



Material Safety Data Sheet
SENCOR® 480 F FLOWABLE HERBICIDE

MSDS Number: 102000013572
 MSDS Version 2.0
 Revision Date: 03/07/2011
 Print Date: 03/07/2011

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name SENCOR® 480 F FLOWABLE HERBICIDE
MSDS Number 102000013572
PCP Registration No. 26280

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 Caution! Harmful if swallowed, inhaled or absorbed through the skin. Avoid contact with skin, eyes and clothing. Avoid breathing dust or spray mist.

Physical State liquid suspension

Odor weak characteristic

Appearance white

Exposure routes Eye contact, Skin Absorption, Inhalation, Ingestion

Immediate Effects

Eye Mild eye irritation. Avoid contact with eyes.

Skin slight irritation Avoid contact with skin and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation May be harmful if inhaled.

Chronic or Delayed Long-Term This product or its components may have target organ effects.



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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Metribuzin	21087-64-9	41.00
Sodium 2-[methyloleoylamino] ethane-1-sulphonate	137-20-2	1.00
Glycerine	56-81-5	15.00

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 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	> 100 °C / 212 °F No flash point - Determination conducted up to the boiling point.
Autoignition temperature	no data available
Lower Flammability Limit	no data available
Upper Flammability Limit	no data available
Explosiveness	no data available



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Fire and Explosion Hazards	In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid) Carbon monoxide (CO) nitrogen oxides (NOx) Sulphur oxides
Suitable extinguishing media	Water, Dry chemical, Carbon dioxide (CO2), Foam, Sand
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. Cool closed containers exposed to fire with water spray. 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. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.
Methods for cleaning up	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. Decontaminate tools and equipment following cleanup.
Additional advice	Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation. Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7. HANDLING AND STORAGE

Handling procedures	Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.
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.



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Store in original container and out of the reach of children, preferably in a locked storage area.

Keep away from direct sunlight.

Keep away from food, drink and animal feedingstuffs.

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.

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

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection	Follow all label instructions. 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. or Face-shield
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

Metribuzin	21087-64-9	OES BCS*	TWA	0.56 mg/m3
		OEL (QUE)	TWA	5 mg/m3
		CAD AB OEL	TWA	5 mg/m3
		CAD BC OEL	TWA	5 mg/m3
		CAD ON OEL	TWAEV	5 mg/m3
Glycerine	56-81-5	OEL (QUE)	TWA	10 mg/m3
		CAD AB OEL	TWA	10 mg/m3
		CAD BC OEL	TWA	10 mg/m3
		CAD BC OEL	TWA	3 mg/m3
		CAD ON OEL	TWAEV	10 mg/m3



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OEL (QUE) TWA 10 mg/m3

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white
Physical State	liquid suspension
Odor	weak characteristic
pH	5.0 - 8.0 (100 %) at 20 °C
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Specific Gravity	not applicable
Density	ca. 1.16 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	-10 °C / 14 °F
Water solubility	miscible
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	600 - 1,600 mPa.s at 20 °C

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	Sustained temperatures above 37.8 °C (100 °F).
Incompatibility	Aldehydes Bases Ketones
Hazardous	Thermal decomposition



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Decomposition Products Amines
 Carbon dioxide (CO₂)
 Mercaptans
 Sulphur oxides

Chemical Stability Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute studies have not been performed on this product as formulated. The acute toxicology information is bridged from a very similar formulation. The non-acute information pertains to the active ingredient, metribuzin.

Acute oral toxicity female rat: LD50: 1,078 mg/kg
 male rat: LD50: 1,865 mg/kg

Acute dermal toxicity male/female combined rat: LD50: > 2,000 mg/kg

Acute inhalation toxicity male/female combined rat: LC50: 3.055 mg/l
 Exposure time: 4 h
 Determined in the form of liquid aerosol.
 (actual)

male/female combined rat: LC50: 12.22 mg/l
 Exposure time: 1 h
 Determined in the form of liquid aerosol.
 Extrapolated from the 4 hr LC50.
 (actual)

Skin irritation rabbit: Mild skin irritation.

Eye irritation rabbit: Minimally irritating.

Sensitisation guinea pig: Non-sensitizing.
 OECD Test Guideline 406, Buehler test

Chronic toxicity Metribuzin caused liver, kidney, thyroid and/or testicular effects in chronic dietary studies in rats and dogs. In addition, anemia was observed in dogs.

Assessment Carcinogenicity

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

ACGIH		
Metribuzin	21087-64-9	Group A4
NTP		
None.		
IARC		
None.		
OSHA		



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None.

Reproductive toxicity REPRODUCTION: Metribuzin was not a reproductive toxicant in a 2-generation reproductive study in rats.

DEVELOPMENTAL TOXICITY: Metribuzin was not a primary developmental toxicant in laboratory animals. Developmental effects were observed only at doses that caused maternal toxicity.

Assessment neurotoxicity Metribuzin has been tested in acute and subchronic neurotoxicity screening studies in rats. Transient neurobehavioral effects (e.g., decreased motor activity) were observed in the acute study. Neuropathological changes were not observed in either study.

Mutagenicity Metribuzin was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish Rainbow trout (*Oncorhynchus mykiss*)
 LC50: 74.6 mg/l
 Exposure time: 96 h
 The value mentioned relates to the active ingredient.

Toxicity to aquatic plants *Desmodosmus subspicatus*
 Growth rate
 IC50: 0.022 mg/l
 Exposure time: 72 h
 The value mentioned relates to the active ingredient.

Acute Toxicity to Aquatic Invertebrates Water flea (*Daphnia magna*)
 EC50: 49.6 mg/l
 Exposure time: 48 h
 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.



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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Container Disposal Triple rinse containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke.

SECTION 14. TRANSPORT INFORMATION

TDG Not dangerous goods / not hazardous material

49CFR Not dangerous goods / not hazardous material

IMDG

UN-Number **3082**
Class 9
Packaging group III
Marine pollutant YES
Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (METRIBUZIN 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. (METRIBUZIN 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. 26280

US Federal Regulations

TSCA list

Sodium 2-[methyleoleoylamino] ethane-1-sulphonate 137-20-2
Glycerine 56-81-5

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.



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SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Metribuzin	21087-64-9	1.0%
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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

Metribuzin	21087-64-9	IL, MN, NJ, RI
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Canadian Regulations

Canadian Domestic Substance List

Sodium 2-[methyloleoylamino] ethane-1-sulphonate	137-20-2
Glycerine	56-81-5

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Metribuzin	21087-64-9
Glycerine	56-81-5

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1	Flammability - 1	Reactivity - 1	Others - none
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HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1	Flammability - 1	Physical Hazard - 1	PPE -
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0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Updated for general editorial purposes. The following sections have been revised:
Section 14: Transport Information. Section 16: Other Information.

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



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