



## PROGRASS® HERBICIDE

MSDS Version 2.3

### SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

<b>Product Name</b>	PROGRASS® HERBICIDE
<b>Chemical Name</b>	2-ethoxy-2,3-dihydro-3,3-dimethyl-5- benzofuranyl methanesulfonate (active ingredient)
<b>Synonym</b>	CR 14080
<b>MSDS Number</b>	136
<b>Chemical Family</b>	
<b>Chemical Formulation</b>	Mixture (active ingredient: C13H18O5S)
<b>EPA Registration No.</b>	432-941
<b>Canadian Registrat. No.</b>	

Bayer Environmental Science  
 2 T.W. Alexander Drive  
 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** Selective herbicide for use by professional applicators on ornamental turf only.

### 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>
Ethofumesate	26225-79-6	19.0000	
Inert ingredients,including:		81.0000	
Xylene	1330-20-7		<60.0000
Cyclohexanone	108-94-1		
Ethyl benzene	100-41-4		

INERT INGREDIENTS (81.0%): Only the regulated ingredients are listed above. For additional information, refer to Section 15 (Regulatory Information).

# Material Safety Data Sheet

## PROGRASS® HERBICIDE

MSDS Number: 00000000136  
MSDS Version 2.3

### SECTION 3. HAZARDS IDENTIFICATION

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

#### **Emergency Overview**

Danger! Keep out of the reach of children. Hazard to humans and domestic animals. Corrosive - causes irreversible eye damage. Do not get in eyes or on clothing. Harmful if absorbed through the skin. Avoid contact with skin.

#### **Physical State**

liquid

#### **Odor**

Aromatic hydrocarbon odor

#### **Appearance**

Straw-colored

#### **Routes of Exposure**

Skin contact. Vapor/mist inhalation.

#### **Immediate Effects**

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

#### **Eye**

Corrosive. Causes eye damage. The solvent vapor can be a mild eye irritant. Use proper protective eyewear during handling/use (See Section 8).

#### **Skin**

May be harmful if absorbed through skin. Repeated skin contact removes skin oil, possibly leading to irritation and aggravation of an existing dermatitis. Repeated contact may sensitize the skin, leading to allergic reactions.

#### **Ingestion**

May be harmful if swallowed. No specific health effects are known for ingestion of a small amount incidental to routine handling and use.

#### **Inhalation**

Prolonged inhalation of high vapor concentrations may cause drowsiness and dizziness.

#### **Chronic or Delayed Long-Term**

No component of this product is listed as a carcinogen by NTP, IARC, or OSHA.

#### **Medical Conditions Aggravated by Exposure**

Repeated and prolonged skin contact can aggravate pre-existing dermatitis (irritating or/and inflammatory skin conditions).

#### **Signs and Symptoms**

High concentrations of solvent vapor may cause dizziness, drowsiness, weakness and incoordination.

### 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

# Material Safety Data Sheet

## PROGRASS® HERBICIDE

MSDS Number: 00000000136  
MSDS Version 2.3

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.

**Note to Physician** If swallowed, give gastric lavage. Avoid aspiration (contains xylene).

### SECTION 5. FIRE FIGHTING MEASURES

**Flash Point** 29 °C / 84 °F  
(Flammable) P.M.C.C.  
Flammability class: 1-C\* (Classified by NFPA Standards)

**Fire and Explosion Hazards** Highly flammable liquid.

**Suitable Extinguishing Media** dry chemical, foam, water

**Fire Fighting Instructions** Wear self-contained breathing apparatus. Do not breathe fumes or vapor.

### 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. Notify the appropriate authorities immediately.

(\*Must refer to Section 15 for applicable Reportable Quantity (RQ) and other federal or regulatory information; \*Prograss contains CERCLA and RCRA regulated inert ingredients).

**Land Spill or Leaks** Stop leak if it can be done without risk. Take up with sand or other non-combustible material and place into a clean container for later disposal. Report immediately to authorities if liquid enters watercourse or sewer.

### SECTION 7. HANDLING AND STORAGE

**Handling Procedures** Danger! Flammable liquid. Corrosive. Causes eye damage. Do not get in eyes. Avoid contact with skin.

