SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: SENCOR DF 75% Dry Flowable Herbicide

Chemical Name: Metribuzin Technical
Common Name: Metribuzin Technical
MSDS Number: R000008438
Chemical Family: Metribuzin Technical
Chemical Formulation: Metribuzin Technical
EPA Registration No.: 264-738

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)

Product Use Description: Sencor DF 75% Dry Flowable Herbicide is used for the control of certain grasses and broadleaf weeds. The maximum use rate is 1.33 lbs per acre (1.0 lbs active ingredient per acre).

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS No.</th>
<th>Concentration % by Weight</th>
<th>Minimum</th>
<th>Maximum</th>
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<td>21087-64-9</td>
<td>73.0000</td>
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<td>Crystalline Silica (Quartz)</td>
<td>14808-60-7</td>
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SECTION 3. HAZARDS IDENTIFICATION

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

Emergency Overview
Caution! Hazards to humans and domestic animals. Harmful if swallowed or absorbed through skin. Causes moderate eye irritation.

Physical State
Solid
Crystalline

Odor
Musty

Appearance
Off-white

Routes of Exposure
Skin contact, Skin Absorption, Eye contact

Immediate Effects
Eye
Causes moderate eye irritation.

Skin
May be harmful if absorbed through skin.

Ingestion
May be harmful if swallowed.

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 poison control center or doctor for treatment advice.

Skin
Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Ingestion
Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Notes to physician
The compound does not cause any definite symptoms that would be diagnostic. Poisoning is accompanied by breathing difficulties and sedation.

Treatment
Treat symptomatically.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point
Not applicable
Suitable Extinguishing Media

- Water, Dry chemical

Fire Fighting Instructions

- Keep out of smoke. Cool containers exposed to fire with water. Fight fire from upwind position. Fire fighters should wear self-contained breathing apparatus. Contain runoff to prevent entry into sewers or waterways.

SECTION 6. ACCIDENTAL RELEASE MEASURES

General and Disposal

- Isolate hazard area. Keep unauthorized people away. Do not walk through spilled material. Avoid contact with spilled product or contaminated surfaces. Avoid creation of dusty conditions.

- Use proper protective equipment to minimize personal exposure (see Section 8). Sweep up and shovel into suitable containers for disposal. Clean up residual material by washing area with water and detergent. Flush with water.

Land Spill or Leaks

- Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers or other waterways or contact vegetation. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal.

SECTION 7. HANDLING AND STORAGE

Storing Procedures

- Store in a cool, dry area. Store in an area that is out of reach of children and animals, away from the home or home garden. Do not contaminate water, food, or feed by storage or handling.

Min/Max Storage Temperatures

- 30 day average not to exceed 100 F

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye/Face Protection

- Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles.

Hand Protection

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

Respiratory Protection

- No personal respiratory protective equipment normally required. When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

General Protection

- Avoid contact with skin and eyes. Clean water and soap should be available for washing in case of eye or skin contamination. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using...
tobacco, or using the toilet. Educate and train employees in safe use of the product. Follow all label instructions.

**Exposure Limits**

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH TWA</th>
<th>NIOSH REL</th>
<th>OSHA Z1A TWA</th>
<th>NIOSH REL</th>
<th>Crystalline Silica (Quartz)</th>
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<tr>
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<td>Crystalline Silica</td>
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</table>

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**
- Off-white

**Physical State**
- Solid
- Crystalline

**Odor**
- Musty

**Bulk Density**
- 33 - 37 lbs/cu.ft.

**Solubility (in water)**
- (for metribuzin technical)
  - 0.1050 g/l at 20 °C

**SECTION 10. STABILITY AND REACTIVITY**

**Chemical Stability**
- This is a stable material.

**Conditions to Avoid**
- Sustained temperatures above 100°F; highly alkaline conditions for extended periods of time. Metribuzin may react with ketones and aldehydes.

**Incompatibility**
- Strong bases

**Hazardous Products of Decomposition**
- Carbon dioxide (CO2)
- Sulfur dioxide
- Mercaptans
- Amines
Hazardous Polymerization (Conditions to avoid)  
Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the active ingredient, metribuzin.

