

SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



Enversa™

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	03/20/2024	800080101251	Date of first issue: 03/20/2024

Corteva Agriscience™ encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. IDENTIFICATION

Product name : Enversa™

Manufacturer or supplier's details

COMPANY IDENTIFICATION

Manufacturer/importer : CORTEVA AGRISCIENCE LLC
9330 ZIONSVILLE RD
INDIANAPOLIS, IN, 46268-1053
UNITED STATES

Customer Information Number : 1-800-258-3033
E-mail address : customerinformation@corteva.com

Emergency telephone : INFOTRAC (CONTRACT 84224)
+1 800-992-5994 or +1 317-337-6009

Recommended use of the chemical and restrictions on use

Recommended use : End use herbicide product

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin sensitization : Category 1
Specific target organ toxicity : Category 3 (Respiratory system)
- single exposure

GHS label elements

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Hazard pictograms :



Signal Word : Warning

Hazard Statements : H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

Precautionary Statements :

Prevention:

P261 Avoid breathing mist or vapors.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
acetochlor (ISO)	34256-82-1	33
Glycerol	56-81-5	>= 3 - < 10
Urea	57-13-6	>= 3 - < 10
Distillates (petroleum), hydro- treated light; Kerosine — unspecified	64742-47-8	>= 1 - < 3
Homopolymer of Hexamethylene Diisocyanate	28182-81-2	>= 1 - < 3

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3,6-diazaoctanethylenediamin	112-24-3	$\geq 0.3 - < 1$
4,4'-methylenedi(cyclohexyl isocyanate)	5124-30-1	$\geq 0.3 - < 1$
Balance	Not Assigned	> 30

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

- If inhaled : Move person to fresh air; if effects occur, consult a physician.
- In case of skin contact : Wash off with plenty of water.
- In case of eye contact : Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.
- If swallowed : No emergency medical treatment necessary.
- Most important symptoms and effects, both acute and delayed : None known.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : No specific antidote.
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray
Alcohol-resistant foam
- Unsuitable extinguishing media : None known.
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health. Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

Combustion products may include and are not limited to:
Carbon oxides
Nitrogen oxides (NO_x)

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Hydrogen chloride gas

- Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.
Discharge into the environment must be avoided.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g., by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.
Prevent from entering into soil, ditches, sewers, underwater.
See Section 12, Ecological Information.
- Methods and materials for containment and cleaning up : Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped,
Recovered material should be stored in a vented container.
The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurization of the container.
Keep in suitable, closed containers for disposal.
Wipe up with absorbent material (e.g. cloth, fleece).
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
See Section 13, Disposal Considerations, for additional information.

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SECTION 7. HANDLING AND STORAGE

- Local/Total ventilation : Use with local exhaust ventilation.
- Advice on safe handling : Avoid formation of aerosol.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Provide sufficient air exchange and/or exhaust in work rooms.
Do not breathe vapors/dust.
Do not smoke.
Handle in accordance with good industrial hygiene and safety practice.
Avoid exposure - obtain special instructions before use.
Smoking, eating and drinking should be prohibited in the application area.
Do not get on skin or clothing.
Do not breathe vapors or spray mist.
Do not swallow.
Avoid contact with skin and eyes.
Avoid contact with eyes.
Keep container tightly closed.
Take care to prevent spills, waste and minimize release to the environment.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- Conditions for safe storage : Store in a closed container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in properly labeled containers.
Store in accordance with the particular national regulations.
- Materials to avoid : Strong oxidizing agents
- Packaging material : Unsuitable material: None known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Glycerol	56-81-5	TWA (mist, respirable fraction)	5 mg/m ³	OSHA Z-1
		TWA (mist, total dust)	15 mg/m ³	OSHA Z-1
		TWA (Mist -	10 mg/m ³	OSHA P0

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		total dust)		
		TWA (Mist - respirable fraction)	5 mg/m3	OSHA P0
Urea	57-13-6	TWA	10 mg/m3	US WEEL
Distillates (petroleum), hydro-treated light; Kerosine — unspecified	64742-47-8	TWA	100 ppm	Dow IHG
		STEL	125 ppm	Dow IHG
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
		TWA (Mist)	5 mg/m3	OSHA P0
		TWA (Mist)	5 mg/m3	OSHA Z-1
3,6-diazaoctanethylenediamin	112-24-3	TWA	1 ppm	US WEEL
4,4'-methylenedi(cyclohexyl isocyanate)	5124-30-1	TWA	0.005 ppm	ACGIH
		C	0.01 ppm 0.11 mg/m3	OSHA P0

Engineering measures : Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator.

