



**CAPRENO® HERBICIDE**

Version 3 / USA  
102000016695

1/12  
Revision Date: 02/07/2014  
Print Date: 02/04/2015

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**Product identifier**

Trade name CAPRENO® HERBICIDE  
Product code (UVP) 79279213  
SDS Number 102000016695  
EPA Registration No. 264-1063

**Relevant identified uses of the substance or mixture and uses advised against**

Use Herbicide  
Restrictions on use See product label for restrictions.

**Information on manufacturer**

Bayer CropScience  
2 T.W. Alexander Drive  
Research Triangle PK, NC 27709  
United States

**Emergency telephone no.**

All Emergencies, 24hr/ 7 days 1-800-334-7577

**Product Information Telephone No.** 1-866-99BAYER (1-866-992-2937)

**SDS Information or Request** SDSINFO.BCS-NA@bayer.com

**SECTION 2: HAZARDS IDENTIFICATION**

**Classification in accordance with regulation HCS 29CFR §1910.1200**

Eye irritation : Category 2B

**Signal word:** Warning

**Hazard statements**

Causes eye irritation.

**Precautionary statements**

Wash thoroughly after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

**Other hazards**

No other hazards known.



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### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Tembotrione	335104-84-2	28.30
Thiencarbazone-methyl	317815-83-1	5.60
Isoxadifen-ethyl	163520-33-0	10.90
Glycerine	56-81-5	11.50
Polyarylether sulfate, ammonium salt	119432-41-6	3.50

### SECTION 4: FIRST AID MEASURES

#### Description of first aid measures

<b>General advice</b>	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
<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>Skin contact</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>Eye contact</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>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.

#### Most important symptoms and effects, both acute and delayed

**Symptoms** No symptoms known or expected.

#### Indication of any immediate medical attention and special treatment needed

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

### SECTION 5: FIREFIGHTING MEASURES

#### Extinguishing media

<b>Suitable</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable</b>	None known.



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<b>Special hazards arising from the substance or mixture</b>	In the event of fire the following may be released:, Carbon monoxide (CO), Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Hydrogen chloride (HCl), Nitrogen oxides (NOx), Sulphur oxides
<b>Advice for firefighters</b>	
<b>Special protective equipment for fire-fighters</b>	Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.
<b>Further information</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.
<b>Flash point</b>	No flash point - Determination conducted up to the boiling point.
<b>Autoignition temperature</b>	no data available
<b>Lower explosion limit</b>	no data available
<b>Upper explosion limit</b>	no data available
<b>Explosivity</b>	Not explosive 92/69/EEC, A.14 / OECD 113

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Precautions** Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

### Methods and materials for containment and cleaning up

**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. Clean contaminated floors and objects thoroughly, observing environmental regulations.

**Additional advice** Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.

**Reference to other sections** Information regarding safe handling, see section 7.  
Information regarding personal protective equipment, see section 8.  
Information regarding waste disposal, see section 13.

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## SECTION 7: HANDLING AND STORAGE

### Precautions for safe handling



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- Advice on safe handling** 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.
- Hygiene measures** Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.  
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.
- Conditions for safe storage, including any incompatibilities**
- Requirements for storage areas and containers** 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. Store in original container and out of the reach of children, preferably in a locked storage area.

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

**Control parameters**

Components	CAS-No.	Control parameters	Update	Basis
Tembotrione	335104-84-2	0.15 mg/m3 (TWA)		OES BCS*
Thiencarbazone-methyl	317815-83-1	10 mg/m3 (OES BCS)		OES BCS*
Isoxadifen-ethyl	163520-33-0	1 mg/m3 (TWA)		OES BCS*
Glycerine (Total dust.)	56-81-5	15 mg/m3 (PEL)	02 2006	OSHA Z1
Glycerine (Respirable fraction.)	56-81-5	5 mg/m3 (PEL)	02 2006	OSHA Z1
Glycerine (Respirable fraction.)	56-81-5	5 mg/m3 (TWA)	1989	OSHA Z1A
Glycerine (Total dust.)	56-81-5	10 mg/m3 (TWA)	1989	OSHA Z1A
Glycerine (Total dust and mist.)	56-81-5	10 mg/m3 (TWA)	06 2008	TN OEL
Glycerine (Respirable fraction and dust or fume.)	56-81-5	5 mg/m3 (TWA)	06 2008	TN OEL
Glycerine (Particulate.)	56-81-5	50 ug/m3 (ST ESL)	02 2013	TX ESL
Glycerine (Particulate.)	56-81-5	5 ug/m3 (AN ESL)	02 2013	TX ESL
Glycerine (Vapor.)	56-81-5	100 ug/m3 (AN ESL)	02 2013	TX ESL



