

# SAFETY DATA SHEET



## Keystone® NXT

Version	Revision Date:	SDS Number:	Date of last issue: -
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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.

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### SECTION 1. IDENTIFICATION

Product name : Keystone® NXT

#### Manufacturer or supplier's details

#### COMPANY IDENTIFICATION

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

**Customer Information Number** : 800-992-5994

**E-mail address** : customerinformation@corteva.com

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

#### Recommended use of the chemical and restrictions on use

Recommended use : End use herbicide product

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### SECTION 2. HAZARDS IDENTIFICATION

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

Acute toxicity (Oral) : Category 4

Skin sensitization : Category 1

Carcinogenicity : Category 2

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

Specific target organ toxicity : Category 2  
- repeated exposure (Oral)

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**GHS label elements**

Hazard pictograms

:



Signal Word

:

Warning

Hazard Statements

:

H302 Harmful if swallowed.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.  
H351 Suspected of causing cancer.  
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary Statements

:

**Prevention:**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe mist or vapors.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
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/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
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.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
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.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
acetochlor (ISO)	34256-82-1	33.4
atrazine (ISO)	1912-24-9	26.9
Furilazole	121776-33-8	$\geq 1.3$
Balance	Not Assigned	$\geq 30 - < 40$

Actual concentration is withheld as a trade secret

### SECTION 4. FIRST AID MEASURES

- If inhaled : Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
- In case of skin contact : Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.  
Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly.
- In case of eye contact : Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice.
- If swallowed : Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor.  
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : May cause an allergic skin reaction.
- 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.  
Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam
- Unsuitable extinguishing : None known.

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- media  
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:  
Nitrogen oxides (NOx)  
Hydrogen chloride gas  
Carbon oxides
  
- 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.

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**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.

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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.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
atrazine (ISO)	1912-24-9	TWA (Inhalable particulate matter)	2 mg/m <sup>3</sup>	ACGIH
		TWA	5 mg/m <sup>3</sup>	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 : Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH approved respiratory protection.

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Neoprene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). 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.

Eye protection : Wear chemical splash goggles and face shield.

Skin and body protection : Wear protective clothing (long-sleeve shirt and long pants, socks plus shoes and chemical resistant gloves such as barrier laminate, nitrile rubber, neoprene, or Viton).

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : suspension

Color : Pink

Odor : slight

Odor Threshold : No data available

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pH : 7.0 - 8.5

Melting point/range : Not applicable

Freezing point : No data available

Boiling point/boiling range : No data available

Flash point : > 199.99 °F / > 93.33 °C  
Method: closed cup

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : Not volatile

Relative vapor density : Not applicable

Relative density : 1.1

Density : 1.1100 - 1.1140 g/cm<sup>3</sup> (68 °F / 20 °C)

Solubility(ies)  
Water solubility : emulsifies

Autoignition temperature : No data available

Viscosity  
Viscosity, kinematic : Not applicable

Explosive properties : No data available

Oxidizing properties : No data available

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### 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.  
May form explosive dust-air mixture.

Conditions to avoid : None known.

Incompatible materials : None.

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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:  
Nitrogen oxides (NOx)  
Hydrogen chloride gas  
Carbon oxides

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

##### Product:

Acute oral toxicity : LD50 (Rat): 1,338 mg/kg  
Remarks: For similar material(s):

Acute inhalation toxicity : LC50 (Rat): > 1.1 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: For similar material(s):  
Maximum attainable concentration.

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg  
Remarks: For similar material(s):

##### 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

##### **atrazine (ISO):**

Acute oral toxicity : LD50 (Rat, male): 3,125 mg/kg  
Remarks: In animals, effects have been reported on the fol-



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lowing organs:  
Liver.

Acute inhalation toxicity : Remarks: No adverse effects are anticipated from single exposure to dust.  
Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

LC50 (Rat): > 5.8 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute dermal toxicity

**Furilazole:**

Acute oral toxicity : LD50 (Rat, male and female): 869 mg/kg

Acute inhalation toxicity : Remarks: Prolonged excessive exposure to dust may cause adverse effects.

LC50 (Rat, male and female): > 2.3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Symptoms: No deaths occurred at this concentration.  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg

**Skin corrosion/irritation****Product:**

Species : Rabbit  
Result : No skin irritation  
Remarks : For similar material(s):

**Components:****acetochlor (ISO):**

Result : Skin irritation

**Serious eye damage/eye irritation****Product:**

Species : Rabbit  
Result : No eye irritation  
Remarks : For similar material(s):

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**Respiratory or skin sensitization****Product:**

Species : Guinea pig  
Assessment : May cause sensitization by skin contact.  
Remarks : For similar material(s):

**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.

**atrazine (ISO):**

Assessment : Does not cause skin sensitization.  
Remarks : Skin contact may cause an allergic skin reaction in a small proportion of individuals.  
  
Remarks : For respiratory sensitization:  
No relevant data found.

**Furilazole:**

Assessment : The product is a skin sensitizer, sub-category 1A.  
Remarks : Has caused allergic skin reactions when tested in guinea pigs.  
  
Remarks : For respiratory sensitization:  
No relevant data found.

**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.

**atrazine (ISO):**

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

**Carcinogenicity****Product:**

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

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**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.

**atrazine (ISO):**

Carcinogenicity - Assessment : Has caused cancer in some laboratory animals., However, the effects are species specific and are not relevant to humans.

**Furilazole:**

Carcinogenicity - Assessment : Has caused cancer in laboratory animals., However, the relevance of this to humans is unknown.