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

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Eye protection : Use safety glasses (with side shields).
If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin and body protection : Wear clean, body-covering clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : beige

Odor : Sharp

Odor Threshold : No data available

pH : 8.4 (76.8 °F / 24.9 °C)
Concentration: 1 %

Melting point/range : Not applicable

Freezing point : No data available

Boiling point/boiling range : No data available

Flash point : Method: closed cup
no flash to maximum temperature tested

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable to liquids

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 1.0911 g/cm³ (68 °F / 20 °C)

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Solubility(ies)
Water solubility : No data available

Autoignition temperature : No data available

Viscosity
Viscosity, dynamic : 121.8 cP (104 °F / 40 °C)
5 rpm
101.4 mPa.s (104 °F / 40 °C)
10 rpm

Explosive properties : Not explosive

Oxidizing properties : No significant increase (>5C) in temperature.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : No decomposition if stored and applied as directed.
Stable under normal conditions.

Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.
None known.

Conditions to avoid : None known.

Incompatible materials : None.

Hazardous decomposition products : Decomposition products depend upon temperature, air supply and the presence of other materials.
Decomposition products can include and are not limited to:
Carbon oxides
Nitrogen oxides (NOx)
Hydrogen chloride gas

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 423

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.47 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436

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Acute dermal toxicity : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 402

Components:

acetochlor (ISO):

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Remarks: Signs and symptoms of excessive exposure may include:
Tremors.
Convulsions.

Acute inhalation toxicity : Remarks: Prolonged excessive exposure to mist may cause serious adverse effects, even death.
Mist may cause irritation of upper respiratory tract (nose and throat).

LC50 (Rat): 3.99 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Glycerol:

Acute oral toxicity : LD50 (Rat): > 11,500 mg/kg
Remarks: Excessive exposure may cause:
Central nervous system effects.
Observations in humans include:
Altered blood sugar levels.

Acute inhalation toxicity : LC50 (Rat): > 2.75 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred following exposure to a saturated atmosphere.
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Guinea pig): >= 56,750 mg/kg

Urea:

Acute oral toxicity : LD50 (Rat): > 8,000 mg/kg
Remarks: May cause central nervous system depression.
Signs and symptoms of excessive exposure may include:
Drowsiness.
May cause nausea and vomiting.
Diarrhea.

Acute dermal toxicity : LD50 (Rat): > 8,200 mg/kg

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Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: Estimated.
- Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
Exposure time: 8 h
Test atmosphere: vapor
Remarks: For similar material(s):
- Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: For similar material(s):

Homopolymer of Hexamethylene Diisocyanate:

- Acute oral toxicity : LD50 (Rat, female): > 2,500 mg/kg
Method: OECD Test Guideline 423
- Acute inhalation toxicity : LC50 (Rat, male and female): 0.39 mg/l
Exposure time: 4 h
Test atmosphere: Aerosol
Method: OECD Test Guideline 403
Assessment: The component/mixture is toxic after short term inhalation.
- Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402

3,6-diazaoctanethylenediamin:

- Acute oral toxicity : LD50 (Rat, male and female): 1,716 mg/kg
- Acute dermal toxicity : LD50 (Rabbit): 1,465 mg/kg

4,4'-methylenedi(cyclohexyl isocyanate):

- Acute oral toxicity : LD50 (Rat, male and female): 18,200 mg/kg
Method: OECD Test Guideline 401
- Acute inhalation toxicity : LC50 (Rat, male and female): 456 mg/m3
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The component/mixture is toxic after short term inhalation.
- Acute dermal toxicity : LD50 (Rat, male and female): > 7,000 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Product:

- Species : Rabbit

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Method : OECD Test Guideline 404
Result : No skin irritation

Components:

acetochlor (ISO):

Result : Skin irritation

Glycerol:

Result : No skin irritation

Urea:

Result : No skin irritation

Homopolymer of Hexamethylene Diisocyanate:

Species : Rabbit
Method : OECD Test Guideline 404

3,6-diazaoctanethylenediamin:

Result : Causes burns.

