



Material Safety Data Sheet
OPTION™ 2.25 OD LIQUID HERBICIDE

MSDS Number: 102000011304
 MSDS Version 1.2
 Revision Date: 06/23/2010

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name OPTION™ 2.25 OD LIQUID HERBICIDE
MSDS Number 102000011304
PCP Registration No. 27424

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! Irritating to skin.
 Caution! Irritating to eyes.
 Keep out of the reach of children. Avoid contact with skin, eyes and clothing.
 Avoid breathing spray mist.

Physical State liquid

Odor aromatic

Appearance beige

Exposure routes Eye contact, Skin contact, Inhalation

Immediate Effects

Eye May cause eye irritation. Do not get in eyes.

Skin May cause skin irritation. May cause sensitization by skin contact. Avoid contact with skin and clothing.

Ingestion Do not take internally.

Inhalation Avoid breathing spray mist.

Potential Environmental Effect Toxic to fish and aquatic organisms.



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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Foramsulfuron	173159-57-4	2.34
Isoxadifen-ethyl	163520-33-0	2.34
Solvent Naphtha (petroleum), heavy aromatic	64742-94-5	

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 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 Treatment	Treat symptomatically. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

Flash point	> 110 °C / > 230 °F
Autoignition temperature	no data available
Lower Flammability Limit	no data available
Upper Flammability Limit	no data available
Explosiveness	Not explosive
Fire and Explosion Hazards	In the event of fire the following may be released: Carbon monoxide (CO) nitrogen oxides (NOx) Hydrogen chloride (HCl)



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

Unsuitable extinguishing media High volume water jet

Fire Fighting Instructions Avoid contact with spilled product or contaminated surfaces. Evacuate personnel to safe areas. 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.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions Use personal protective equipment. Remove all sources of ignition.

Methods for cleaning up Clean contaminated floors and objects thoroughly, observing environmental regulations. 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. Decontaminate tools and equipment following cleanup.

Additional advice Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

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 Use only in area provided with appropriate exhaust ventilation.

Storing Procedures Store in original container. 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.

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 contaminated clothing immediately and dispose of safely. Wash thoroughly and put on clean clothing.



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Min/Max Storage Temperatures Recommended minimum transport/storage temperature: 0 °C / 32 °F
Recommended maximum transport/storage temperature: 30 °C / 86 °F

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 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

Foramsulfuron	173159-57-4	OES BCS*	TWA	10 mg/m3
Isoxadifen-ethyl	163520-33-0	OES BCS*	TWA	1 mg/m3

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance beige

Physical State liquid

Odor aromatic

pH 5.0 - 7.0 (1 %) at 23 °C

Vapor Pressure no data available

Vapor Density (Air = 1) no data available

Density ca. 0.96 g/cm³ at 20 °C

Evaporation rate no data available



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Boiling Point	no data available
Water solubility	dispersible
Minimum Ignition Energy	no data available
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	25 - 100 mPa.s at 20 °C Velocity gradient 20 /s
	20 - 60 mPa.s at 20 °C Velocity gradient 100 /s

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	no data available
Incompatibility	no data available
Hazardous Decomposition Products	no data available
Hazardous reactions	No hazardous reactions known.
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 ingredient, foramsulfuron, as well as, the herbicide safener, isoxadifen-ethyl.

Acute oral toxicity	rat: LD50: > 5,000 mg/kg
Acute dermal toxicity	rat: LD50: > 5,000 mg/kg



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Acute inhalation toxicity rat: LC50: > 5.2 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.

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: Moderate skin irritation.

Eye irritation rabbit: Mild eye irritation.

Sensitisation guinea pig: Non-sensitizing. Potential skin sensitizer.
mouse: Non-sensitizing.

Chronic toxicity Foramsulfuron was non-toxic at doses of ~1000 mg/kg/day in chronic studies in rats, mice and dogs.
Isoxadifen-ethyl caused kidney and/or liver effects in chronic studies in rats and dogs.

Assessment Carcinogenicity

Foramsulfuron was not carcinogenic in lifetime feeding studies in rats and mice.

Isoxadifen-ethyl was not carcinogenic in oncogenicity studies in rats and mice.

- ACGIH**
None.
- NTP**
None.
- IARC**
None.
- OSHA**
None.

Reproductive toxicity REPRODUCTION
Foramsulfuron was not a reproductive toxicant in a two-generation study in rats.

Isoxadifen-ethyl was not considered a primary reproductive toxicant. Decreased pup body weights occurred causing a delay in sexual maturation, however, these effects were considered secondary to maternal toxicity.

DEVELOPMENTAL TOXICITY
Foramsulfuron was not a developmental toxicant in rats and rabbits.

Isoxadifen-ethyl was not a developmental toxicant in rats and rabbits.

Neurotoxicity Foramsulfuron did not demonstrate the potential to cause neurotoxicity in



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standard toxicity studies using laboratory animals.

Isoxadifen-ethyl did not demonstrate the potential to cause neurotoxicity in standard toxicity studies using mice, rats, rabbits and dogs.

Mutagenicity

Isoxadifen-ethyl was not genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to aquatic plants Selenastrum capricornutum
Growth rate
EC50: > 5 mg/l
Exposure time: 96 h

Lemna gibba (duckweed)
Growth rate
EC50: 0.75 µg/l
Exposure time: 7 d

Toxicity to other organisms

Long Term Exposure/Reproduction
Colinus virginianus (Bobwhite quail)
NOEC: > 1,000 ppm
The value mentioned relates to the active ingredient.

Long Term Exposure/Reproduction
Anas platyrhynchos (Mallard duck)
NOEC: > 1,000 ppm
The value mentioned relates to the active ingredient.

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 surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not allow to get into surface water, drains and ground water. Do not apply when weather conditions favor runoff or drift.



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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations. 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.

Container Disposal Do not re-use empty containers. Triple rinse containers. Puncture container to avoid re-use. Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION

TDG

UN-Number **3082**
 Labels 9
 Packaging group III
 Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ISOXADIFEN-ETHYL, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC SOLUTION)

49CFR

UN-Number **3082**
 Class 9
 Packaging group III
 Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (ISOXADIFEN-ETHYL, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC SOLUTION, NAPHTHALENE)

RQ Reportable Quantity is reached with 31,250 lb of product.

IMDG

UN-Number **3082**
 Class 9
 Packaging group III
 Marine pollutant Marine Pollutant
 Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ISOXADIFEN-ETHYL, SOLVENT NAPHTHA (PETROLEUM) HEAVY AROMATIC SOLUTION)

IATA

UN-Number **3082**
 Class 9
 Packaging group III
 Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.



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SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Reactivity - 0 Others - none

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

Reason to Revise: Updated for general editorial purposes. The following sections have been revised: Section 11: Toxicological Information. Section 14: Transport Information.

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

Revision Date: 06/23/2010

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