



Material Safety Data Sheet

INFINITY® HERBICIDE

MSDS Number: 102000011554

MSDS Version 1.7

Revision Date: 07/11/2011

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SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name INFINITY® HERBICIDE
MSDS Number 102000011554
PCP Registration No. 28738
Product Use Herbicide

Bayer CropScience Inc
 #200, 160 Quarry Park Blvd, SE
 Calgary, Alberta T2C 3G3
 Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-888-283-6847

SECTION 2. HAZARDS IDENTIFICATION

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

Emergency Overview Warning! Keep out of the reach of children. Harmful or fatal if swallowed.
 Causes eye irritation. Avoid contact with skin, eyes and clothing. Avoid breathing spray mist.

Physical State clear liquid
Odor aromatic solvent
Appearance amber
Exposure routes Eye contact, Skin Absorption, Inhalation, Ingestion

Immediate Effects
Eye Causes eye irritation. Do not get in eyes.
Skin Harmful if absorbed through skin. May cause skin irritation. Avoid contact with skin.
Ingestion Harmful or fatal if swallowed.
Inhalation Harmful if inhaled. Avoid breathing spray mist.

Chronic or Delayed Long-Term This product contains ingredients that are considered to be probable or suspected human carcinogens (see Section 11 - Chronic). This product or its components may have target organ effects.



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Potential Environmental Effect Toxic to aquatic organisms. This product may cause adverse effects on non-target plants.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Pyrasulfotole	365400-11-9	3.30
Bromoxynil octanoate	1689-99-2	13.40
Bromoxynil heptanoate	56634-95-8	12.90
Mefenpyr-diethyl	135590-91-9	0.83
Naphthalene	91-20-3	5.09

SECTION 4. FIRST AID MEASURES

General When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

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 physician or poison control center immediately.

Skin 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.

Ingestion 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.

Inhalation 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.

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

SECTION 5. FIRE FIGHTING MEASURES

Flash point 90 °C / 194 °F

Autoignition temperature no data available



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Lower Flammability Limit no data available

Upper Flammability Limit no data available

Explosiveness no data available

Fire and Explosion Hazards In the event of fire the following may be released:
nitrogen oxides (NOx)
Hydrogen bromide (HBr)
Hydrogen chloride (HCl)
Hydrogen fluoride
Sulphur oxides
Cyanides

Suitable extinguishing media Water, Alcohol-resistant foam, Dry powder, Carbon dioxide (CO2)

Fire Fighting Instructions Evacuate personnel to safe areas. Avoid contact with spilled product or contaminated surfaces. Keep out of smoke. Fight fire from upwind position. Do not allow run-off from fire fighting to enter drains or water courses.

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Dust Explosion Class Not applicable.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions Keep unauthorized people away. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment. Evacuate and isolate spill area.

Methods for cleaning up Dike area to prevent runoff. 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. Contaminated soil may have to be removed and disposed. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation.

SECTION 7. HANDLING AND STORAGE

Handling procedures Handle and open container in a manner as to prevent spillage. 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.



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Use only in area provided with appropriate exhaust ventilation.

Keep away from heat and sources of ignition.

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. Store in a place accessible by authorized persons only.

Work/Hygienic Procedures

Handle in accordance with good industrial hygiene and safety practice. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

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

Tightly fitting safety goggles

Hand protection

Chemical resistant nitrile rubber gloves

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

Pyrasulfotole	365400-11-9	OES BCS*	TWA	0.3 mg/m3
Bromoxynil octanoate	1689-99-2	OES BCS*	TWA	0.31 mg/m3
Naphthalene	91-20-3	OEL (QUE)	TWA	10 ppm
		OEL (QUE)	STEL	15 ppm
		CAD AB OEL	TWA	10 ppm
		CAD AB OEL	STEL	15 ppm
		CAD BC OEL	TWA	10 ppm
		CAD BC OEL	STEL	15 ppm
		CAD ON OEL	TWAEV	10 ppm
		CAD ON OEL	STEV	15 ppm
		OES BCS*	TWA	10 ppm
		OEL (QUE)	TWA	10 ppm



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OEL (QUE)	STEL	15 ppm
CAD SK OEL	8 HR ACL	10 ppm
CAD SK OEL	15 MIN ACL	15 ppm

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	amber
Physical State	clear liquid
Odor	aromatic solvent
pH	3.9 (10 %)
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	1.14 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	no data available
Solubility in other solvents	no data available
Minimum Ignition Energy	no data available
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	19.8 mPa.s at 25 °C

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	no data available
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Incompatibility	no data available
Hazardous Decomposition Products	Thermal decomposition can lead to release of: nitrogen oxides (NO _x) Hydrogen bromide (HBr) Hydrogen chloride (HCl) Hydrogen fluoride Sulphur oxides
Chemical Stability	Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredients, Pyrasulfotole and Bromoxynil, as well as, the herbicide safener, Mefenpyr-diethyl.

