



Revolver Herbicide

MSDS Version 1.

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name Revolver Herbicide
Chemical Name Foramsulfuron
Synonym
MSDS Number 1873
Chemical Family Sulfonylurea
Chemical Formulation
EPA Registration No. 432-1266
Canadian Registrat. No.

Bayer Environmental Science
 95 Chestnut Ridge Road
 Montvale, NJ 07645
 USA

For Product Use Information: (800)331-2867 Monday through Friday(CRLF) 8:00AM-4:30PM(CRLF) For Medical Emergency contact DART: (800) 334-7577 24 Hours/Day(CRLF) For Transportation Emergency CHEMTREC: (800) 424-9300 24 Hours/Day

Product Use Description A Herbicide for the Control of Annual and Perennial Grasses in Bermudagrass and Zoysiagrass.

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Component Name</u>	<u>CAS No.</u>	<u>Concentration % by Weight</u>	
		<u>Minimum</u>	<u>Maximum</u>
Foramsulfuron	173159-57-4		2.3400
Inert ingredients			97.6600

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SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview	Caution. Hazard to humans and domestic animals. Keep out of the reach of children.
Physical State	liquid
Odor	aromatic
Appearance	beige
Immediate Effects	
Eye	Causes moderate eye irritation. Avoid contact with eyes.
Skin	Avoid contact with skin or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

SECTION 4. FIRST AID MEASURES

Eye	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin	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.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Have a person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point	> 100 degrees celsius
Explosiveness	The test substance has no danger of explosion.
Suitable Extinguishing Media	dry chemical, alcohol foam, water spray, carbon dioxide (CO2)
Fire Fighting Instructions	Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind if possible. Keep out of low areas. Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

General and Disposal Use proper protective equipment to minimize personal exposure (see Section 8). Take all necessary action to prevent and to remedy the effects of the spill. Ensure that the disposal is in compliance with Federal or local disposal regulations. See Section 13 for any applicable Reportable Quantity (RQ) and other federal regulatory information.

Land Spill or Leaks Small Spill: Sweep up carefully while avoiding the formation of a dust cloud. Place in an approved chemical waste container for disposal. Rinse spill area with small amount of soapy water. Contain and absorb the rinsate with inert absorbents and place into the same disposal container. Area can be washed with water to remove the last trace residue. Do not allow water to contaminate water supplies or sewers.

Large Spill: Eliminate all ignition sources. Stop leak if you can do so without coming into contact with spilled material. Dike far ahead of liquid spill for later disposal. All equipment used to clean up spill should be grounded. Prevent entry into waterways, sewers, basements or confined areas. Inform appropriate authorities immediately if contamination occurs. Contact Bayer for further assistance if necessary.

SECTION 7. HANDLING AND STORAGE

Storing Procedures Do not contaminate water, food, or feed by storage or disposal.

Work/Hygienic Procedures Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Do not enter or allow worker entry into treated areas during the restricted entry interval.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls When handlers used closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [(40 CFR 170.240(d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Body Protection Applicators and other handlers must wear: Long-sleeved shirt and long pants shoes plus socks chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.

Exposure Limits

None Established

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance beige

Physical State liquid

Odor aromatic

pH 5.2 (1% in distilled water)

Density 0.9652/g cubic cm at 20 degrees celsius

Solubility (in water) Fully dispersable in water.

Viscosity Not required because the preparation is not a non-newtonian liquid

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability If stored in unopened original containers at temperature 25 +/- 5°C the product remains physically and chemically stable for at least two years.

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Incompatibility No chemical incompatibility exists if the material comes into contact with oxidizing or reducing agents.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity Rat: LD50: > 5,000 mg/kg

Acute Dermal Toxicity Rat: LD50: > 5,000 mg/kg

Acute Inhalation Toxicity Rat: LC50: > 5.25 mg/l air
Determined on milled granules.

Skin Irritation Rabbit: Moderately irritating

Eye Irritation Rabbit: Mildly irritating.

Sensitization Guinea pig: Sensitizing

Chronic Toxicity The following data is based on Foramsulfuron.
The oncogenic potential of foramsulfuron was examined in bioassays with rats and mice with dietary exposure periods of 2 years and 18 months, respectively.

