



**Material Safety Data Sheet**

**PROGRASS® HERBICIDE**

MSDS Number: 102000000915

MSDS Version 2.1

Revision Date: 09/22/2011

Print Date: 09/22/2011

**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product name** PROGRASS® HERBICIDE  
**MSDS Number** 102000000915  
**Product code (UVP)** 05934648  
**EPA Registration No.** 432-941  
**Product Use** Herbicide

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

**SECTION 2. HAZARDS IDENTIFICATION**

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

**Emergency Overview** Danger! Corrosive - causes irreversible eye damage. Causes skin irritation. Do not get in eyes or on clothing. Avoid inhalation of vapour or mist.

**Physical State** liquid clear

**Odor** aromatic

**Appearance** yellow to amber

**Exposure routes** Eye contact, Skin Absorption, Inhalation, Ingestion

**Immediate Effects**

**Eye** Corrosive - causes irreversible eye damage. Vapors may cause eye irritation. Do not get in eyes.

**Skin** Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Repeated contact may sensitize the skin, leading to allergic reactions. May be harmful if absorbed through skin. Do not get on skin or clothing.

**Ingestion** May be harmful if swallowed. Do not take internally.

**Inhalation** Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Avoid inhalation of vapour or mist.



**Material Safety Data Sheet**

MSDS Number: 10200000915  
MSDS Version 2.1

**PROGRASS® HERBICIDE**

<b>Chronic or Delayed Long-Term</b>	This product or its components may have target organ effects. This product or its components may have long term (chronic) health effects.
<b>Medical Conditions Aggravated by Exposure</b>	Skin contact may aggravate existing skin disease. Individuals with allergic history or pre-existing dermatitis should use extra care in handling this product.
<b>Potential Environmental Effect</b>	Toxic to fish.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Ethofumesate	26225-79-6	19.00
Cyclohexanone	108-94-1	15.00
Xylene	1330-20-7	60.50
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5	1.11
Naphthalene	91-20-3	0.124

**SECTION 4. FIRST AID MEASURES**

<b>General</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<b>Eye</b>	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 physician or poison control center immediately.
<b>Skin</b>	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.
<b>Inhalation</b>	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
<b>Notes to physician Signs and Symptoms</b>	Local: Severe irritation  Systemic: To date no symptoms are known.



**Material Safety Data Sheet**

MSDS Number: 102000000915  
MSDS Version 2.1

**PROGRASS® HERBICIDE**

<b>Hazards</b>	Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard.
<b>Treatment</b>	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

**SECTION 5. FIRE FIGHTING MEASURES**

<b>Flash point</b>	29 °C / 84 °F
<b>Autoignition temperature</b>	> 480 °C / 896 °F The data refer to the solvent.
<b>Lower Flammability Limit</b>	1.1 %(V) The data refer to the solvent.
<b>Upper Flammability Limit</b>	6.6 %(V) The data refer to the solvent.
<b>Fire and Explosion Hazards</b>	Dangerous gases are evolved in the event of a fire.
<b>Suitable extinguishing media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable extinguishing media</b>	High volume water jet
<b>Fire Fighting Instructions</b>	Keep out of smoke. Fight fire from upwind position. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Do not allow run-off from fire fighting to enter drains or water courses. Whenever possible, contain fire-fighting water by diking area with sand or earth.  In the event of fire and/or explosion do not breathe fumes. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions</b>	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. Remove all sources of ignition.
<b>Methods for cleaning up</b>	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.



**Material Safety Data Sheet**

MSDS Number: 10200000915  
MSDS Version 2.1

**PROGRASS® HERBICIDE**

**Additional advice** Use personal protective equipment. Do not allow product to contact vegetation. Do not allow to enter soil, waterways or waste water canal.

**SECTION 7. HANDLING AND STORAGE**

**Handling procedures** Use only in area provided with appropriate exhaust ventilation. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Keep away from heat and sources of ignition. Vapours may form explosive mixture with air.