Do not use, pour, spill or store near heat or open flame.

**Storing Procedures** Do not contaminate water, food, or feed by storage or disposal. Store in areas

# Material Safety Data Sheet

MSDS Number: 000000000136  
MSDS Version 2.3

## PROGRASS® HERBICIDE

designated for highly flammable liquids.

### Work/Hygienic Procedures

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this products concentrate.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this products concentrate. Do not reuse them. 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 apply this product in a way that will contact workers or other persons, either directly or through drift. Do not apply this product through any type of irrigation system. 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.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

### Min/Max Storage Temperatures

1 °C

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Controls

Control airborne concentrations below the exposure guidelines. Use with adequate ventilation. Local exhaust ventilation may be necessary, when used in a confined area.

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.

### Eye/Face Protection

goggles or face-shield

### Body Protection

Applicators and other handlers must wear: Long-sleeved shirt and long pants  
Chemical resistant gloves, such as barrier laminate, or Vitron  $\geq$  14 mils shoes plus socks protective eyewear.

### Respiratory Protection

Ensure adequate ventilation. If not adequate, use a chemical cartridge-type respirator approved by the National Institute of Occupational Health and Safety.

#### NOTE TO APPLICATORS AND HANDLERS:

For agricultural products which are within the scope of the EPA Worker

# Material Safety Data Sheet

## PROGRASS® HERBICIDE

MSDS Number: 00000000136  
MSDS Version 2.3

Protection Standards (WPS) (40 CFR Part 170), all users must refer to the statement below or the Product Label for WPS-specified Personal Protective Equipment (PPE), Restricted Entry Interval (REI), and other Precautionary Statements.

For non-agricultural uses that are not within the scope of the Worker Protection Standard for agricultural pesticides, the Personal Protection Equipment recommendations are identical to that listed for WPS.

If you want more options to the PPE listed below, follow instructions for category "G" on an EPA chemical-resistance category selection chart.

### PERSONAL PROTECTIVE EQUIPMENT FOR APPLICATORS AND HANDLERS: (FOR AGRICULTURAL AND NON-AGRICULTURAL USES.)

Applicators and handlers must wear:  
Long-sleeve shirt and long pants.  
Chemical-resistant gloves such as barrier laminate or Viton.  
Shoes plus socks  
Protective eyewear.

### FOR AGRICULTURAL USES ONLY:

### PERSONAL PROTECTIVE EQUIPMENT REQUIRED FOR EARLY ENTRY INTO TREATED AREAS:

For entry into treated area during the restricted entry interval (REI) of 12 hours that involves contact with anything that has been treated such as plants, soil, or water, the PPE required is:

Coveralls over short-sleeved shirt and short pants.  
Chemical-resistant gloves such as barrier laminate or viton.  
Shoes plus socks.  
Protective eyewear for overhead exposure.

### Exposure Limits

Xylene	1330-20-7	OSHA Z1	PEL	100 ppm	435 mg/m3
		OSHA Z1A	TWA	100 ppm	435 mg/m3
		OSHA Z1A	STEL	150 ppm	655 mg/m3
		US CA OEL	TWA PEL	100 ppm	435 mg/m3
		US CA OEL	Ceiling		300 ppm
		US CA OEL	STEL	150 ppm	655 mg/m3
		NIOSH	REL	100 ppm	435 mg/m3
		NIOSH	STEL	150 ppm	655 mg/m3
		NIOSH	REL	100 ppm	435 mg/m3
		NIOSH	STEL	150 ppm	655 mg/m3
		NIOSH	REL	100 ppm	435 mg/m3
		NIOSH	STEL	150 ppm	655 mg/m3
		ACGIH	TWA		100 ppm
		ACGIH	STEL		150 ppm

