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Safety Data Sheet
Centurion Emulsifiable Concentrate Post - Emergence Herbicide

1. Identification

Product identifier used on the label

Centurion Emulsifiable Concentrate Post - Emergence Herbicide

Recommended use of the chemical and restriction on use

Recommended use*: crop protection product, herbicide
Unsuitable for use: Uses other than recommended

* The “Recommended use” identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF Agricultural Solutions Canada Inc.
510, 28 Quarry Park Boulevard SE,
Calgary, AB, T2C 5P9
CANADA

Telephone: +1 (403) 523-3000

Emergency telephone number

24 Hour Emergency Response Information
CHEMTREC: 1-800-424-9300
BASF HOTLINE: (800) 454-COPE (2673)

Other means of identification

Chemical family: No applicable information available.
PCP # 27598
Synonyms: Clethodim

2. Hazards Identification

According to Hazardous Products Regulations (HPR) (SOR/2022-272)

Classification of the product

Asp. Tox.	1	Aspiration hazard
Flam. Liq.	4	Flammable liquids
Skin Corr./Irrit.	2	Skin corrosion/irritation
Eye Dam./Irrit.	2B	Serious eye damage/eye irritation
Skin Sens.	1	Skin sensitization
Carc.	2	Carcinogenicity
STOT RE	2	Specific target organ toxicity — repeated exposure
Aquatic Acute	2	Hazardous to the aquatic environment - acute
Aquatic Chronic	2	Hazardous to the aquatic environment - chronic

Label elements

Pictogram:

Signal Word:
Danger

Hazard Statement:

H227	Combustible liquid.
H320	Causes eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H351	Suspected of causing cancer.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P260	Do not breathe dust/gas/mist/vapours.
P201	Obtain special instructions before use.
P273	Avoid release to the environment.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing should not be allowed out of the workplace.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical attention.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical attention.
P332 + P313	If skin irritation occurs: Get medical attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P331	Do NOT induce vomiting.
P337 + P313	If eye irritation persists: Get medical attention.
P370 + P378	In case of fire: Use water spray, dry powder, foam or carbon dioxide for extinction.

Precautionary Statements (Storage):

P405	Store locked up.
P403	Store in a well-ventilated place.

Precautionary Statements (Disposal):

P501	Dispose of contents/container in accordance with local regulations.

Hazards not otherwise classified

Labeling of special preparations (GHS):
Restricted to professional users.

3. Composition / Information on Ingredients

According to Hazardous Products Regulations (HPR) (SOR/2022-272)

2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one
CAS Number: 99129-21-2
Content (W/W): 26.4 %
Synonym: No data available.

solvent naphtha
CAS Number: 64742-94-5
Content (W/W): 59.0 %
Synonym: Solvent naphtha, petroleum, heavy arom.

1,2,4-trimethylbenzene
CAS Number: 95-63-6
Content (W/W): 5.9 %
Synonym: 1,2,4-Trimethylbenzene

naphthalene
CAS Number: 91-20-3
Content (W/W): 1.06 %
Synonym: Naphthalin

The actual concentration is withheld as a trade secret.

4. First-Aid Measures

Description of first aid measures

General advice:
First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention. If not breathing, give artificial respiration.

If on skin:
Immediately wash thoroughly with soap and water, seek medical attention.

If in eyes:
Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

If swallowed:
Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Do not give solids or liquids. Immediate medical attention required.

Most important symptoms and effects, both acute and delayed

Symptoms: irritation of respiratory tract, coughing, dyspnea
Hazards: No applicable information available.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment:	Treat according to symptoms (decontamination, vital functions), no known specific antidote.
Treatment:	Vomiting may cause aspiration pneumonia due to the ingredients.

5. Fire-Fighting Measures

Suitable extinguishing media:
water spray, dry powder, foam, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon monoxide, carbon dioxide, nitrogen oxides
The substances/groups of substances mentioned can be released in case of fire. The product is combustible.

Advice for fire-fighters
Protective equipment for fire-fighting:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Keep containers cool by spraying with water if exposed to fire. In case of fire and/or explosion do not breathe fumes. Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Do not breathe vapour/spray. Use personal protective clothing. Avoid contact with the skin, eyes and clothing.