**Storing Procedures** Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Keep away from direct sunlight. Protect from freezing.

**Work/Hygienic Procedures** Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**General Protection** Follow all label instructions. Train employees in safe use of the product.  
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

**Eye/Face Protection** Chemical resistant goggles must be worn.

**Hand protection** Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton)

**Body Protection** Wear long-sleeved shirt and long pants and shoes plus socks.

**Respiratory protection** When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

**Exposure Limits**



**Material Safety Data Sheet**

**PROGRASS® HERBICIDE**

MSDS Number: 102000000915  
MSDS Version 2.1

Ethofumesate Cyclohexanone	26225-79-6 108-94-1	OES BCS*	TWA	10 mg/m3		
		ACGIH	TWA	20 ppm		
		ACGIH	STEL	50 ppm		
		NIOSH	REL	25 ppm		
		OSHA Z1	PEL	50 ppm		
		OSHA Z1A	TWA	25 ppm		
		US CA OEL	TWA PEL	25 ppm		
		TX ESL	ST ESL	480 ug/m3		
		TX ESL	AN ESL	48 ug/m3		
		TN OEL	TWA	25 ppm		
		TX ESL	ST ESL	120 ppb		
		TX ESL	AN ESL	12 ppb		
		Xylene	1330-20-7	ACGIH	TWA	100 ppm
				ACGIH	STEL	150 ppm
OSHA Z1	PEL			100 ppm		
OSHA Z1A	TWA			100 ppm		
OSHA Z1A	STEL			150 ppm		
US CA OEL	TWA PEL			100 ppm		
US CA OEL	Ceiling			300 ppm		
US CA OEL	STEL			150 ppm		
TX ESL	ST ESL			3700 ug/m3		
TX ESL	AN ESL			370 ug/m3		
OES BCS*	TWA			100 ppm		
TX ESL	ST ESL			850 ppb		
TX ESL	AN ESL			85 ppb		
TN OEL	TWA			100 ppm		
TN OEL	STEL	150 ppm				
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5	TX ESL	ST ESL	460 ppm		
		TX ESL	AN ESL	46 ppm		
Naphthalene	91-20-3	ACGIH	TWA	10 ppm		
		ACGIH	STEL	15 ppm		
		NIOSH	REL	10 ppm		
		NIOSH	STEL	15 ppm		
		OSHA Z1	PEL	10 ppm		
		OSHA Z1A	TWA	10 ppm		
		OSHA Z1A	STEL	15 ppm		
		US CA OEL	TWA PEL	10 ppm		
		US CA OEL	STEL	15 ppm		
		TX ESL	ST ESL	440 ug/m3		
		TX ESL	AN ESL	50 ug/m3		
		OES BCS*	TWA	10 ppm		
		TX ESL	ST ESL	90 ppb		
		TX ESL	AN ESL	10 ppb		
		TN OEL	TWA	10 ppm		
		TN OEL	STEL	15 ppm		

\*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"



**Material Safety Data Sheet**

**PROGRASS® HERBICIDE**

MSDS Number: 102000000915  
MSDS Version 2.1

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	yellow to amber
<b>Physical State</b>	liquid clear
<b>Odor</b>	aromatic
<b>pH</b>	no data available
<b>Vapor Pressure</b>	10 mbar / 7.5 mm Hg at 20 °C The data refer to the solvent.
<b>Vapor Density (Air = 1)</b>	3.7 The data refer to the solvent.
<b>Density</b>	ca. 0.95 g/cm <sup>3</sup> at 20 °C
<b>Evaporation rate</b>	no data available
<b>Boiling Point</b>	137 - 141 °C / 279 - 286 °F Information refers to the solvent.
<b>Melting / Freezing Point</b>	no data available
<b>Water solubility</b>	miscible
<b>Minimum Ignition Energy</b>	no data available
<b>Decomposition temperature</b>	no data available
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Viscosity</b>	no data available

**SECTION 10. STABILITY AND REACTIVITY**

<b>Conditions to avoid</b>	Extremes of temperature and direct sunlight. Heat, flames and sparks.
<b>Incompatibility</b>	no data available
<b>Hazardous reactions</b>	No hazardous reactions when stored and handled according to prescribed instructions.



