



**Material Safety Data Sheet**

**SOBERAN™ HERBICIDE**

MSDS Number: 102000017388

MSDS Version 2.0

Revision Date: 12/03/2007

**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product Name** SOBERAN™ HERBICIDE  
**MSDS Number** 102000017388  
**EPA Registration No.** 264-860

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**

| <u>Hazardous Component Name</u> | <u>CAS-No.</u> | <u>Average % by Weight</u> |
|---------------------------------|----------------|----------------------------|
| Tembotrione                     | 335104-84-2    | 34.50                      |
| Isoxadifen-ethyl                | 163520-33-0    |                            |
| 1,2-Propanediol                 | 57-55-6        |                            |

**SECTION 3. HAZARDS IDENTIFICATION**

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

|                                     |   |
|-------------------------------------|---|
| <b><u>Emergency Overview</u></b>    | Caution! Harmful if swallowed. Causes eye irritation. Avoid contact with skin, eyes and clothing. |
| <b>Physical State</b>               | viscous liquid  |
| <b>Appearance</b>                   | off-white   |
| <b>Routes of Exposure</b>           | Ingestion, Eye contact, Skin contact  |
| <b>Immediate Effects</b>            |   |
| <b>Eye</b>                          | Moderate eye irritation. Do not get in eyes.  |
| <b>Skin</b>                         | May cause slight irritation. Avoid contact with skin and clothing.                                |
| <b>Chronic or Delayed Long-Term</b> | This product or its components may have target organ effects.                                     |

**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.



**Material Safety Data Sheet**

MSDS Number: 102000017388  
MSDS Version 2.0

**SOBERAN™ HERBICIDE**

|                                     |   |
|-------------------------------------|---|
| <b>Eye</b>                          | 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.   |
| <b>Skin</b>                         | 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.   |
| <b>Ingestion</b>                    | 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. |
| <b>Inhalation</b>                   | 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.  |
| <b>Notes to Physician Treatment</b> | There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.   |

**SECTION 5. FIRE FIGHTING MEASURES**

|                                     |   |
|-------------------------------------|---|
| <b>Flash point</b>                  | > 93.4 °C / 200.1 °F  |
| <b>Suitable Extinguishing Media</b> | Water spray, Foam, Carbon dioxide (CO2), Dry powder   |
| <b>Fire Fighting Instructions</b>   | Keep out of smoke. Fight fire from upwind position. Cool closed containers/ tanks exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.<br><br>Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing. |

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

|                                |  |
|--------------------------------|--|
| <b>Personal Precautions</b>    | Isolate hazard area. Keep unauthorized people away. Use personal protective equipment. Avoid contact with spilled product or contaminated surfaces.  |
| <b>Methods for Cleaning Up</b> | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. |
| <b>Additional Advice</b>       | Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.  |



**Material Safety Data Sheet**

**SOBERAN™ HERBICIDE**

MSDS Number: 102000017388  
MSDS Version 2.0

**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 pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

**Work/Hygienic Procedures** 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.

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 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.

Train employees in safe use of the product. Follow all label instructions.

**Eye/Face Protection** protective eyewear

**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**

|                 |             |                  |          |            |
|-----------------|-------------|------------------|----------|------------|
| Tembotrione     | 335104-84-2 | OES BCS*         |          | 0.15 mg/m3 |
| 1,2-Propanediol | 57-55-6     | WEEL             | TWA      | 10 mg/m3   |
|                 |             | Form of exposure | Aerosol. |            |

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



## Material Safety Data Sheet

### SOBERAN™ HERBICIDE

MSDS Number: 102000017388

MSDS Version 2.0

#### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|                       |   |
|-----------------------|---|
| <b>Appearance</b>     | off-white                               |
| <b>Physical State</b> | viscous liquid                          |
| <b>pH</b>             | 3.0 (10 %)                              |
| <b>Density</b>        | approx. 1.22 g/cm <sup>3</sup> at 20 °C |