4,4'-methylenedi(cyclohexyl isocyanate):

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Serious eye damage/eye irritation

Product:

Species : Rabbit
Method : OECD Test Guideline 405

Components:

Glycerol:

Result : No eye irritation

Urea:

Result : No eye irritation

Homopolymer of Hexamethylene Diisocyanate:

Species : Rabbit
Method : OECD Test Guideline 405

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3,6-diazaoctanethylenediamin:

Result : Corrosive

4,4'-methylenedi(cyclohexyl isocyanate):

Species : Rabbit
Result : Eye irritation
Method : OECD Test Guideline 405

Respiratory or skin sensitization

Product:

Assessment : Does not cause respiratory sensitization.

Components:

acetochlor (ISO):

Assessment : May cause sensitization by skin contact.
Remarks : Has caused allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Remarks : For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

Homopolymer of Hexamethylene Diisocyanate:

Test Type : Maximization Test
Species : Guinea pig
Assessment : May cause sensitization by skin contact.
Method : OECD Test Guideline 406

3,6-diazaoctanethylenediamin:

Assessment : May cause sensitization by skin contact.
Remarks : Has caused allergic skin reactions in humans.
Has demonstrated the potential for contact allergy in mice.
Has caused allergic skin reactions when tested in guinea pigs.
Individuals having an allergic skin reaction to this product may have an allergic skin reaction to similar material(s).
The similar material(s) is/are:
Ethylenediamine (EDA).
Diethylenetriamine.
Piperazine.
Aminoethylethanolamine (AEEA).

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Remarks : For respiratory sensitization:
No relevant data found.

4,4'-methylenedi(cyclohexyl isocyanate):

Test Type : Maximization Test
Species : Guinea pig
Assessment : May cause sensitization by skin contact.
Method : OECD Test Guideline 406

Routes of exposure : Inhalation
Species : Guinea pig
Assessment : May cause sensitization by inhalation.

Germ cell mutagenicity

Components:

acetochlor (ISO):

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative in some cases and positive in other cases., Animal genetic toxicity studies were predominantly negative.

Glycerol:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative.

Urea:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative in some cases and positive in other cases.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Germ cell mutagenicity - Assessment : For similar material(s);, In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

3,6-diazaoctanethylenediamin:

Germ cell mutagenicity - Assessment : In vitro genetic toxicity studies were negative in some cases and positive in other cases., Animal genetic toxicity studies were negative.

Carcinogenicity

Components:

acetochlor (ISO):

Carcinogenicity - Assessment : Has caused cancer in laboratory animals., Tumors were observed only at levels which produced significant toxicity, thus exceeding the maximum tolerated dose.

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Glycerol:

Carcinogenicity - Assessment : For the major component(s); Did not cause cancer in laboratory animals.

Urea:

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Carcinogenicity - Assessment : For similar material(s); Did not cause cancer in laboratory animals.

3,6-diazaoctanethylenediamin:

Carcinogenicity - Assessment : Did not cause cancer in laboratory animals.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

acetochlor (ISO):

Reproductive toxicity - Assessment : In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.
Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

Glycerol:

Reproductive toxicity - Assessment : Reproductive effects seen in female animals are believed to be due to altered nutritional states resulting from extremely high doses of glycerine given in the diet. Similar effects have been seen in animals fed synthetic diets.
Did not cause birth defects or any other fetal effects in laboratory animals.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Reproductive toxicity - Assessment : For similar material(s); In animal studies, did not interfere with reproduction.
For similar material(s); Did not cause birth defects or any

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other fetal effects in laboratory animals.

3,6-diazaoctanethylenediamin:

Reproductive toxicity - Assessment : Laboratory animals that were fed exaggerated doses of Triethylenetetraamine(TETA) showed adverse fetal effects that were believed to be associated with an observed copper deficiency., Exposures having no effect on the mother should have no effect on the fetus.

STOT-single exposure

Product:

Target Organs : Respiratory system
Assessment : May cause respiratory irritation.

Components:

acetochlor (ISO):

Assessment : May cause respiratory irritation.

Glycerol:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Urea:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Assessment : Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Homopolymer of Hexamethylene Diisocyanate:

Routes of exposure : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause respiratory irritation.

3,6-diazaoctanethylenediamin:

Assessment : Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

4,4'-methylenedi(cyclohexyl isocyanate):

Assessment : May cause respiratory irritation.

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STOT-repeated exposure

Product:

Assessment : Evaluation of available data suggests that this material is not an STOT-RE toxicant.

Repeated dose toxicity

Components:

acetochlor (ISO):

Remarks : In animals, effects have been reported on the following organs:
Kidney.
Liver.
Blood.
Testes.
Central nervous system.

Glycerol:

Remarks : Excessive exposure to glycerine may cause increased fat levels in blood.