**Material Safety Data Sheet**

**PROGRASS® HERBICIDE**

MSDS Number: 102000000915  
MSDS Version 2.1

**Chemical Stability**                      Stable under normal conditions.

**SECTION 11. TOXICOLOGICAL INFORMATION**

The acute inhalation LC50 has been bridged from the technical-grade active ingredient, ethofumesate. All other acute toxicity data have been bridged from similar formulations containing similar percentages of ethofumesate. The non-acute information pertains to the technical-grade active ingredient.

**Acute oral toxicity**                      male rat: LD50: > 5,660 mg/kg

**Acute dermal toxicity**                      male rat: LD50: > 4,000 mg/kg

**Acute inhalation toxicity**                      male/female combined rat: LC50: > 5.4 mg/l  
Exposure time: 4 h  
Determined in the form of liquid aerosol.

male/female combined rat: LC50: > 21.6 mg/l  
Exposure time: 1 h  
Determined in the form of liquid aerosol.  
Extrapolated from the 4 hr LC50.

**Skin irritation**                                      rabbit: slight irritation

**Eye irritation**                                      rabbit: Severe eye irritation.

**Chronic toxicity**                                      Ethofumesate caused decreased body weight gains and/or liver effects in chronic studies in rats and dogs.

**Assessment Carcinogenicity**

Ethofumesate has been classified by EPA as "not likely to be carcinogenic to humans" based on the lack of carcinogenicity in mice, the lack of convincing evidence for carcinogenicity in the rat, and no evidence of genotoxicity.

**ACGIH**

Cyclohexanone	108-94-1	Group A3
Xylene	1330-20-7	Group A4
Naphthalene	91-20-3	Group A4

**NTP**

Naphthalene	91-20-3
-------------	---------

**IARC**

Cyclohexanone	108-94-1	Overall evaluation: 3
Xylene	1330-20-7	Overall evaluation: 3
Naphthalene	91-20-3	Overall evaluation: 2B

**OSHA**

None.

**Reproductive toxicity**                      REPRODUCTION: Ethofumesate demonstrated no adverse effects on reproduction in a three-generation rat study.



**Material Safety Data Sheet**

MSDS Number: 102000000915  
MSDS Version 2.1

**PROGRASS® HERBICIDE**

**DEVELOPMENTAL TOXICITY:** Ethofumesate was not a developmental toxicant in rats. In rabbits, developmental effects (e.g. incomplete ossifications) were observed at a non-maternally toxic dose. No malformations were observed even at the highest dose.

**Assessment neurotoxicity**

Ethofumesate was not a neurotoxicant in a subchronic neurotoxicity screening study in rats. In addition, ethofumesate has not demonstrated the potential to cause neurotoxicity in standard toxicity studies using mice, rats, rabbits and dogs.

**Mutagenicity**

Ethofumesate was not mutagenic or genotoxic in a battery of in vitro and in vivo mutagenicity studies.

**SECTION 12. ECOLOGICAL INFORMATION**

**Toxicity to fish**

Cyprinus carpio (Carp)  
LC50: 10.92 mg/l  
Exposure time: 96 h  
The value mentioned relates to the active ingredient ethofumesate.

**Toxicity to aquatic plants**

Desmodesmus subspicatus  
IC50: 3.9 mg/l  
Exposure time: 72 h  
The value mentioned relates to the active ingredient ethofumesate.

Lemna minor  
Biomass  
EC50: 50.4 mg/l  
Exposure time: 336 h  
The value mentioned relates to the active ingredient ethofumesate.