In rats, dietary administration of up to 20,000 ppm of foramsulfuron for 2 years, equivalent to achieved intakes of 849 and 1,135 mg/kg/day for males and females, respectively, did not yield any evidence of toxicity or oncogenicity. The mean daily intakes over the 1-year period were 976 and 1,305 mg/kg/day for males and females, respectively. Thus this dose level approximated to the international regulatory limit dose of 1,000 mg/kg/day.

Similarly in mice, no oncogenic activity was found after dietary treatment with up to 8,000 ppm (equating to 1,115 and 1,358 mg/kg/day in males and females, respectively) for 18 months, which was slightly in excess of the international limit dose.

Assessment Carcinogenicity

ACGIH

None

NTP

None

IARC

None

OSHA

None

Reproductive & Developmental Toxicity Developmental Toxicity
In a rat developmental study, no maternal or developmental effects were considered to have been related to test article administration at any of the doses tested (NOAEL = 1,000 mg/kg/day)

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In a rabbit developmental study, no maternal or developmental effects were considered to have been related to test article administration at any of the doses tested (NOAEL = 500 mg/kg/day for maternal and developmental toxicity).

Reproductive Toxicity

There were no apparent effects on any parental or offspring parameters which appeared to have been the result of test article administration. The systemic, reproduction and offspring NOAELs for both generations were the Highest Dose Tested (mg/kg/day = 1,082 and 1,349 for P and F1 males; 1,229 and 1,434 for P and F1 females).

Neurotoxicity

The following is based on Foramsulfuron.

Foramsulfuron is a sulfonylurea herbicide which has no structural relationship to neurotoxic substances. Moreover, its very low and non-specific toxicological profile shows no evidence of neurotoxic potential. Consequently no special studies have been conducted for this.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to Aquatic Plants Non-target plants may be adversely affected if the pesticide is allowed to drift from areas of application. To prevent damage to crops and other desirable plants, read and follow all directions and precautions on the label before using.

Toxicity Other Non Mammal Terr. Species

Acute Exposure
Toxicity data of Foramsulfuron
Bobwhite quail
LD50: > 2,000 mg/kg

Acute Exposure
Toxicity data of Foramsulfuron
Mallard duck
LD50: > 2,000 mg/kg

Short Term Exposure Limit (STEL):
Toxicity data of Foramsulfuron
Bobwhite quail
LC50: > 5,000 ppm

Short Term Exposure Limit (STEL):
Toxicity data of Foramsulfuron
Mallard duck
LC50: > 5,000 ppm

Long Term Exposure/Reproduction
Toxicity data of Foramsulfuron
Bobwhite quail
NOEC: 1,000 ppm

Long Term Exposure/Reproduction

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Toxicity data of Foramsulfuron
Mallard duck
NOEC: 1,000 ppm

Environmental Precautions

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. Do not drain or rinse equipment near desirable vegetation. Do not apply when conditions favor drift from treated areas.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance

Wastes resulting from use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal

Triple rinse (or equivalent). 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. If burned, stay out of smoke.

RCRA Classification

Not Regulated under this Statute

SECTION 14. TRANSPORT INFORMATION

Not Regulated for Domestic Transportation.

SECTION 15. REGULATORY INFORMATION

US Federal Regulations

EPA Registration No. 432-1266

TSCA list

None

TSCA 12b export notification

None

SARA Title III - section 302 - notification and information

None

SARA Title III - section 313 - toxic chemical release reporting

None

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State right-to-know ingredients

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None

Canadian Regulations

Canadian Registrat. No.

Canadian Domestic Substance List

None

Environmental

CERCLA

None

Clean Water Section 307 Priority Pollutants

None

Safe Drinking Water Act Maximum Contaminant Levels

None

International Regulations

EU Classification

None

European Inventory of Existing Commercial Substances (EINECS)

None

SECTION 16. OTHER INFORMATION

	Health	Flammability	Reactivity	Others
HMIS	2	1	0	
NFPA	2	1	0	

Reason for Revisions: New MSDS

Print Date: 02/19/2003

Supersedes MSDS, which is older than: 02/19/2003

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