Urea:

Remarks : No relevant data found.
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Remarks : In animals, effects have been reported on the following organs:
Kidney.

3,6-diazaoctanethylenediamin:

Remarks : In animals, effects have been reported on the following organs:
Lung.

Aspiration toxicity

Product:

Based on physical properties, not likely to be an aspiration hazard.

Components:

acetochlor (ISO):

Based on available information, aspiration hazard could not be determined.

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Glycerol:

Based on physical properties, not likely to be an aspiration hazard.

Urea:

Based on physical properties, not likely to be an aspiration hazard.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

May be fatal if swallowed and enters airways.

3,6-diazaoctanethylenediamin:

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

acetochlor (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.36 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 8.6 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202 or Equivalent

EC50 (eastern oyster (Crassostrea virginica)): 4.2 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic plants : EyC50 (Pseudokirchneriella subcapitata (green algae)): 0.00027 mg/l
End point: Growth inhibition (cell density reduction)
Exposure time: 96 h
Method: OECD Test Guideline 201 or Equivalent

EyC50 (Lemna minor (duckweed)): 0.0027 mg/l
End point: Growth inhibition (cell density reduction)
Exposure time: 7 d
Method: OECD 221.

M-Factor (Acute aquatic toxicity) : 1,000

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.13 mg/l

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0221 mg/l
Exposure time: 21 d

M-Factor (Chronic aquatic toxicity) : 100

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): 105.5 mg/kg
Exposure time: 14 d

Toxicity to terrestrial organisms : Remarks: Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg)., Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

oral LD50 (Colinus virginianus (Bobwhite quail)): 928 mg/kg bodyweight.

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5620 mg/kg diet.
Exposure time: 5 d

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5620 mg/kg diet.
Exposure time: 5 d

oral LD50 (Apis mellifera (bees)): > 100 micrograms/bee
Exposure time: 48 h

contact LD50 (Apis mellifera (bees)): > 200 micrograms/bee
Exposure time: 48 h

Glycerol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): >= 885 mg/l
Exposure time: 96 h
Test Type: static test
Method: Method Not Specified.

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1,955 mg/l
Exposure time: 48 h
Test Type: static test
Method: Method Not Specified.

Toxicity to algae/aquatic plants : EC50 (Other): 2,900 mg/l
End point: Growth inhibition (cell density reduction)
Exposure time: 192 h
Test Type: static test
Method: Method Not Specified.

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h

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Method: OECD 209 Test

Urea:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 790 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Leuciscus idus (Golden orfe)): > 10,000 mg/l
Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 24 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

Toxicity to microorganisms : EC50 (Bacteria): > 5,000 mg/l
Exposure time: 16 h

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 400 mg/l
Exposure time: 48 h

Homopolymer of Hexamethylene Diisocyanate:

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 1,000 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

3,6-diazaoctanethylenediamin:

Toxicity to fish : Remarks: Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).
May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

LC50 (Pimephales promelas (fathead minnow)): 330 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31.1 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

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Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 20 mg/l
End point: Growth rate inhibition
Exposure time: 72 h
Test Type: semi-static test
Method: OECD Test Guideline 201 or Equivalent

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.9 mg/l
End point: number of offspring
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211 or Equivalent

Toxicity to microorganisms : EC50 (Bacteria): 680 mg/l
Exposure time: 16 h

Persistence and degradability

Components:

acetochlor (ISO):

Stability in water : Test Type: Hydrolysis
Method: Stable

Test Type: Hydrolysis
Method: Stable

Test Type: Hydrolysis
Method: Stable

Photodegradation : Rate constant: 5.51826E-11 cm³/s
Method: Estimated.

Glycerol:

Biodegradability : Result: Readily biodegradable.
Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Biodegradation: 63 %
Exposure time: 14 d
Method: OECD Test Guideline 301C or Equivalent
Remarks: 10-day Window: Not applicable

ThOD : 1.22 kg/kg

Urea:

Biodegradability : Result: Readily biodegradable.
Remarks: Material is expected to be readily biodegradable. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

aerobic
Concentration: 400 mg/l

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Biodegradation: 96 %
Exposure time: 16 d
Method: OECD Test Guideline 302B or Equivalent
Remarks: 10-day Window: Not applicable

Biochemical Oxygen Demand (BOD) : 3 %
Incubation time: 5 d
Method: hUCC

41 %
Incubation time: 10 d
Method: hUCC

100%
Incubation time: 20 d
Method: hUCC

Chemical Oxygen Demand (COD) : 0.28 kg/kg

ThOD : 2.13 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Rate constant: 2.00E-12 cm³/s
Method: Estimated.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Biodegradability : aerobic
Result: Not biodegradable
Biodegradation: 4 - 12 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent
Remarks: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail

ThOD : 3.48 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)
Sensitizer: OH radicals
Rate constant: 1.394E-11 cm³/s
Method: Estimated.