Acute Oral Toxicity  
Male Rat: LD50: 2,365 mg/kg
Female Rat: LD50: 1,449 mg/kg

Acute Dermal Toxicity  
Male and Female Rat: LD50: > 2,000 mg/kg
Male and Female Rabbit: LD50: > 5,000 mg/kg

Acute Inhalation Toxicity  
Male and Female Rat: 1-hr exposure to dust (extrapolated from 4-hr LC50): > 19.36 mg/l
Male and Female Rat: LC50: 4-hr exposure to dust: > 4.84 mg/l

Skin Irritation  
Rabbit: Mild skin irritation

Eye Irritation  
Rabbit: Moderate eye irritation.

Sensitization  
Guinea pig: Not a skin sensitizer.

Sub-Chronic Toxicity  
Metribuzin caused increased cholesterol levels, liver enzyme induction and secondary effects on thyroxin levels in a subacute dermal toxicity study in rabbits.
In subacute inhalation studies, rats exposed to aerosol concentrations of metribuzin exhibited behavioral changes, liver enzyme induction and secondary effects on organ weights associated with decreased body weight gains.

Chronic Toxicity  
Major effects in rats and dogs from long-term exposure to metribuzin included decreased body weight gains, decreased food consumption, anemia, mortality and/or organ effects (liver, kidney, thyroid, testis).

Assessment Carcinogenicity  
In oncogenicity studies in rats and mice, metribuzin was not considered carcinogenic in either species.

ACGIH  
Metribuzin Technical  21087-64-9  Group A4
Crystalline Silica (Quartz)  14808-60-7  Group A2

NTP  
Crystalline Silica (Quartz)  14808-60-7

IARC  
OSHA  
None
Reproductive & Developmental Toxicity

Reproduction: There was no evidence of reductive toxicity in a 2-generation reproductive study in rats treated with metribuzin. Offspring at the highest dose exhibited reduced body weight gains starting a Day-14 lactation, an age correlating with the consumption of treated diets.

Developmental Toxicity: In developmental toxicity studies in rats and rabbits, there was no evidence of a teratogenic potential for metribuzin. In rats, secondary developmental effects were observed only at the high dose and in conjunction with maternal toxicity.

Neurotoxicity

Transient neurobehavioral symptoms were observed in an acute oral neurotoxicity screening study in rats treated with metribuzin. There were no correlating morphological changes observed in the neural tissues.

There was no evidence of neurotoxicity in a subchronic neurotoxicity screening study in rats treated with dietary concentrations of metribuzin.

Mutagenicity

Numerous in vitro and in vivo mutagenicity studies have been conducted with metribuzin. The data, taken collectively, demonstrates that metribuzin is not genotoxic.

SECTION 12. ECOLOGICAL INFORMATION

Environmental Precautions

Apply this product only as specified on the label. Keep out of lakes, streams, ponds, drainage basins, tidal marshes, and estuaries.

This product has been thoroughly evaluated for ecological effects. Bayer CropScience will provide a summary of specific data upon written request. In case of an emergency or other request, call one of the numbers on page 1.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance

Follow container label instructions for disposal of wastes generated during use in compliance with the product label. 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. Do not reuse container.

RCRA Classification

Not Regulated under this Statute
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

EPA Registration No. 264-738

US Federal Regulations
- TSCA list
  Crystalline Silica (Quartz) 14808-60-7
- TSCA 12b export notification
  None
- SARA Title III - section 302 - notification and information
  None
- SARA Title III - section 313 - toxic chemical release reporting
  Metribuzin Technical 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 reproductive harm.

US State right-to-know ingredients
- Crystalline Silica (Quartz) 14808-60-7 IL, MA, MN, PA

Canadian Regulations
- Canadian Domestic Substance List
  Crystalline Silica (Quartz) 14808-60-7

Environmental
- CERCLA
  None
- Clean Water Section 307 Priority Pollutants
  None
- Safe Drinking Water Act Maximum Contaminant Levels
  None

International Regulations
- EU Classification
Material Safety Data Sheet

SENCOR DF 75% Dry Flowable Herbicide

None

European Inventory of Existing Commercial Substances (EINECS)
Crystalline Silica (Quartz)  14808-60-7

SECTION 16. OTHER INFORMATION

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<th>Reactivity</th>
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Reason to Issue: Revised format; updated toxicology information.

Approval Date: 03/09/2004

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