SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: SENCOR® 4 FLOWABLE HERBICIDE
MSDS Number: 102000013572
EPA Registration No.: 264-735

Bayer CropScience
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: 1-866-99BAYER (1-866-992-2937)

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Average % by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metribuzin</td>
<td>21087-64-9</td>
<td>41.00</td>
</tr>
<tr>
<td>Sodium 2-[methyloleoylamino] ethane-1-sulphonate</td>
<td>137-20-2</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Trade Secret Ingredient(s)

SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview
Caution! Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes and clothing.

Physical State
liquid suspension

Odor
weak characteristic

Appearance
white

Routes of Exposure
Eye contact, Skin Absorption, Inhalation, Ingestion

Immediate Effects

Eye
Avoid contact with eyes. Mild eye irritation.

Skin
Slight irritation. Do not get in eyes, on skin, or on clothing.

Ingestion
Harmful if swallowed. Do not take internally.

Inhalation
May be harmful if inhaled.

SECTION 4. FIRST AID MEASURES
Material Safety Data Sheet  
SENCOR® 4 FLOWABLE HERBICIDE

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  
There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE FIGHTING MEASURES

Flash point  
> 100 °C / 212 °F  
No flash point - Determination conducted up to the boiling point.

Fire and Explosion Hazards  
In the event of fire the following can 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. Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers/tanks exposed to fire with water spray.

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

Dust Explosion Class  
Not applicable.
### SECTION 6. ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th><strong>Personal Precautions</strong></th>
<th>Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.</th>
</tr>
</thead>
</table>
| **Methods for Cleaning Up** | Take up with absorbent material (e.g. sand, diatomaceous earth or a proprietary absorbent material). 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

<table>
<thead>
<tr>
<th><strong>Handling Procedures</strong></th>
<th>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. For personal protection see section 8.</th>
</tr>
</thead>
</table>
| **Storing Procedures** | Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.  

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. |
| **Min/Max Storage Temperatures** | Do not transport or store below 50 °C / 122 °F  

Do not transport or store above -10 °C / 14 °F  

The 30-day storage temperature average must not exceed the recommended maximum. |
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
This product contains material which are Trade Secret and may have Occupational Exposure Limits.

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>ACGIH</th>
<th></th>
<th>NIOSH</th>
<th></th>
<th>OSHA Z1A</th>
<th></th>
<th>US CA OEL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Metribuzin</td>
<td>21087-64-9</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>REL</td>
<td>5 mg/m³</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
white

Physical State
liquid suspension

Odor
weak characteristic

pH
5.0 - 8.0 (100 %) at 20 °C

Specific Gravity
1.16 at 20 °C

Density
approx. 1.16 g/cm³ at 20 °C

Melting / Freezing Point
-10 °C / 14 °F

Water solubility
miscible

Viscosity
600 - 1,600 mPa.s at 20 °C
SECTION 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Chemical Stability</th>
<th>Do not store at temperatures below -10 °C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions to Avoid</td>
<td>Sustained temperatures above 37.8 °C (100 °F).</td>
</tr>
<tr>
<td>Incompatibility</td>
<td>Aldehydes, Bases, Ketones</td>
</tr>
<tr>
<td>Hazardous</td>
<td>Thermal decomposition</td>
</tr>
<tr>
<td>Decomposition</td>
<td>Amines, Carbon dioxide (CO2), mercaptans, Sulphur oxides</td>
</tr>
<tr>
<td>Reactions</td>
<td>Stable under recommended storage conditions.</td>
</tr>
</tbody>
</table>

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 a respirable aerosol.
(actual)

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

Skin Irritation
rabbit: Mild skin irritation.

Eye Irritation
rabbit: Minimally irritating.

Sensitization
guinea pig: Non-sensitizing.

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
None.

Reproductive & Developmental 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.

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
Desmodesmus 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.

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. If burned, stay out of smoke. 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.

SECTION 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:
Not regulated for Domestic Surface Transportation

FREIGHT CLASSIFICATION:
Compounds, Tree or Weedkilling, N.O.I., other than poison, having a density of 20 LBS or greater per cubic foot

SECTION 15. REGULATORY INFORMATION

This product contains material(s) which are Trade Secret and are on various Regulatory Lists. These material(s) are not listed below.

EPA Registration No. 264-735

US Federal Regulations

TSCA list

Sodium 2-[methyloleoylamino] ethane-1-sulphonate 137-20-2

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

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Metrizobin 21087-64-9 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
Material Safety Data Sheet
SENCOR® 4 FLOWABLE HERBICIDE

harm.

US State Right-To-Know Ingredients
Metribuzin 21087-64-9 IL, MN, NJ, RI

Canadian Regulations
Canadian Domestic Substance List
Sodium 2-[methyloleoylamino] ethane-1-sulphonate 137-20-2

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
Sodium 2-[methyloleoylamino] ethane-1-sulphonate 137-20-2

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):
Health - 1  Flammability - 1  Reactivity - 1  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. Updated Section 1: Chemical Product and Company Information; Updated Section 2: Composition/Information on Ingredients; Updated Section 11: Toxicological Information; Updated Section 15: Regulatory Information.

Revision Date: 03/14/2007

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