposed of in accordance with instructions provided under Disposal. Contact appropriate state agency when considering a land spreading disposal option.

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 Disposal. Any recovered spilled liquid should be similarly collected and disposed of.

HANDLING AND STORAGE

Handling (Personnel)

Do not get in eyes, on skin or clothing. Avoid breathing vapors or mist. Wash thoroughly after handling. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. Wash clothing after use.

Handling (Physical Aspects)

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.

Do not contaminate water when disposing of equipment washwaters.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal Protective Equipment

EYE/FACE PROTECTION: Wear safety glasses or coverall chemical splash goggles.

RESPIRATORS: Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

PROTECTIVE CLOTHING: Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

RESPIRATORS: Wear a NIOSH approved respirator if there is potential for exposure to airborne dusts, mists or vapors.

Exposure Guidelines

Exposure Limits

"DuPont" GLYPHOSATE HERBICIDE

PEL (OSHA) : None Established
TLV (ACGIH) : None Established

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Color : Amber, Clear.
Odor : Odorless.
Form : Liquid.
pH : 4.7
Specific Gravity : 1.17

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

Spray solutions of this product should be mixed, stored, or applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined containers.

Do not mix, store or apply this product or spray solutions of the product in galvanized or unlined steel (except stainless steel) containers or spray tanks. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Polymerization

Does not occur. This product can react with caustic (basic) materials to liberate heat. This is not a polymerization but rather a chemical neutralization in an acid base reaction.

TOXICOLOGICAL INFORMATION

Animal Data

Single exposure (acute) studies indicate:

Oral - practically non-toxic Rat LD50 > 5000 mg/kg

Dermal - practically non-toxic Rabbit LD50 > 5000 mg/kg

Inhalation - slightly toxic Rat 4hr LC50 - 2.6 mg/L

Eye irritation - Rabbits 24 hr - slight to moderate irritation
Eye irritation was evident at day 14 but cleared by day 21
after exposure in 1 animal

Skin irritation - Rabbits 4 hr - essentially non-irritating.
Slight erythema (redness) clearing in all animals within 24
hours

No skin allergy was observed in guinea pigs following
repeated skin exposure.

COMPONENTS

Data from laboratory studies conducted by Monsanto and from
the scientific literature on components of Roundup(R)
herbicide:

Isopropylamine Salt of Glyphosate

Data from studies with a formulation comprised of 62%
isopropylamine salt of glyphosate (MON 0139) indicate the
following:

In repeat dosing studies (6-month), dogs fed MON 0139
exhibited slight body weight changes. Following repeated
skin exposure (3-week) to MON 0139, skin irritation was the
primary effect in rabbits.

Additional toxicity information is available on glyphosate,
the active herbicidal ingredient of MON 0139. Following
repeated exposure (90-day), 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. 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 bacteria cells.

Ethoxylated Tallowamine

The surfactant component of DuPont Glyphosate herbicide 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.

ECOLOGICAL INFORMATION

Ecotoxicological Information

DuPont Glyphosate herbicide has been shown to be slightly to moderately toxic in aquatic studies. DuPont Glyphosate herbicide has been shown to be practically non-toxic to avian species following subacute dietary exposure.

Rainbow Trout 96-hr LC50	22 mg/L (static)
Rainbow Trout 96-hr LC50	8.2 mg/L (dynamic)
Daphnia Magna 48-hr LC50	37 mg/L (aeration)
Daphnia Magna 48-hr LC50	24 mg/L (w/o aeration)
Bluegill Sunfish 96-hr LC50	5.8 mg/L (dynamic)
Bluegill Sunfish 96-hr LC50	14 mg/L (static)
Gammarus pseudolimnaeus 48-hr EC50	42 mg/L
Fathead minnow 96-hr LC50	9.4 mg/L
Channel catfish 96-hr LC50	16 mg/L
Chinook Salmon 96-hr LC50	20 mg/L
Coho Salmon 96-hr LC50	22 mg/L
Algae S. Capricornutum 72-hr EC50	2.1 mg/L
Bobwhite Quail 8-day LC50	>6300 ppm
Mallard Duck 8-day LC50	>6300 ppm

DISPOSAL CONSIDERATIONS

Waste Disposal

Wastes resulting from the use of this product 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.

Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Do not cut or weld on or near this container.

Metal Drums - Triple rinse container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Plastic Drums - Do not reuse container. Return container per the Monsanto container return program. If not returned, 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.

TRANSPORTATION INFORMATION

Shipping Information

DOT
Not Regulated.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : All components in compliance with TSCA Inventory requirements.

EPA Reg. No. 352-607

OTHER INFORMATION

Additional Information

Technical data, based on Monsanto Company MSDS dated Nov. 1997.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS: DuPont Agricultural Products
Address : Wilmington, DE 19898
Telephone : 800-441-7515

End of MSDS