3,6-diazaoctanethylenediamin:

Biodegradability : Remarks: Biodegradation under aerobic static laboratory conditions is moderate (BOD₂₀ or BOD₂₈/ThOD between 10 and 40%).

Result: Not biodegradable
Biodegradation: 0 %

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Exposure time: 20 d
Method: OECD Test Guideline 301D or Equivalent
Remarks: 10-day Window: Fail

Biochemical Oxygen Demand (BOD) : 5.000 %
Incubation time: 5 d

2.5 - 11 %
Incubation time: 20 d

Chemical Oxygen Demand (COD) : 1.94 kg/kg

ThOD : 3.40 kg/kg

Bioaccumulative potential

Components:

acetochlor (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 20

Partition coefficient: n-octanol/water :

log Pow: 4.14
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Glycerol:

Partition coefficient: n-octanol/water : log Pow: -1.76 (68 °F / 20 °C)
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Urea:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 1

Partition coefficient: n-octanol/water : log Pow: -1.59 (77 °F / 25 °C)
Method: OECD Test Guideline 107 or Equivalent
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 310
Method: Estimated.

Partition coefficient: n- : log Pow: 3.3 - 6

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Remarks: Expected to be relatively immobile in soil (Koc > 5000).

3,6-diazaoctanethylenediamin:

Distribution among environmental compartments : Koc: 4.1 - 310
Method: Estimated.
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Balance:

Distribution among environmental compartments : Remarks: No relevant data found.

Other adverse effects

Components:

acetochlor (ISO):

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Glycerol:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is readily biodegradable and thus is not considered persistent or very persistent (P or vP).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Urea:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Regulation: (Update: 02/16/2012 KJB)
Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Distillates (petroleum), hydro- treated light; Kerosine — unspecified:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

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3,6-diazaoctanethylenediamin:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Balance:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.
If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Acetochlor)
Class : 9
Packing group : III
Labels : 9
Environmentally hazardous : yes

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(Acetochlor)
Class : 9

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Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Acetochlor)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes(Acetochlor)
Remarks : Stowage category A

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

49 CFR Road

Not regulated as a dangerous good

Further information

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : Respiratory or skin sensitization
Specific target organ toxicity (single or repeated exposure)

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

Pennsylvania Right To Know

Glycerol	56-81-5
Distillates (petroleum), hydro- treated light; Kerosine — un-	64742-47-8

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specified

California Prop. 65

WARNING: This product can expose you to chemicals including acetochlor (ISO), Distillates (petroleum), hydro- treated light; Kerosine — unspecified, sulphuric acid, which is/are known to the State of California to cause cancer, and toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The ingredients of this product are reported in the following inventories:

TSCA : Product contains substance(s) not listed on TSCA inventory.

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 62719-775

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 as required on the pesticide label:

CAUTION

Harmful if swallowed or absorbed through the skin.
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

SECTION 16. OTHER INFORMATION

Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
Dow IHG	:	Dow Industrial Hygiene Guideline
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	:	8-hour, time-weighted average
Dow IHG / STEL	:	Short term exposure limit
Dow IHG / TWA	:	Time weighted average
OSHA P0 / TWA	:	8-hour time weighted average

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OSHA P0 / C : Ceiling limit
OSHA Z-1 / TWA : 8-hour time weighted average
US WEEL / TWA : 8-hr TWA

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; ASTM - American Society for the Testing of Materials; ECx - Concentration associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - not otherwise specified; NOEC - Non-Observed Effective Concentration; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; (Q)SAR - (Quantitative) Structure Activity Relationship; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SDS - Safety Data Sheet; UN - United Nations. CFR - Code of Federal Regulations. IARC - International Agency for Research on Cancer. IATA-DGR - International Air Transport Association Dangerous Goods Regulations. OSHA - Occupational Safety and Health Administration. RCRA - Resource Conservation and Recovery Act. RQ - Reportable Quantity. SARA - Superfund Amendments and Reauthorization Act. TSCA - Toxic Substances Control Act.

Revision Date : 03/20/2024

Product code: GF-5223

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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