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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.

SECTION 1. IDENTIFICATION

Product name : Pixxaro™ EC

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

SECTION 2. HAZARDS IDENTIFICATION

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

Eye irritation : Category 2B

Skin sensitization : Sub-category 1B

Specific target organ toxicity

jaii

: Category 3 (Respiratory system)

- single exposure

GHS label elements

Hazard pictograms :

Signal Word : Warning

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Hazard Statements : H317 May cause an allergic skin reaction.

H320 Causes eve irritation.

H335 May cause respiratory irritation.

Precautionary Statements : Prevention:

P261 Avoid breathing mist or vapors.

P264 Wash skin thoroughly after handling.

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.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/

attention.

P337 + P313 If eye irritation persists: Get medical advice/ atten-

tion.

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 dis-

posal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
fluroxypyr-meptyl (ISO)	81406-37-3	38.94
Halauxifen-methyl	943831-98-9	1.21
Cloquintocet-mexyl	99607-70-2	1.12
Benzenesulfonic Acid, 4-C10-14-Alkyl	90194-26-6	>= 1 - < 3
Derivs., Calcium Salts		
Ethylhexanol	104-76-7	>= 1 - < 3
N-methyl-2-pyrrolidone	872-50-4	>= 0.1 - < 0.3
Balance	Not Assigned	> 50

Actual concentration is withheld as a trade secret





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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.

Suitable emergency safety shower facility should be available

in work area.

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.

Suitable emergency eye wash facility should be available in

work area.

If swallowed : Call a poison control center or doctor immediately for treat-

ment 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. None known.

Most important symptoms and effects, both acute and

delayed

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

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 prod: :

ucts

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:

Sulfur oxides

Nitrogen oxides (NOx)

Carbon oxides





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Hydrogen chloride gas Hydrogen fluoride

Specific extinguishing meth-

ods

Remove undamaged containers from fire area if it is safe to do

SO

Evacuate area.

Use extinguishing measures that are appropriate to local cir-

cumstances 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 emer-

gency procedures

Ensure adequate ventilation.

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 absorb-

ant.

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 infor-

mation.





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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 ap-

plication area.

Do not get on skin or clothing.

Do not breathe vapors or spray mist.

Do not swallow. Do not get in eyes.

Avoid contact with skin and 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
fluroxypyr-meptyl (ISO)	81406-37-3	TWA	10 mg/m3	Dow IHG
Ethylhexanol	104-76-7	TWA	2 ppm	Corteva OEL
N-methyl-2-pyrrolidone	872-50-4	TWA	15 ppm 60 mg/m3	US WEEL
		STEL	30 ppm 120 mg/m3	US WEEL





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Biological occupational exposure limits

Components	CAS-No.	Control	Biological	Sam-	Permissible	Basis
		parameters	specimen	pling	concentra-	
				time	tion	
N-methyl-2-pyrrolidone	872-50-4	5-Hydroxy- N-methyl-2- pyrrolidone	Urine	End of shift (As soon as possible after exposure ceases)	100 mg/l	ACGIH BEI

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 opera-

tions.

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, if discomfort is experienced, use an approved air-purifying respirator.

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of

preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materi-

als include: Natural rubber ("latex"). Neoprene. Ni-

trile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. 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 reac-

tions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection : Use chemical goggles.

Skin and body protection : Use protective clothing chemically resistant to this material.

Selection of specific items such as face shield, boots, apron,

or full body suit will depend on the task.





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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid.

Color : Yellow

Odor : Mild

Odor Threshold : Not applicable

pH : 5.16 (73 °F / 23 °C)

Method: pH Electrode 1% Aqueous solution

Melting point/range : Not applicable

Freezing point No data available

Boiling point/boiling range : No data available

Flash point : $> 212 \, ^{\circ}\text{F} / > 100 \, ^{\circ}\text{C}$

Method: closed cup

Evaporation rate : No data available

Flammability (solid, gas) : Non-flammable

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 : 1.04 g/cm3 (68 °F / 20 °C)

Solubility(ies)

Water solubility : No data available

Autoignition temperature : 662 °F / 350 °C

Viscosity

Viscosity, dynamic : 58.7 mPa.s (68 °F / 20 °C)

Viscosity, kinematic : No data available

Explosive properties : Not explosive





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

Reference substance: Monoammonium phosphate

29.5 mN/m, 77 °F / 25 °C Surface tension

SECTION 10. STABILITY AND REACTIVITY

Not classified as a reactivity hazard. Reactivity

Chemical stability No decomposition if stored and applied as directed.