Acute oral toxicity	female rat: LD50: > 300 - < 2,000 mg/kg
Acute dermal toxicity	male/female combined rat: LD50: > 4,000 mg/kg
Acute inhalation toxicity	male/female combined rat: LC50: > 5 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. Highest attainable concentration.
	male/female combined rat: LC50: > 20 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
Skin irritation	rabbit: Mild skin irritation.
Eye irritation	rabbit: Moderate eye irritation.
Sensitisation	guinea pig: Non-sensitizing.
Chronic toxicity	Pyrasulfotole caused liver, kidney, thyroid and/or eye effects in chronic dietary studies in rats and dogs. Bromoxynil caused decreased body weight gains, changes in hematological parameters and/or liver effects in chronic studies in rats and dogs. Mefenpyr-diethyl affected the liver and/or red blood cells in chronic dietary studies in rats and dogs.

Assessment Carcinogenicity

Pyrasulfotole caused secondary tumors in rats (corneal) and mice (urinary bladder) at the highest dose tested in oncogenicity studies. Based on these studies, pyrasulfotole did not demonstrate any oncogenic



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potential relevant for human risk assessment.

Bromoxynil has been classified by EPA as a Group C, possible human carcinogen, based on an increased incidence of liver tumors observed in mice.

Mefenpyr-diethyl was not carcinogenic in oncogenicity studies in rats and mice.

ACGIH

Naphthalene 91-20-3 Group A4

NTP

Naphthalene 91-20-3

IARC

Naphthalene 91-20-3 Overall evaluation: 2B

OSHA

None.

Reproductive toxicity

REPRODUCTION

Pyrasulfotole was not a reproductive toxicant in a two-generation study in rats.

Bromoxynil did not cause reproductive toxicity in multi-generation studies in rats via the oral and dermal route of exposure.

Mefenpyr-diethyl was not a reproductive toxicant at non-maternally toxic dose levels in a two-generation study in rats.

DEVELOPMENTAL TOXICITY

Pyrasulfotole is not a primary developmental toxicant, however, secondary effects were observed in rats and rabbits.

Bromoxynil is considered a developmental toxicant based on the results of developmental toxicity studies in rats and rabbits.

Mefenpyr-diethyl was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed in rabbits but were considered secondary to maternal toxicity.

Assessment neurotoxicity

Pyrasulfotole was not a neurotoxicant in acute, subchronic and developmental neurotoxicity screening studies in rats.

Bromoxynil did not demonstrate the potential to cause neurotoxicity in standard toxicity studies using laboratory animals.

Mefenpyr-diethyl neurotoxicity studies are not required at this time.

Mutagenicity

Pyrasulfotole was not genotoxic in a battery of in vitro and in vivo tests.

Bromoxynil was not mutagenic or genotoxic based on the collective data from a battery of in vitro and in vivo tests.

Mefenpyr-diethyl did not cause genotoxicity in a battery of in vitro and in vivo



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tests.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish	<p>Lepomis macrochirus (Bluegill sunfish) LC50: 0.029 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient bromoxynil octanoate.</p> <p>Lepomis macrochirus (Bluegill sunfish) LC50: 0.029 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient bromoxynil heptanoate.</p>
Toxicity to aquatic plants	<p>Navicula pelliculosa EC50: 0.043 mg/l Exposure time: 120 h The value mentioned relates to the active ingredient bromoxynil octanoate.</p> <p>Lemna gibba (duckweed) EC50: 0.073 mg/l The value mentioned relates to the active ingredient bromoxynil octanoate.</p>
Acute Toxicity to Aquatic Invertebrates	<p>Water flea (Daphnia magna) EC50: 0.046 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient bromoxynil octanoate.</p> <p>Water flea (Daphnia magna) EC50: 0.031 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient bromoxynil heptanoate.</p>
Environmental precautions	<p>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 allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift. Drift or runoff from treated areas may adversely affect non-target plants.</p>



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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Follow container label instructions for disposal of wastes generated during use in compliance with the product label. It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Do not contaminate water, food, or feed by disposal.

Container Disposal Do not re-use empty containers. Triple rinse containers. Puncture container to avoid re-use. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION

TDG Not dangerous goods / not hazardous material

49CFR

NA-Number **1993**
Packaging group **III**
Marine pollutant **Marine pollutant**
Description of the goods **COMBUSTIBLE LIQUID, N.O.S. (BROMOXYNIL, PETROLEUM DISTILLATES)**

IMDG

UN-Number **3082**
Class **9**
Packaging group **III**
Marine pollutant **YES**
Description of the goods **ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMOXYNIL, PETROLEUM DISTILLATES SOLUTION)**

IATA

UN-Number **3082**
Class **9**
Packaging group **III**
Environm. Hazardous Mark **YES**
Description of the goods **ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BROMOXYNIL, PETROLEUM DISTILLATES 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 requirements.

SECTION 15. REGULATORY INFORMATION

PCP Registration No. 28738



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US Federal Regulations

TSCA list

Bromoxynil octanoate 1689-99-2
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

Bromoxynil octanoate 1689-99-2 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

Bromoxynil octanoate 1689-99-2 NJ
Naphthalene 91-20-3 CA, CT, IL, MN, NJ, 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

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Bromoxynil octanoate 1689-99-2
Bromoxynil heptanoate 56634-95-8
Naphthalene 91-20-3



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SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 2 Instability - 1 Others - none

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

Health - 1* Flammability - 2 Physical Hazard - 1 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. The following sections have been revised: Section 1: Chemical Product and Company Information. Section 16: Other Information.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 07/11/2011

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