



**Material Safety Data Sheet**

**CENTURION® EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE**

MSDS Number: 102000012194

MSDS Version 2.0

Revision Date: 05/21/2010

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

**Product name** CENTURION® EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE  
**MSDS Number** 102000012194  
**PCP Registration No.** 27598

Bayer CropScience Inc  
 #200, 160 Quarry Park Blvd, SE  
 Calgary, Alberta T2C 3G3  
 Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)  
 For Product Information call: 1-888-283-6847

**SECTION 2. HAZARDS IDENTIFICATION**

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

**Emergency Overview** Warning! Causes eye irritation. Causes skin irritation. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapour or mist.

**Physical State** liquid slightly viscous  
**Odor** hydrocarbon-like aromatic  
**Appearance** amber  
**Exposure routes** Eye contact, Skin contact, Inhalation  
**Immediate Effects**  
     **Eye** Causes eye irritation. Do not get in eyes.  
     **Skin** Causes skin irritation. Avoid contact with skin and clothing.  
     **Ingestion** Do not take internally.  
     **Inhalation** Avoid inhalation of vapour or mist.  
**Potential Environmental Effect** Very toxic to aquatic organisms.



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### CENTURION® EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE

MSDS Number: 102000012194  
MSDS Version 2.0

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Clethodim	99129-21-2	25.00
Distillates (petroleum), hydrotreated light	64742-47-8	
Trimethyl benzene (all Isomers)	25551-13-7	
Naphthalene	91-20-3	

#### 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>	Treat symptomatically. There is no specific antidote.

#### SECTION 5. FIRE FIGHTING MEASURES

<b>Flash point</b>	63 °C / 145 °F
<b>Autoignition temperature</b>	no data available
<b>Lower Flammability Limit</b>	no data available
<b>Upper Flammability Limit</b>	no data available
<b>Explosiveness</b>	no data available



**Material Safety Data Sheet**

MSDS Number: 102000012194  
MSDS Version 2.0

**CENTURION® EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE**

<b>Suitable extinguishing media</b>	Water spray, Carbon dioxide (CO <sub>2</sub> ), Foam, Dry chemical
<b>Fire Fighting Instructions</b>	<p>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.</p> <p>Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.</p>
<b>Dust Explosion Class</b>	Not applicable.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

<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>	<p>Keep in suitable, closed containers for disposal. 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.</p> <p>Contaminated soil may have to be removed and disposed. Clean contaminated floors and objects thoroughly, observing environmental regulations.</p>
<b>Additional advice</b>	<p>Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact vegetation.</p> <p>Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.</p>

**SECTION 7. HANDLING AND STORAGE**

<b>Handling procedures</b>	Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation. For personal protection see section 8.
<b>Storing Procedures</b>	Store in original container. 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. Keep containers tightly closed in a dry, cool and well-ventilated place.
<b>Work/Hygienic Procedures</b>	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.



**Material Safety Data Sheet**

MSDS Number: 102000012194  
MSDS Version 2.0

**CENTURION® EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE**

Remove soiled clothing immediately and clean thoroughly before using again.  
Wash thoroughly and put on clean clothing.

**Min/Max Storage Temperatures** no data available

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

- General Protection** Follow all label instructions. Train employees in safe use of the product.
- Eye/Face Protection** Tightly fitting safety goggles
- 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**

Distillates (petroleum), hydrotreated light	64742-47-8	CAD BC OEL	TWA	200 mg/m3
Trimethyl benzene (all Isomers)	25551-13-7	OEL (QUE)	TWA	25 ppm
		CAD AB OEL	TWA	25 ppm
		CAD BC OEL	TWA	25 ppm
		CAD ON OEL	TWAEV	25 ppm
Naphthalene	91-20-3	OEL (QUE)	TWA	10 ppm
		OEL (QUE)	STEL	15 ppm
		CAD AB OEL	TWA	10 ppm
		CAD AB OEL	STEL	15 ppm
		CAD BC OEL	TWA	10 ppm
		CAD BC OEL	STEL	15 ppm
		CAD ON OEL	TWAEV	10 ppm
		CAD ON OEL	STEV	15 ppm
		OES BCS*	TWA	10 ppm

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

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance** amber
- Physical State** liquid slightly viscous



**Material Safety Data Sheet**

MSDS Number: 102000012194  
MSDS Version 2.0

**CENTURION® EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE**

<b>Odor</b>	hydrocarbon-like aromatic
<b>pH</b>	3.6 (5 %)
<b>Vapor Density (Air = 1)</b>	no data available
<b>Specific Gravity</b>	0.96
<b>Density</b>	0.960 g/cm <sup>3</sup> at 25 °C
<b>Evaporation rate</b>	no data available
<b>Boiling Point</b>	no data available
<b>Water solubility</b>	at 20 °C: practically insoluble
<b>Minimum Ignition Energy</b>	no data available
<b>Decomposition temperature</b>	no data available
<b>Partition coefficient: n-octanol/water</b>	no data available

**SECTION 10. STABILITY AND REACTIVITY**

<b>Conditions to avoid</b>	Heat, flames and sparks.
<b>Incompatibility</b>	Oxidizing agents Metals Acids Bases
<b>Hazardous Decomposition Products</b>	Thermal decomposition nitrogen oxides (NO <sub>x</sub> ) Hydrogen chloride (HCl) Carbon dioxide (CO <sub>2</sub> ) Carbon monoxide
<b>Chemical Stability</b>	Stable under recommended storage conditions.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute toxicity studies have been bridged from a similar formulation containing a similar percentage of the active ingredient, clethodim. The non-acute information pertains to the technical-grade active ingredient.