Stable under normal conditions.

Possibility of hazardous reac-

tions

Stable under recommended storage conditions.

No hazards to be specially mentioned.

None known.

Conditions to avoid None known. Incompatible materials

Strong acids Strong bases

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:

Sulfur oxides Carbon oxides

Nitrogen oxides (NOx) Hydrogen fluoride Hydrogen chloride gas

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity LD50 (Rat, female): > 2,000 - 5,000 mg/kg

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute oral tox-

icity

Acute inhalation toxicity LC50 (Rat, male and female): > 5.80 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute inhala-

tion toxicity

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

Method: OECD Test Guideline 402

Symptoms: No deaths occurred at this concentration.





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Components:

fluroxypyr-meptyl (ISO):

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute oral tox-

icity

Acute inhalation toxicity : LC50 (Rat, male and female): > 1.16 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 inhala-

tion toxicity

Remarks: Maximum attainable concentration.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute dermal

toxicity

Halauxifen-methyl:

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg

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

Cloquintocet-mexyl:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg

Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute oral tox-

icity

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.42 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhala-

tion toxicity

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

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Acute oral toxicity : LD50 (Rat, female): 4,445 mg/kg

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Ethylhexanol:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Target Organs: Central nervous system

Acute inhalation toxicity : LC50 (Rat): 2.17 mg/l





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Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 3,000 mg/kg

Method: OECD Test Guideline 402

N-methyl-2-pyrrolidone:

Acute oral toxicity : LD50 (Rat, male and female): 4,150 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.1 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Symptoms: No deaths occurred at this concentration.

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

Method: OECD Test Guideline 402

Skin corrosion/irritation

Product:

Species : Rabbit

Result : No skin irritation

Components:

fluroxypyr-meptyl (ISO):

Species : Rabbit

Result : No skin irritation

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Result : Skin irritation

Ethylhexanol:

Species : Rabbit Result : Skin irritation

N-methyl-2-pyrrolidone:

Species : Rabbit Result : Skin irritation

Serious eye damage/eye irritation

Product:

Species : Rabbit

Result : Mild eye irritation



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Components:

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Result : Corrosive

Ethylhexanol:

Species : Rabbit Result : Eye irritation

N-methyl-2-pyrrolidone:

Species : Rabbit Result : Eye irritation

Respiratory or skin sensitization

Product:

Species : Mouse

Assessment : The product is a skin sensitizer, sub-category 1B.

Components:

fluroxypyr-meptyl (ISO):

Species : Guinea pig

Assessment : Does not cause skin sensitization.

Halauxifen-methyl:

Remarks : Did not demonstrate the potential for contact allergy in mice.

Remarks : For respiratory sensitization:

No relevant data found.

Cloquintocet-mexyl:

Species : Guinea pig

Assessment : May cause sensitization by skin contact.

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Remarks : For skin sensitization:

Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

Ethylhexanol:

Test Type : HRIPT (human repeat insult patch test)

Species : human

Assessment : Does not cause skin sensitization.





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N-methyl-2-pyrrolidone:

Species Guinea pig

Assessment Does not cause skin sensitization.

Germ cell mutagenicity

Components:

fluroxypyr-meptyl (ISO):

Germ cell mutagenicity -

Assessment

In vitro genetic toxicity studies were negative., Animal genetic

toxicity studies were negative.

Halauxifen-methyl:

Germ cell mutagenicity -

Assessment

In vitro genetic toxicity studies were negative.

Cloquintocet-mexyl:

Germ cell mutagenicity -

Assessment

In vitro genetic toxicity studies were negative., Animal genetic

toxicity studies were negative.

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Germ cell mutagenicity -

Assessment

In vitro genetic toxicity studies were negative., Animal genetic

toxicity studies were negative.