# Material Safety Data Sheet

MSDS Number: 00000000136

## PROGRASS® HERBICIDE

MSDS Version 2.3

Cyclohexanone	108-94-1	ACGIH	TWA		25 ppm		
		NIOSH	REL	25 ppm	100 mg/m3		
		OSHA Z1	PEL	50 ppm	200 mg/m3		
		OSHA Z1A	TWA	25 ppm	100 mg/m3		
		US CA OEL	TWA PEL	25 ppm	100 mg/m3		
		ACGIH NIC	TWA		20 ppm		
		ACGIH NIC	STEL		50 ppm		
		Ethyl benzene	100-41-4	ACGIH	TWA		100 ppm
				ACGIH	STEL		125 ppm
				NIOSH	REL	100 ppm	435 mg/m3
NIOSH	STEL			125 ppm	545 mg/m3		
OSHA Z1	PEL			100 ppm	435 mg/m3		
OSHA Z1A	TWA			100 ppm	435 mg/m3		
		OSHA Z1A	STEL	125 ppm	545 mg/m3		
		US CA OEL	TWA PEL	100 ppm	435 mg/m3		
		US CA OEL	STEL	125 ppm	545 mg/m3		

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Straw-colored
<b>Physical State</b>	liquid
<b>Odor</b>	Aromatic hydrocarbon odor
<b>Vapor Pressure</b>	Xylene (19 mmHg); Cyclohexanone (3.95 mmHg)
<b>Specific Gravity</b>	0.95

# Material Safety Data Sheet

## PROGRASS® HERBICIDE

MSDS Number: 00000000136  
MSDS Version 2.3

**Boiling Point** 137 °C  
(Xylene)

### SECTION 10. STABILITY AND REACTIVITY

**Chemical Stability** Stable

**Hazardous Polymerization (Conditions to avoid)** Will not occur.

### SECTION 11. TOXICOLOGICAL INFORMATION

**Acute Oral Toxicity** Rat: LD50: 5,560 mg/kg  
Low toxicity.

**Acute Dermal Toxicity** Rat: LD50: > 4,000 mg/kg  
Low toxicity.

**Acute Inhalation Toxicity** No data is available for this formulated product.

However, the LC50 (mix) can be calculated from the available LC50 (rat) data for the volatile solvents (xylene & cyclohexanone; inert ingredients).  
The calculated LC50 (mix) for Prograss is estimated to be:  
> 10.0 mg/L (low toxicity)

**Skin Irritation** Harmful if absorbed through the skin. A mild skin irritant on brief contact. Prolonged contact removes skin oils and causes irritation. Repeated contacts may sensitize the skin, leading to allergic reactions.

**Eye Irritation** Corrosive to eyes.  
Causes irreversible eye damage when prolonged contact had occurred.

The studies reported below were carried out with Ethofumesate technical (97.4% ethofumesate), the active ingredient of this product.

**Sub-Chronic Toxicity** Results from 90-day animal studies suggest no target organ effects under the recommended conditions for normal handling and use.

**Chronic Toxicity** In two-year feeding studies with animals, adverse effects were only observed at very high doses. These include: a reduced weight gain in males and increased liver weight in females (rats, 5,000 ppm); an increased liver weight in females (hamsters, 2,000 ppm); an increased liver weight in both males and females (dogs, 20,000 ppm).

The inert ingredient cyclohexanone is listed by IARC as a Group 3 substance: Not classifiable as human carcinogen (group 3); human evidence is no adequate data; animal evidence is inadequate. Cyclohexanone is also listed as a NTP

# Material Safety Data Sheet

## PROGRASS® HERBICIDE

MSDS Number: 00000000136

MSDS Version 2.3

Testing Program substance.

### Assessment Carcinogenicity

#### ACGIH

Xylene	1330-20-7	Group A4
Cyclohexanone	108-94-1	Group A4
Ethyl benzene	100-41-4	Group A3

#### NTP

None

#### IARC

Xylene	1330-20-7	3
Cyclohexanone	108-94-1	3
Ethyl benzene	100-41-4	2B

#### OSHA

None

### Reproductive & Developmental Toxicity

Ethofumesate showed no adverse effects in a three-generation rat study.