Environmental precautions
Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up
Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and Storage

Precautions for safe handling
No special measures necessary if stored and handled correctly. Ensure thorough ventilation of stores and work areas. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

Protection against fire and explosion:
Vapours may form ignitable mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Conditions for safe storage, including any incompatibilities
Segregate from foods and animal feeds.

Further information on storage conditions: Keep away from heat. Protect from direct sunlight.

8. Exposure Controls/Personal Protection

Users of a pesticidal product should refer to the product label for personal protective equipment requirements.

Components with occupational exposure limits

naphthalene	ACGIH, US:	TWA value 10 ppm ;
	ACGIH, US:	Skin Designation ; Danger of cutaneous absorption
	OSHA Z1:	PEL 10 ppm 50 mg/m3 ;
1,2,4-trimethylbenzene	ACGIH, US:	TWA value 10 ppm ;
solvent naphtha	ACGIH, US:	TWA value 200 mg/m3 Non-aerosol (total hydrocarbon vapor); Application restricted to conditions in which there are negligible aerosol exposures.
	ACGIH, US:	Skin Designation Non-aerosol (total hydrocarbon vapor); Danger of cutaneous absorption

Advice on system design:
No applicable information available.

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:
Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:
Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

General safety and hygiene measures:
Wearing of closed work clothing is recommended. Handle in accordance with good industrial hygiene and safety practice. Store work clothing separately. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Physical state:	liquid
Form:	liquid, slightly viscous
Odour:	aromatic
Odour threshold:	Not determined due to potential health hazard by inhalation.
Colour:	beige to brown
pH value:	approx. 3 - 5 (1 %(m), 25 °C)
Melting point:	The product has not been tested.
Boiling point:	Information applies to the solvent.
Information on: solvent naphtha	
Boiling range:	178 - 209 °C (1,013.25 hPa) Literature data.

Sublimation point:	No applicable information available.
Flash point:	62.8 °C
Flammability:	not applicable
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.
Vapour pressure:	The product has not been tested. The statement has been derived from the properties of the individual components.
Information on: solvent naphtha	
Vapour pressure:	1 hPa (20 °C)

Density:	approx. 0.96 g/cm3 (20 °C)
Relative vapour density:	not applicable
Partitioning coefficient n-octanol/water (log Pow):	The statements are based on the properties of the individual components.
Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one	
Partitioning coefficient n-octanol/water (log Pow):	4.14 (20 °C)

Information on: solvent naphtha

Partitioning coefficient n-octanol/water (log Pow):	2.9 - 6.1	(OECD Guideline 117)

Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.
Viscosity, dynamic:	approx. 6 mPa.s (25 °C)
Viscosity, kinematic:	No data available.
Solubility in water:	(20 °C) insoluble
Solubility (quantitative):	No data available.
Solubility (qualitative):	No data available.
Molecular weight:	No data available.
Evaporation rate:	No data available.
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.

Particle characteristics

No applicable information available.

10. Stability and Reactivity

Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:
Based on its structural properties the product is not classified as oxidizing.

Chemical stability
The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions
No hazardous reactions if stored and handled as prescribed/indicated.

Conditions to avoid
Avoid all sources of ignition: heat, sparks, open flame. Avoid extreme temperatures. Avoid direct sunlight.

Incompatible materials
strong acids, strong bases, strong oxidizing agents, metal

Hazardous decomposition products

Decomposition products:
Hazardous decomposition products: nitrogen oxides, chlorine compounds, carbon dioxide, sulfur oxides

Thermal decomposition:
No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity
Assessment of acute toxicity: Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Oral
Type of value: LD50
Species: rat (female)
Value: 2,920 mg/kg

Type of value: LD50
Species: rat (male)
Value: 3,610 mg/kg

Inhalation
Type of value: LC50
Species: rat
Value: > 5.4 mg/l
Exposure time: 4 h
An aerosol was tested.

Dermal
Type of value: LD50
Species: rabbit
Value: > 5,000 mg/kg

Assessment other acute effects
Assessment of STOT single:
Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion
Assessment of irritating effects: Skin contact causes irritation. May cause slight irritation to the eyes.