Ethylhexanol:

Germ cell mutagenicity -

Assessment

In vitro genetic toxicity studies were negative., Animal genetic

toxicity studies were negative.

N-methyl-2-pyrrolidone:

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:

fluroxypyr-meptyl (ISO):

Carcinogenicity - Assess-

ment

For similar active ingredient(s)., Fluroxypyr., Did not cause

cancer in laboratory animals.

Halauxifen-methyl:

Carcinogenicity - Assess-

ment

For similar active ingredient(s)., Halauxifen., Did not cause

cancer in laboratory animals.

Cloquintocet-mexyl:

Carcinogenicity - Assess-

ment

Did not cause cancer in laboratory animals.





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Ethylhexanol:

Carcinogenicity - Assess-

ment

: In laboratory animals, evidence of carcinogenic activity was observed.. These is no evidence that these findings are rele-

vant to humans.

N-methyl-2-pyrrolidone:

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

ment

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.

OSHANo 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

Product:

Reproductive toxicity - As-

sessment

: No toxicity to reproduction

Components:

fluroxypyr-meptyl (ISO):

Reproductive toxicity - As-

sessment

: 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.

Halauxifen-methyl:

Reproductive toxicity - As-

sessment

For similar active ingredient(s)., Halauxifen., 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.

Cloquintocet-mexyl:

Reproductive toxicity - As-

sessment

Did not cause birth defects or any other fetal effects in labora-

tory animals.

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Reproductive toxicity - As-

sessment

: In animal studies, did not interfere with reproduction.

Did not cause birth defects or any other fetal effects in labora-

tory animals.

Ethylhexanol:

Reproductive toxicity - As-

sessment

Has caused birth defects in laboratory animals only at doses toxic to the mother., Has been toxic to the fetus in laboratory animals at doses toxic to the mother., These concentrations

13/30





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exceed relevant human dose levels.

N-methyl-2-pyrrolidone:

Reproductive toxicity - As-

sessment

Clear evidence of adverse effects on development, based on

animal experiments.

N-methyl pyrrolidone has caused toxic effects to the fetus in laboratory animals at high dose levels with either mild or un-

detectable maternal toxicity.

STOT-single exposure

Product:

Routes of exposure : Inhalation

Assessment : May cause respiratory irritation.

Components:

Halauxifen-methyl:

Assessment : Available data are inadequate to determine single exposure

specific target organ toxicity.

Cloquintocet-mexyl:

Assessment : Available data are inadequate to determine single exposure

specific target organ toxicity.

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Assessment : Evaluation of available data suggests that this material is not

an STOT-SE toxicant.

Ethylhexanol:

Routes of exposure : Inhalation

Target Organs : Respiratory Tract

Assessment : May cause respiratory irritation.

N-methyl-2-pyrrolidone:

Routes of exposure : Inhalation

Target Organs : Respiratory Tract

Assessment : May cause respiratory irritation.

Repeated dose toxicity

Components:

fluroxypyr-meptyl (ISO):

Remarks : Based on available data, repeated exposures are not antici-

pated to cause significant adverse effects.

Halauxifen-methyl:

Remarks : In animals, effects have been reported on the following or-





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gans: Kidney. Liver. Thyroid.

Cloquintocet-mexyl:

Remarks : In animals, effects have been reported on the following or-

gans: Liver. Kidney. Thymus. Thyroid. Bladder. Bone marrow.

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Remarks : Based on available data, repeated exposures are not antici-

pated to cause significant adverse effects.

Ethylhexanol:

Remarks : In animals, effects have been reported on the following or-

gans: Blood. Kidney. Liver. Spleen.

N-methyl-2-pyrrolidone:

Remarks : Based on available data, repeated exposures are not antici-

pated to cause significant adverse effects.

Aspiration toxicity

Product:

May be harmful if swallowed and enters airways.

Components:

fluroxypyr-meptyl (ISO):

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

Halauxifen-methyl:

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

Cloquintocet-mexyl:

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

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

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





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Ethylhexanol:

May be harmful if swallowed and enters airways.

