



**Material Safety Data Sheet**

**CAPRENO™ HERBICIDE**

MSDS Number: 102000016695

MSDS Version 1.1

Revision Date: 07/25/2008

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

**Product Name** CAPRENO™ HERBICIDE  
**MSDS Number** 102000016695  
**EPA Registration No.** 264-1063

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>
Temboatrione	335104-84-2	28.30
Thiencarbazone-methyl	317815-83-1	5.60
Isoxadifen-ethyl	163520-33-0	
Glycerine	56-81-5	

**SECTION 3. HAZARDS IDENTIFICATION**

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

**Emergency Overview** Caution! Harmful if swallowed or absorbed through skin. Moderate eye irritation. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

**Physical State** liquid

**Odor** characteristic

**Appearance** off-white

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

**Immediate Effects**

**Eye** May cause mild irritation to eyes. Do not get in eyes.

**Skin** May cause slight irritation. Harmful if absorbed through skin. Do not get on skin or clothing. Did not cause sensitization on laboratory animals.

**Ingestion** Harmful if swallowed. Do not take internally.

**Inhalation** Do not breathe vapours or spray mist.



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**Chronic or Delayed Long-Term**      This product or its components may have long term (chronic) health effects.

**SECTION 4. FIRST AID MEASURES**

<b>General</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<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>	> 93.3 °C / 199.9 °F
<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Fire Fighting Instructions</b>	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**



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<b>Personal Precautions</b>	Keep unauthorized people away. Isolate hazard area. 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). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.
<b>Additional Advice</b>	Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation.

**SECTION 7. HANDLING AND STORAGE**

<b>Handling Procedures</b>	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.
<b>Storing Procedures</b>	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.
<b>Work/Hygienic Procedures</b>	<p>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.</p> <p>Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.</p>

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>General Protection</b>	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.
<b>Eye/Face Protection</b>	Chemical resistant goggles must be worn.
<b>Hand Protection</b>	Chemical resistant nitrile rubber gloves
<b>Body Protection</b>	Wear long-sleeved shirt and long pants and shoes plus socks.
<b>Respiratory Protection</b>	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.



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**Exposure Limits**

Temboatrione	335104-84-2	OES BCS*		0.15 mg/m3
Isoxadifen-ethyl	163520-33-0	OES BCS*		1 mg/m3
Glycerine	56-81-5	ACGIH	TWA	10 mg/m3
		OSHA Z1	PEL	5 mg/m3
		OSHA Z1	PEL	15 mg/m3
		OSHA Z1A	TWA	5 mg/m3
		OSHA Z1A	TWA	10 mg/m3
		TX ESL	ST ESL	50 ug/m3
		TX ESL	AN ESL	5 ug/m3

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

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	off-white
<b>Physical State</b>	liquid
<b>Odor</b>	characteristic
<b>pH</b>	3.2 (10 %)
<b>Density</b>	1.22 g/cm <sup>3</sup> at 20 °C

**SECTION 10. STABILITY AND REACTIVITY**

**Hazardous Reactions** No hazardous reactions when stored and handled according to prescribed instructions.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredients, Thien carbazono-methyl and Temboatrione, as well as, the herbicide safener, Isoxadifen-ethyl.

**Acute Oral Toxicity** female rat: LD50: > 2,000 mg/kg

**Acute Dermal Toxicity** rat: LD50: > 2,000 mg/kg



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**Acute Inhalation Toxicity** rat: LC50: > 2.0 mg/l  
Exposure time: 4 h  
Determined in the form of liquid aerosol.  
highest concentration tested  
No deaths

rat: LC50: > 8.0 mg/l  
Exposure time: 1 h  
Determined in the form of liquid aerosol.  
Extrapolated from the 4 hr LC50.

**Skin Irritation** rabbit: Slight irritation.

**Eye Irritation** rabbit: Mild eye irritation.

**Sensitization** guinea pig: Non-sensitizing.

**Chronic Toxicity** Thien carbazono-methyl caused urinary tract irritation in long term studies in mice, rats and dogs.

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 parameters were affected in the rat and dog.

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

**Assessment Carcinogenicity**

Thien carbazono-methyl was not carcinogenic in a lifetime feeding study in rats. In a lifetime feeding study in mice, there was a low incidence of urinary bladder tumors at high doses secondary to the chronic irritation due to the presence of bladder stones. Thien carbazono-methyl was considered not to be directly carcinogenic in mice.

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

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

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

**Reproductive & Developmental Toxicity**

**REPRODUCTION:**  
Thien carbazono-methyl was not a reproductive toxicant in a two-generation study in rats. Thien carbazono-methyl caused toxicity in offspring at doses producing systemic toxicity in adult rats.



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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:**

Thiencarbazone-methyl was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed but were considered secondary to maternal 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**

Thiencarbazone-methyl was not a neurotoxicant in acute and subchronic neurotoxicity screening studies in rats.

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**

Thiencarbazone-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

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**

**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 apply when weather conditions favor runoff or drift. Drift or runoff from treated areas may adversely affect non-target plants. Apply this product as specified on the label.



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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 advice on product label and/or leaflet.
- Container Disposal** Follow advice on product label and/or leaflet. Triple rinse containers. Then offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill or incineration, or if allowed by State and Local authorities, by burning. If burned, stay out of smoke.

**SECTION 14. TRANSPORT INFORMATION**

- DOT CLASSIFICATION:**  
Not regulated for Domestic Surface Shipment
- 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.** 264-1063

**US Federal Regulations**

**TSCA list**

Isoxadifen-ethyl 163520-33-0  
Glycerine 56-81-5

**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**

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**

Glycerine 56-81-5 IL, MN, RI

**Canadian Regulations**

**Canadian Domestic Substance List**



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Glycerine

56-81-5

**Environmental**

**CERCLA**

None.

**Clean Water Section 307 Priority Pollutants**

None.

**Safe Drinking Water Act Maximum Contaminant Levels**

None.

**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

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

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

Reason to Revise: Updated Section 10: Stability and Reactivity.

Revision Date: 07/25/2008

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