Lemna minor  
Growth rate  
EC50: > 52.8 mg/l  
Exposure time: 336 h  
The value mentioned relates to the active ingredient ethofumesate.

**Acute Toxicity to Aquatic Invertebrates**

Water flea (Daphnia magna)  
EC50: 13.52 mg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient ethofumesate.

**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 apply when weather conditions favor runoff or drift. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.





**Material Safety Data Sheet**

**PROGRASS® HERBICIDE**

MSDS Number: 102000000915  
MSDS Version 2.1

**SECTION 13. DISPOSAL CONSIDERATIONS**

- General Disposal Guidance** 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** Do not re-use empty containers. Triple rinse containers. Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke. Follow advice on product label and/or leaflet.
  
- RCRA Information** Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

**SECTION 14. TRANSPORT INFORMATION**

**49CFR**

UN-Number	<b>1993</b>
Class	3
Packaging group	III
Description of the goods	FLAMMABLE LIQUIDS, N.O.S. (XYLENE, CYCLOHEXANONE)
RQ	Reportable Quantity is reached with 165 lb of product.

**IMDG**

UN-Number	<b>1993</b>
Class	3
Packaging group	III
Marine pollutant	YES
Description of the goods	FLAMMABLE LIQUID, N.O.S. (ETHOFUMESATE, XYLENE SOLUTION)

**IATA**

UN-Number	<b>1993</b>
Class	3
Packaging group	III
Environm. Hazardous Mark	NO
Description of the goods	FLAMMABLE LIQUID, N.O.S. (ETHOFUMESATE, XYLENE SOLUTION )

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation



**Material Safety Data Sheet**

**PROGRASS® HERBICIDE**

MSDS Number: 102000000915  
MSDS Version 2.1

requirements.

Freight Classification: COMPOUNDS, TREE OR WEEDKILLING, N.O.I., other than poison;  
HAVING A DENSITY OF GREATER THAN 20 LBS. PER CUBIC FOOT

**SECTION 15. REGULATORY INFORMATION**

**EPA Registration No.** 432-941

**US Federal Regulations**

**TSCA list**

Cyclohexanone	108-94-1
Xylene	1330-20-7
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5
Naphthalene	91-20-3

**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

Naphthalene 91-20-3

**SARA Title III - Section 302 - Notification and Information**

None.

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

Xylene	1330-20-7	1.0%
Naphthalene	91-20-3	0.1%

**US States Regulatory Reporting**

**CA Prop65**

This product contains a chemical known to the State of California to cause cancer.

Naphthalene 91-20-3

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

**US State Right-To-Know Ingredients**

Cyclohexanone	108-94-1	CA, CT, IL, MN, RI
Xylene	1330-20-7	CA, CT, IL, MI, NJ, RI
Naphthalene	91-20-3	CA, CT, IL, MN, NJ, RI

**Canadian Regulations**

**Canadian Domestic Substance List**

Cyclohexanone	108-94-1
Xylene	1330-20-7
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5
Naphthalene	91-20-3

**Environmental**

**CERCLA**

Cyclohexanone	108-94-1	5,000 lbs
Xylene	1330-20-7	100 lbs
Naphthalene	91-20-3	100 lbs

**Clean Water Section 307 Priority Pollutants**

None.



**Material Safety Data Sheet**

**PROGRASS® HERBICIDE**

MSDS Number: 102000000915  
MSDS Version 2.1

**Safe Drinking Water Act Maximum Contaminant Levels**

None.

**International Regulations**

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

Ethofumesate	26225-79-6
Cyclohexanone	108-94-1
Xylene	1330-20-7
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5
Naphthalene	91-20-3

**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

Health - 3      Flammability - 3      Instability - 0      Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 3      Flammability - 3      Physical Hazard - 0      PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Reviewed and updated for general editorial purposes.

Revision Date: 09/22/2011

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.