**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.

**atrazine (ISO):**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.  
Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

**Furilazole:**

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction., In animal studies, did not interfere with fertility.  
Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

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**STOT-single exposure****Product:**

Assessment : May cause respiratory irritation.

**Components:****acetochlor (ISO):**

Assessment : May cause respiratory irritation.

**atrazine (ISO):**

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

**Furilazole:**

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

**STOT-repeated exposure****Components:****atrazine (ISO):**

Routes of exposure : Oral  
Assessment : May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****acetochlor (ISO):**

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

**atrazine (ISO):**

Remarks : In animals, effects have been reported on the following organs:  
Heart.  
Central nervous system.  
Kidney.  
Liver.  
Mammary gland.

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**Furilazole:**

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

**atrazine (ISO):**

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

**Furilazole:**

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

**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)

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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
- 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

**atrazine (ISO):**

- Toxicity to fish : Remarks: Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
- LC50 (Poecilia reticulata (guppy)): 46 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 pulex (Water flea)): 5.29 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 : EyC50 (*Pseudokirchneriella subcapitata* (green algae)): 0.235 mg/l  
 End point: Biomass  
 Exposure time: 96 h  
 Method: OECD Test Guideline 201 or Equivalent

EbC50 (*Lemna minor* (duckweed)): 0.153 mg/l  
 End point: Biomass  
 Exposure time: 96 h  
 Method: OECD Test Guideline 201 or Equivalent

Toxicity to soil dwelling organisms : LC50 (*Eisenia fetida* (earthworms)): 78 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 slightly toxic to birds on a dietary basis (LC50 between 1001 and 5000 ppm).

(*Colinus virginianus* (Bobwhite quail)): 940 mg/kg bodyweight.

(*Coturnix japonica* (Japanese quail)): > 1000 mg/kg diet.  
 Exposure time: 8 d

oral LD50 (*Apis mellifera* (bees)): > 97 µg/bee

contact LD50 (*Apis mellifera* (bees)): > 100 µg/bee

**Furilazole:**

Toxicity to fish : Remarks: Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50 (*Lepomis macrochirus* (Bluegill sunfish)): 4.6 mg/l  
 Exposure time: 96 h  
 Test Type: static test  
 Method: OECD Test Guideline 203

LC50 (*Oncorhynchus mykiss* (rainbow trout)): 6.2 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 26 mg/l  
 Exposure time: 48 h  
 Test Type: static test

Toxicity to algae/aquatic plants : ErC50 (*Scenedesmus capricornutum* (fresh water algae)): 85.2 mg/l  
 End point: Growth rate inhibition  
 Exposure time: 72 h  
 Test Type: static test  
 Method: OECD Test Guideline 201

NOEC (*Scenedesmus capricornutum* (fresh water algae)): 12.5 mg/l

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End point: Growth rate inhibition  
 Exposure time: 72 h  
 Test Type: static test  
 Method: OECD Test Guideline 201

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

LD50 (Colinus virginianus (Bobwhite quail)): > 2,000 mg/kg

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5,620 ppm  
 Exposure time: 5 d

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5,620 ppm  
 Exposure time: 5 d

**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 cm<sup>3</sup>/s  
 Method: Estimated.

**atrazine (ISO):**

Biodegradability : Result: Not readily biodegradable.  
 Remarks: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

**Furilazole:**

Biodegradability : Result: Not biodegradable  
 Remarks: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biodegradation: 1 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301F or Equivalent  
 Remarks: 10-day Window: Fail



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**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).

**atrazine (ISO):**

Partition coefficient: n-octanol/water : log Pow: 2.61  
Method: Measured

log Pow: 2.75

Method: Measured

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

**Furilazole:**

Partition coefficient: n-octanol/water : log Pow: 2.12  
Method: Estimated.

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

**Balance:**

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

**Mobility in soil****Components:****acetochlor (ISO):**

Distribution among environmental compartments : Koc: 156  
Method: Estimated.

Remarks: Potential for mobility in soil is medium (Koc between 150 and 500).

**atrazine (ISO):**

Distribution among environmental compartments : Koc: 150 - 210  
Method: Measured

Remarks: Potential for mobility in soil is medium (Koc between 150 and 500).

**Furilazole:**

Distribution among environmental compartments : Koc: 56 - 341

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mental compartments      Remarks: Potential for mobility in soil is high (Koc between 50 and 150).

### 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.

#### atrazine (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.

#### Furilazole:

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.

### 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.

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## 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 gener-

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ator 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.

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**SECTION 14. TRANSPORT INFORMATION**
**International Regulations****UNRTDG**

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

**IATA-DGR**

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Acetochlor, Atrazine)
Class	:	9
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, Atrazine)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes
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**

Not regulated as a dangerous good

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### 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.

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## SECTION 15. REGULATORY INFORMATION

**SARA 311/312 Hazards** : Acute toxicity (any route of exposure)  
Respiratory or skin sensitization  
Carcinogenicity  
Specific target organ toxicity (single or repeated exposure)

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

atrazine (ISO)      1912-24-9      >= 20 - < 30 %

### US State Regulations

#### Pennsylvania Right To Know

atrazine (ISO)      1912-24-9

#### California Prop. 65

WARNING: This product can expose you to chemicals including acetochlor (ISO), Furilazole, which is/are known to the State of California to cause cancer, and atrazine (ISO), 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](http://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 : 62719-671

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

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workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**CAUTION**

Harmful if swallowed or inhaled  
 Causes moderate eye irritation  
 May cause allergic skin reaction  
 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)
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
ACGIH / TWA	:	8-hour, time-weighted average
OSHA P0 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; 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; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Con-

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trol Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 06/29/2022

Product code: GF-3151

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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