**Material Safety Data Sheet**

MSDS Number: 102000012194  
MSDS Version 2.0

**CENTURION® EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE**

**Acute oral toxicity** female rat: LD50: 2,920 mg/kg  
male rat: LD50: 3,610 mg/kg

**Acute dermal toxicity** LD50(mg/kg): >5,000 (RBT)

**Acute inhalation toxicity** male rat: LC50: 4.400 mg/l  
Exposure time: 8 h

**Skin irritation** May cause skin irritation and/or dermatitis.

**Eye irritation** Irritating to eyes.

**Sensitisation** Sensitising

**Chronic toxicity** Clethodim caused liver effects and anemia in chronic studies in rodents and dogs.

**Assessment Carcinogenicity**

<b>ACGIH</b>		
Naphthalene	91-20-3	Group A4
<b>NTP</b>		
Naphthalene	91-20-3	
<b>IARC</b>		
Naphthalene	91-20-3	Overall evaluation: 2B
<b>OSHA</b>		
None.		

**Reproductive toxicity** REPRODUCTION: Clethodim was not a reproductive toxicant in a two-generation study in rats.

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

**Mutagenicity** Clethodim 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** Oncorhynchus mykiss (rainbow trout)  
67 mg/l  
Exposure time: 96 h

Lepomis macrochirus (Bluegill sunfish)  
120 mg/l  
Exposure time: 48 h



**Material Safety Data Sheet**

MSDS Number: 102000012194  
MSDS Version 2.0

**CENTURION® EMULSIFIABLE CONCENTRATE POST-EMERGENCE HERBICIDE**

**Chronic Toxicity to Aquatic Invertebrates**      Daphnia Life Cycle  
120 mg/l

**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. Apply this product as specified on the label. Do not allow to get into surface water, drains and ground water. Do not apply when weather conditions favor runoff or drift.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**General Disposal Guidance**      Follow container label instructions for disposal of wastes generated during use in compliance with the product label. Dispose in accordance with all local, state/provincial and federal regulations.

**Container Disposal**      Follow advice on product label and/or leaflet. Do not re-use empty containers. Triple rinse containers. Consult state and local regulations regarding the proper disposal of container. Not completely emptied packagings should be disposed of as hazardous waste.

**SECTION 14. TRANSPORT INFORMATION**

**TDG**      Not dangerous goods / not hazardous material

**49CFR**  
NA-Number      **1993**  
Packaging group      III  
Description of the goods      COMBUSTIBLE LIQUID, N.O.S.  
(PETROLEUM DISTILLATES, NAPHTHALENE)

**IMDG**      Not dangerous goods / not hazardous material

**IATA**      Not dangerous goods / not hazardous material

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.

**SECTION 15. REGULATORY INFORMATION**

**PCP Registration No.**      27598



**Material Safety Data Sheet**

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MSDS Number: 102000012194  
MSDS Version 2.0

**US Federal Regulations**

**TSCA list**

Distillates (petroleum), hydrotreated light	64742-47-8
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Naphthalene	91-20-3

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

Naphthalene	91-20-3
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**SARA Title III - Section 302 - Notification and Information**

None.

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

Naphthalene	91-20-3	0.1%
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**US States Regulatory Reporting**

**CA Prop65**

This product contains a chemical known to the State of California to cause cancer.

Naphthalene	91-20-3
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This product does not contain any substances known to the State of California to cause reproductive harm.

**US State Right-To-Know Ingredients**

Trimethyl benzene (all Isomers)	25551-13-7	CA, IL, MN, RI
Naphthalene	91-20-3	CA, CT, IL, MN, NJ, PA, RI

**Canadian Regulations**

**Canadian Domestic Substance List**

Distillates (petroleum), hydrotreated light	64742-47-8
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Naphthalene	91-20-3

**Environmental**

**CERCLA**

Naphthalene	91-20-3	100 lbs
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**Clean Water Section 307 Priority Pollutants**

None.

**Safe Drinking Water Act Maximum Contaminant Levels**

None.

**International Regulations**

**European Inventory of Existing Commercial Substances (EINECS)**

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**Material Safety Data Sheet**

MSDS Number: 102000012194  
MSDS Version 2.0

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**SECTION 16. OTHER INFORMATION**

NFPA 704 (National Fire Protection Association):

Health - 1      Flammability - 2      Reactivity - 1      Others - none

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

Reason to Revise: Updated due to new system and numbering scheme.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 05/21/2010

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