



## Revolver Herbicide

MSDS Version 1.3

### SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

<b>Product Name</b>	Revolver Herbicide
<b>Chemical Name</b>	Foramsulfuron
<b>Common Name</b>	
<b>MSDS Number</b>	1873
<b>Chemical Family</b>	Sulfonylurea
<b>Chemical Formulation</b>	
<b>EPA Registration No.</b>	432-1266

Bayer Environmental Science  
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 Research Triangle PK, NC 27709  
 USA

For MEDICAL, TRANSPORTATION or Other EMERGENCY call 1-800-334-7577 24 hours/day  
 For Product Information call 1-800-331-2867

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

### SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

	<u>Hazardous Component Name</u>	<u>CAS No.</u>	<u>Concentration % by Weight</u>	
			<u>Minimum</u>	<u>Maximum</u>
	Foramsulfuron	173159-57-4		2.3400
	Naphthalene	91-20-3		4.0000

### SECTION 3. HAZARDS IDENTIFICATION

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

<b><u>Emergency Overview</u></b>	Caution! Hazards to humans and domestic animals. Keep out of the reach of children.
<b>Physical State</b>	Liquid
<b>Odor</b>	Aromatic
<b>Appearance</b>	Beige
<b>Immediate Effects</b>	
<b>Eye</b>	Causes moderate eye irritation. Avoid contact with eyes.

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**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 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 °C / 212 °F

**Explosiveness** Product possesses no explosive potential.

**Suitable Extinguishing Media** Dry chemical, Alcohol foam, Water spray, Carbon dioxide (CO<sub>2</sub>)

**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.

### 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. Any disposal practice must be in compliance with all Federal, State/provincial, and local laws and regulations.

**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.

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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 (REI) of 24 hours.

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.

### 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

Naphthalene	91-20-3	ACGIH	TWA	10 ppm	
		ACGIH	STEL	15 ppm	
		NIOSH	REL	10 ppm	50 mg/m3
		NIOSH	STEL	15 ppm	75 mg/m3

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OSHA Z1	PEL	10 ppm	50 mg/m <sup>3</sup>
OSHA Z1A	TWA	10 ppm	50 mg/m <sup>3</sup>
OSHA Z1A	STEL	15 ppm	75 mg/m <sup>3</sup>
US CA OEL	TWA PEL	10 ppm	50 mg/m <sup>3</sup>
US CA OEL	STEL	15 ppm	75 mg/m <sup>3</sup>

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Beige
<b>Physical State</b>	Liquid
<b>Odor</b>	Aromatic
<b>pH</b>	5.2 (1% in distilled water)
<b>Density</b>	0.9652 g/cu-cm at 20°C
<b>Solubility (in water)</b>	Dispersible

### SECTION 10. STABILITY AND REACTIVITY

<b>Chemical Stability</b>	This material is stable under normal handling and storage conditions described in Section 7.
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### SECTION 11. TOXICOLOGICAL INFORMATION

<b>Acute Oral Toxicity</b>	Rat: LD50: > 5,000 mg/kg
<b>Acute Dermal Toxicity</b>	Rat: LD50: > 5,000 mg/kg
<b>Acute Inhalation Toxicity</b>	Rat: LC50: > 5.25 mg/l Determined on milled granules.
<b>Skin Irritation</b>	Rabbit: Moderately irritating.
<b>Eye Irritation</b>	Rabbit: Mildly irritating.
<b>Sensitization</b>	Guinea pig: Sensitizing
<b>Chronic Toxicity</b>	<p>The following data is based on Foramsulfuron.</p> <p>The oncogenic potential of foramsulfuron was examined in bioassays with rats and mice with dietary exposure periods of 2 years and 18 months, respectively.</p> <p>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</p>

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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

Naphthalene

91-20-3

Group A4

#### NTP

Naphthalene

91-20-3

#### 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)

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

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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  
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 drain or rinse equipment near desirable vegetation. Do not apply when weather conditions favor runoff or drift. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment washwater.

## SECTION 13. DISPOSAL CONSIDERATIONS

<b>General Disposal Guidance</b>	Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
<b>Container Disposal</b>	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or 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.
<b>RCRA Classification</b>	Not Regulated under this Statute

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### SECTION 14. TRANSPORT INFORMATION

Not Regulated for Domestic Transportation.

### SECTION 15. REGULATORY INFORMATION

EPA Registration No. 432-1266

#### US Federal Regulations

##### TSCA list

Naphthalene 91-20-3

##### TSCA 12b export notification

None

##### SARA Title III - section 302 - notification and information

None

##### SARA Title III - section 313 - toxic chemical release reporting

Naphthalene 91-20-3 1.0%

#### 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

Naphthalene 91-20-3 CA, CT, IL, MN, NJ, PA, RI

#### Canadian Regulations

##### Canadian Domestic Substance List

Naphthalene 91-20-3

#### Environmental

##### CERCLA

Naphthalene 91-20-3 100 lbs

##### Clean Water Section 307 Priority Pollutants

Naphthalene 91-20-3

##### Safe Drinking Water Act Maximum Contaminant Levels

Naphthalene 91-20-3

#### International Regulations

##### EU Classification

Naphthalene 91-20-3 Harmful Dangerous for the environment

R Phrases Harmful if swallowed. Very toxic to aquatic organisms, may

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### S Phrases

cause long-term adverse effects in the aquatic environment. Keep out of the reach of children. Wear suitable protective clothing and gloves. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

### European Inventory of Existing Commercial Substances (EINECS)

Naphthalene

91-20-3

## SECTION 16. OTHER INFORMATION

NFPA	Health	Flammability	Reactivity	Others
	2	1	0	

MSDS REVISION INDICATOR: Updated information in Section 2. Composition/Information on Ingredients; Removed HMIS ratings from Section 16.

Approval Date: 03/01/2004

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