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Glycerine (Vapor.)	56-81-5	1000 ug/m3 (ST ESL)	02 2013	TX ESL
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\*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

**Exposure controls**

**Personal protective equipment**

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

<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.
<b>Hand protection</b>	Chemical resistant nitrile rubber gloves
<b>Eye protection</b>	Chemical resistant goggles must be worn.
<b>Skin and body protection</b>	Wear long-sleeved shirt and long pants and shoes plus socks.
<b>General protective measures</b>	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.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	white to light beige
<b>Physical State</b>	Liquid
<b>Odor</b>	characteristic
<b>Odour Threshold</b>	no data available
<b>pH</b>	2.8 - 3.8 (10 %) at 23 °C
<b>Vapor Pressure</b>	no data available
<b>Vapor Density (Air = 1)</b>	no data available
<b>Density</b>	1.22 g/cm <sup>3</sup> at 20 °C
<b>Evaporation rate</b>	no data available
<b>Boiling Point</b>	no data available



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<b>Melting / Freezing Point</b>	no data available
<b>Water solubility</b>	dispersible
<b>Minimum Ignition Energy</b>	not applicable
<b>Decomposition temperature</b>	Stable under normal conditions.
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Viscosity</b>	950 - 1,400 cps  300 - 500 mPa.s at 20 °C Velocity gradient 20 /s  120 - 200 mPa.s at 20 °C Velocity gradient 100 /s
<b>Flash point</b>	No flash point - Determination conducted up to the boiling point.
<b>Autoignition temperature</b>	no data available
<b>Lower explosion limit</b>	no data available
<b>Upper explosion limit</b>	no data available
<b>Explosivity</b>	Not explosive 92/69/EEC, A.14 / OECD 113
<b>Other information</b>	Further safety related physical-chemical data are not known.

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**SECTION 10: STABILITY AND REACTIVITY**

<b>Reactivity</b>	
<b>Thermal decomposition</b>	Stable under normal conditions.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions</b>	No hazardous reactions when stored and handled according to prescribed instructions.
<b>Conditions to avoid</b>	Extremes of temperature and direct sunlight.



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<b>Incompatible materials</b>	Store only in the original container.
<b>Hazardous decomposition products</b>	No decomposition products expected under normal conditions of use.

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### SECTION 11: TOXICOLOGICAL INFORMATION

<b>Exposure routes</b>	Eye contact, Skin contact, Ingestion
<b>Immediate Effects</b>	
<b>Eye</b>	Moderate eye irritation.
<b>Skin</b>	May cause slight irritation. Harmful if absorbed through skin.
<b>Ingestion</b>	Harmful if swallowed.
<b>Information on toxicological effects</b>	
<b>Acute oral toxicity</b>	LD50 (female rat) > 2,000 mg/kg
<b>Acute inhalation toxicity</b>	LC50 (rat) > 2.0 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. highest concentration tested No deaths During intended and foreseen applications, no respirable aerosol is formed.  LC50 (rat) > 8.0 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50.
<b>Acute dermal toxicity</b>	LD50 (male/female combined rat) > 2,000 mg/kg
<b>Skin irritation</b>	Slight irritation (rabbit)
<b>Eye irritation</b>	Mild eye irritation. (rabbit)
<b>Sensitisation</b>	Non-sensitizing. (guinea pig) OECD Test Guideline 406, Buehler test

#### Assessment repeated dose toxicity

Tembotrione did not cause specific target organ toxicity in experimental animal studies.  
Thiencarbazone-methyl did not cause specific target organ toxicity in experimental animal studies.  
Isoxadifen-ethyl did not cause specific target organ toxicity in experimental animal studies.

#### Assessment Mutagenicity

Tembotrione was not mutagenic or genotoxic based on the overall weight of evidence in a



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battery of in vitro and in vivo tests.

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

Isxadifen-ethyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**Assessment Carcinogenicity**

Tembotrione caused at high dose levels an increased incidence of tumours in rats in the following organ(s): cornea. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.