### Teratogenicity

Ethofumesate had no teratogenic effects in rats at dose levels up to 80 mg/kg/day. In rabbits, no adverse effects of biological significance were observed at the low dose (30 mg/kg/day); slight embryo-lethal effects were noted at 300 mg/kg/day; severe maternal toxicity and moderate embryo-lethal effects were observed at the highest dose (3,000 mg/kg/day). No malformations were observed even at the highest dose.

### Mutagenicity

Ethofumesate was not mutagenic or genotoxic when tested in the Ames gene mutation assay and in four other mutagenesis systems.

## SECTION 12. ECOLOGICAL INFORMATION

### Environmental Precautions

For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below mean high water mark. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water when disposing of equipment washwaters.

# Material Safety Data Sheet

## PROGRASS® HERBICIDE

MSDS Number: 00000000136

MSDS Version 2.3

### SECTION 13. DISPOSAL CONSIDERATIONS

#### General Disposal Guidance

Handling and disposal of pesticide wastes must be in accordance with the requirements under the Resource and Recovery Act (RCRA) and applicable state and local procedures. Please be advised that the state and local requirements may be more restrictive or otherwise different from the federal regulations

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

#### 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. Do not reuse empty container.

#### RCRA Classification

1330-20-7 Xylene

US. EPA Resource Conservation and Recovery Act (RCRA) U List of Hazardous Wastes (40 CFR 261.33(f) and 40 CFR 302 [CERCLA]): U239

### SECTION 14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: Compound, weed killing, liquid (contains Cyclohexanone and Xylene), 3, NA1993, PG III, \* (\* Insert net volume)

DOT SHIPPING LABEL: Flammable Liquid

FREIGHT CLASSIFICATION: Compound, weed killing, N.O.I.

NOTE: For the 4 x 1 gallon package, mark Limited Quantity.

### SECTION 15. REGULATORY INFORMATION

#### US Federal Regulations

EPA Registration No.	432-941
TSCA list	
Xylene	1330-20-7
Cyclohexanone	108-94-1
Ethyl benzene	100-41-4

#### TSCA 12b export notification

None

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

# Material Safety Data Sheet

MSDS Number: 00000000136  
MSDS Version 2.3

## PROGRASS® HERBICIDE

None

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

Xylene	1330-20-7	1.0%
Ethyl benzene	100-41-4	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

Xylene	1330-20-7	CA, CT, IL, MI, MN, NJ, PA, RI
Cyclohexanone	108-94-1	CA, CT, IL, MN, NJ, PA, RI
Ethyl benzene	100-41-4	CA, CT, IL, MN, NJ, PA, RI

### Canadian Regulations

#### Canadian Registrat. No.

#### Canadian Domestic Substance List

Xylene	1330-20-7
Cyclohexanone	108-94-1
Ethyl benzene	100-41-4

### Environmental

#### CERCLA

Xylene	1330-20-7	100 lbs
Cyclohexanone	108-94-1	5,000 lbs
Ethyl benzene	100-41-4	1,000 lbs

#### Clean Water Section 307 Priority Pollutants

Ethyl benzene	100-41-4
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#### Safe Drinking Water Act Maximum Contaminant Levels

Xylene	1330-20-7
Ethyl benzene	100-41-4

### International Regulations

#### EU Classification

Ethofumesate	26225-79-6	Dangerous for the environment
R Phrases	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
S Phrases	Avoid release to the environment. Refer to special instructions/safety data sheets.	
Xylene	1330-20-7	Harmful
R Phrases	Flammable. Harmful by inhalation and in contact with skin. Irritating to skin.	
S Phrases	Keep out of the reach of children. Avoid contact with the eyes.	

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

Ethofumesate	26225-79-6
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# Material Safety Data Sheet

MSDS Number: 00000000136  
MSDS Version 2.3

## PROGRASS® HERBICIDE

Xylene	1330-20-7
Cyclohexanone	108-94-1
Ethyl benzene	100-41-4

### SECTION 16. OTHER INFORMATION

	Health	Flammability	Reactivity	Others
HMIS	3	3	0	H
NFPA	3	3	0	none

#### REVISED SECTIONS:

MSDS REVISION INDICATOR: Company name change.

Print Date: 01/13/2005

Supersedes MSDS, which is older than: 01/23/2003

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