#### SECTION 10. STABILITY AND REACTIVITY

|   |   |
|---|---|
| <b>Hazardous Decomposition Products</b> | Thermal decomposition can lead to release of:<br>Carbon monoxide<br>Nitrogen oxides (NO <sub>x</sub> )<br>Hydrogen fluoride (HF)<br>Hydrogen chloride (HCl) |
|---|---|

#### 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, tembotrione, as well as, the herbicide safener, isoxadifen-ethyl.

|                                  |   |
|----------------------------------|---|
| <b>Acute Oral Toxicity</b>       | female rat: LD50: 1,750 mg/kg   |
| <b>Acute Dermal Toxicity</b>     | rat: LD50: > 5,000 mg/kg  |
| <b>Acute Inhalation Toxicity</b> | rat: LC50: > 2.1 mg/l<br>Exposure time: 4 h<br>Determined in the form of liquid aerosol.<br>highest concentration tested<br>No deaths<br><br>rat: LC50: > 8.4 mg/l<br>Exposure time: 1 h<br>Determined in the form of liquid aerosol.<br>Extrapolated from the 4 hr LC50. |
| <b>Skin Irritation</b>           | rabbit: Slight irritation.  |
| <b>Eye Irritation</b>            | rabbit: Mild eye irritation.  |
| <b>Sensitization</b>             | guinea pig: Non-sensitizing.  |
| <b>Chronic Toxicity</b>          | Tembotrione caused effects in the eye, kidney, liver, pancreas, thyroid and/or gall bladder in chronic studies in mice, rats and dogs. In addition, hematologic   |



Material Safety Data Sheet

SOBERAN™ HERBICIDE

MSDS Number: 102000017388
MSDS Version 2.0

parameters were affected in the rat and dog.

Isoxadifen-ethyl caused kidney and/or liver effects in chronic dietary studies in rats and dogs.

Assessment Carcinogenicity

Tembotrione 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 & Developmental Toxicity

REPRODUCTION:

Tembotrione was not a reproductive toxicant in a multi-generation reproduction 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:

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

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

Neurotoxicity

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

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

Mutagenicity

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

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 Fish

Oncorhynchus mykiss (rainbow trout)



**Material Safety Data Sheet**

**SOBERAN™ HERBICIDE**

MSDS Number: 102000017388  
MSDS Version 2.0

LC50: 5.41 mg/l  
Exposure time: 96 h

**Toxicity to Aquatic Plants** Pseudokirchneriella subcapitata  
Growth rate  
EC50: 15.4 mg/l  
Exposure time: 72 h

**Acute Toxicity to Aquatic Invertebrates** Water flea (Daphnia magna)  
EC50: 33.5 mg/l  
Exposure time: 48 h

**Environmental Precautions** Do not allow to get into surface water, drains and ground water.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**General Disposal Guidance** 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. Never place unused product down any indoor or outdoor drain.

**Container Disposal** Do not re-use empty containers. Triple rinse containers. 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**

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. 264-860

**US Federal Regulations**

**TSCA list**

|                 |             |
|-----------------|-------------|
| Isxadifen-ethyl | 163520-33-0 |
| 1,2-Propanediol | 57-55-6     |

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

None.



**Material Safety Data Sheet**

MSDS Number: 102000017388  
MSDS Version 2.0

**SOBERAN™ HERBICIDE**

**SARA Title III - Section 302 - Notification and Information**

None.

**SARA Title III - Section 313 - Toxic Chemical Release Reporting**

None.

**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**

1,2-Propanediol 57-55-6 MN, RI

**Canadian Regulations**

**Canadian Domestic Substance List**

1,2-Propanediol 57-55-6

**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)**

1,2-Propanediol 57-55-6

**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

Health - 1 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 Section 1, 2, 3 & 8

Revision Date: 12/03/2007

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.