Thiencarbazone-methyl was not carcinogenic in a lifetime feeding study in rats. Thiencarbazone-methyl caused at high dose levels an increased incidence of tumours in mice in the following organ(s): urinary bladder. The tumours seen with Thiencarbazone-methyl were caused through the chronic irritation due to the presence of bladder stones.

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

**ACGIH**

None.

**NTP**

None.

**IARC**

None.

**OSHA**

None.

**Assessment toxicity to reproduction**

Tembotrione did not cause reproductive toxicity in a two-generation study in rats.

Thiencarbazone-methyl did not cause reproductive toxicity in a two-generation study in rats.

Isxadifen-ethyl did not cause reproductive toxicity in a two-generation study in rats.

**Assessment developmental toxicity**

Tembotrione caused developmental toxicity only at dose levels toxic to the dams. Tembotrione caused a delayed ossification of foetuses, an increased incidence of variations. The developmental effects seen with Tembotrione are related to maternal toxicity.

Thiencarbazone-methyl did not cause developmental toxicity in rats and rabbits.

Isxadifen-ethyl did not cause developmental toxicity in rats and rabbits.

**Further information**

Only acute toxicity studies have been performed on the formulated product.

The non-acute information pertains to the active ingredient(s).

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**SECTION 12: ECOLOGICAL INFORMATION**

**Toxicity to fish**

LC50 (Rainbow trout (*Oncorhynchus mykiss*)) 6.06 mg/l  
Exposure time: 96 h

**Toxicity to aquatic invertebrates**

EC50 (Water flea (*Daphnia magna*)) 83.1 mg/l  
Exposure time: 48 h





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<b>Toxicity to aquatic plants</b>	EC50 (Pseudokirchneriella subcapitata) 40.6 mg/l Growth rate; Exposure time: 72 h  EC50 (Lemna gibba (duckweed)) 0.0181 mg/l Growth rate; Exposure time: 7 d
<b>Biodegradability</b>	Tembotrione: not rapidly biodegradable  Thiencarbazone-methyl: not rapidly biodegradable  Isoxadifen-ethyl: not rapidly biodegradable
<b>Koc</b>	Tembotrione: Koc:66  Thiencarbazone-methyl: Koc:100  Isoxadifen-ethyl: Koc:2512
<b>Bioaccumulation</b>	Tembotrione: Does not bioaccumulate. Thiencarbazone-methyl: Does not bioaccumulate. Isoxadifen-ethyl: Does not bioaccumulate.
<b>Mobility in soil</b>	Tembotrione: Mobile in soils  Thiencarbazone-methyl: Moderately mobile in soils  Isoxadifen-ethyl: Slightly mobile in soils
<b>Additional ecological information</b>	No other effects to be mentioned.
<b>Environmental precautions</b>	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**

**Waste treatment methods**



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<b>Product</b>	Do not contaminate water, food, or feed by disposal. Dispose in accordance with all local, state/provincial and federal regulations.
<b>Contaminated packaging</b>	Follow advice on product label and/or leaflet. 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.
<b>RCRA Information</b>	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

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**SECTION 14: TRANSPORT INFORMATION**

<b>49CFR</b>	Not dangerous goods / not hazardous material
<b>IMDG</b>	
UN number	<b>3082</b>
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIENCARBAZONE-METHYL, ISOXADIFEN-ETHYL SOLUTION)
<b>IATA</b>	
UN number	<b>3082</b>
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (THIENCARBAZONE-METHYL, ISOXADIFEN-ETHYL 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.

Freight Classification: COMPOUNDS, TREE OR WEEDKILLING, N.O.I., other than poison; HAVING A DENSITY OF GREATER THAN 20 LBS. PER CUBIC FOOT

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**SECTION 15: REGULATORY INFORMATION**

**EPA Registration No.** 264-1063

**US Federal Regulations**

**TSCA list**

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

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

Isxadifen-ethyl 163520-33-0

**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 MN

**Canadian Regulations**

**Canadian Domestic Substance List**

Glycerine 56-81-5  
Polyarylether sulfate, ammonium salt 119432-41-6

**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)**

Glycerine 56-81-5

**EPA/FIFRA Information:**

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:



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**Signal word:** Caution!

**Hazard statements:** 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.

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**SECTION 16: OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

Health - 2      Flammability - 1      Instability - 1      Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1      Flammability - 1      Physical Hazard - 0      PPE -

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

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

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