Skin
Species: rabbit
Result: Irritant.

Eye
Species: rabbit
Result: Irritant.

Sensitization
Assessment of sensitization: There is no evidence of a skin-sensitizing potential.

Species: mouse
Result: Non-sensitizing.

Aspiration Hazard
May be fatal if swallowed and enters airways.

Chronic Toxicity/Effects

Repeated dose toxicity
Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one
Assessment of repeated dose toxicity: Repeated exposure may affect certain organs.

Information on: naphthalene
Assessment of repeated dose toxicity: Repeated oral uptake of the substance did not cause substance-related effects. The substance may cause damage to the olfactory epithelium after repeated inhalation. Repeated dermal uptake of the substance did not cause substance-related effects.

Information on: 1,2,4-trimethylbenzene
Assessment of repeated dose toxicity: Based on available data, the classification criteria are not met. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Genetic toxicity
Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity
Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: solvent naphtha
Assessment of carcinogenicity: Long-term exposure to highly irritating concentrations resulted in skin tumors in animals. A carcinogenic effect in humans can be excluded after brief skin contact. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Information on: naphthalene
Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by inhalation, a carcinogenic effect was observed. EU-classification The substance was classified as a group 3 carcinogen by the German MAK-Commission (substances for which a suspicion of a carcinogenic potential exists). IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).
IARC (International Agency for Research on Cancer) has classified this substance as group 2B (The agent is possibly carcinogenic to humans).

Reproductive toxicity

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity
Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one
Assessment of teratogenicity: The potential to cause toxicity to development cannot be excluded at maternally toxic doses.

Information on: naphthalene
Assessment of teratogenicity: Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals. Literature data.

Information on: 1,2,4-trimethylbenzene
Assessment of teratogenicity: Based on available data, the classification criteria are not met.

Other Information
Misuse can be harmful to health.

12. Ecological Information

Toxicity

Aquatic toxicity
Assessment of aquatic toxicity:
The product has not been tested. The statement has been derived from the properties of the individual components.

Toxicity to fish

Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one
LC50 (96 h) > 33 mg/l, Lepomis macrochirus

Aquatic invertebrates

Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one
LC50 (48 h) 20.2 mg/l, Daphnia magna

Aquatic plants

Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one
EC50 (72 h) 11.4 mg/l (growth rate), Scenedesmus quadricauda

Persistence and degradability

Assessment biodegradation and elimination (H2O)
The product has not been tested. The statement has been derived from the properties of the individual components.

Assessment biodegradation and elimination (H2O)

Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

Readily biodegradable.

Bioaccumulative potential

Assessment bioaccumulation potential
The product has not been tested. The statement has been derived from the properties of the individual components.

Bioaccumulation potential

Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

Bioconcentration factor: 2.1 (28 d), Lepomis macrochirus (OPP 72-6 (EPA-Guideline))
Does not accumulate in organisms.

Mobility in soil

Assessment transport between environmental compartments
The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-[1-[[[(2E)-3-chloro-2-propen-1-yl]oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

Following exposure to soil, the product trickles away and can - dependant on degradation - be transported to deeper soil areas with larger water loads.

Additional information

Other ecotoxicological advice:
Do not discharge product into the environment without control.

13. Disposal considerations

Waste disposal of substance:
See product label for disposal and recycling instructions.

Container disposal:
Rinse the container or liner as needed for disposal. Add rinsate to spray tank. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. Consult the product label for additional details.

14. Transport Information

Land transport
TDG

Not classified as a dangerous good under transport regulations

Sea transport
IMDG

Not classified as a dangerous good under transport regulations

Air transport
IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:
Crop Protection DSL, CA released / exempt

Labeling requirements under Pest Control Products Act

Read the label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

This chemical is a pest control product regulated by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. The following is the hazard information required on the pest control product label:
WARNING:
KEEP OUT OF REACH OF CHILDREN.
This product is an eye and skin irritant.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of dusts/mists/vapours.
Wash thoroughly after handling.

There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label.

16. Other Information

SDS Prepared by:
BASF Agricultural Solutions Canada NA Product Regulations
SDS Prepared on: 2025/12/04

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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Date / Previous version: 2023/03/07 Previous version: 3.0

END OF DATA SHEET