N-methyl-2-pyrrolidone:

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 12.2 mg/l

Exposure time: 96 h
Test Type: semi-static test

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 15 mg/l

Exposure time: 48 h Test Type: semi-static test

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Myriophyllum spicatum): 0.0235 mg/l

End point: Growth inhibition

Exposure time: 14 d

Test Type: Growth inhibition

EC50 (Pseudokirchneriella subcapitata (green algae)): 0.166

mg/l

Exposure time: 72 h

Toxicity to soil dwelling or-

ganisms

LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg

Exposure time: 14 d

NOEC (Eisenia fetida (earthworms)): 80 mg/kg

Exposure time: 56 d

Toxicity to terrestrial organ-

isms

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2000

mg/kg bodyweight.

contact LD50 (Apis mellifera (bees)): > 200.0 µg/bee

Exposure time: 48 h

oral LD50 (Apis mellifera (bees)): > 191.0 µg/bee

Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.





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Components:

fluroxypyr-meptyl (ISO):

Remarks: Material is very highly toxic to aquatic organisms on Toxicity to fish

an acute basis (LC50/EC50 < 0.1 mg/L in the most sensitive

species).

LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.225 mg/l

Exposure time: 96 h Test Type: semi-static test

Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 0.183 mg/l

Exposure time: 48 h Test Type: semi-static test

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic

plants

ErC50 (diatom Navicula sp.): 0.24 mg/l

Exposure time: 72 h

Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

EbC50 (alga Scenedesmus sp.): > 0.47 mg/l

Exposure time: 72 h

ErC50 (Selenastrum capricornutum (green algae)): > 1.410

mg/l

Exposure time: 96 h

ErC50 (Myriophyllum spicatum): 0.075 mg/l

Exposure time: 14 d

NOEC (Myriophyllum spicatum): 0.031 mg/l

Exposure time: 14 d

M-Factor (Acute aquatic tox-

icity)

10

Toxicity to fish (Chronic tox-

icity)

NOEC (Rainbow trout (Oncorhynchus mykiss)): 0.32 mg/l

M-Factor (Chronic aquatic

toxicity)

Toxicity to soil dwelling or-

ganisms Toxicity to terrestrial organ-

isms

LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg

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).

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2000

mg/kg bodyweight. Exposure time: 5 d

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5000

mg/kg diet.

oral LD50 (Apis mellifera (bees)): > 100 micrograms/bee





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Exposure time: 48 h

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

Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Halauxifen-methyl:

Toxicity to fish : Remarks: Material is very highly toxic to aquatic organisms on

an acute basis (LC50/EC50 < 0.1 mg/L in the most sensitive

species).

LC50 (Rainbow trout (Oncorhynchus mykiss)): 2.01 mg/l

Exposure time: 96 h Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): > 3.22 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 2.12 mg/l

Exposure time: 48 h Test Type: static test

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 3.0

mg/l

Exposure time: 96 h

ErC50 (Myriophyllum spicatum): 0.000393 mg/l

End point: Growth rate inhibition

Exposure time: 14 d

M-Factor (Acute aquatic tox-

icity)

1,000

Toxicity to fish (Chronic tox-

icity)

NOEC (Pimephales promelas (fathead minnow)): 0.259 mg/l

End point: Other

Test Type: flow-through test

NOEC (Cyprinodon variegatus (sheepshead minnow)):

0.00272 mg/l

Exposure time: 36 d

Test Type: flow-through test

Toxicity to daphnia and other

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 0.484 mg/l

End point: number of offspring

Exposure time: 21 d Test Type: semi-static test

M-Factor (Chronic aquatic

toxicity)

1,000

Toxicity to microorganisms : EC50 (activated sludge): > 981 mg/l





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Exposure time: 1 d

Toxicity to soil dwelling or-

ganisms

: LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg

Exposure time: 14 d End point: mortality

Toxicity to terrestrial organ-

isms

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).

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5,620

ppm

Exposure time: 5 d Method: Other guidelines

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5,620

ppm

Exposure time: 5 d Method: Other guidelines

oral LD50 (Colinus virginianus (Bobwhite quail)): > 2250

mg/kg bodyweight. End point: mortality

contact LD50 (Apis mellifera (bees)): > 98.1 µg/bee

Exposure time: 48 h End point: mortality

oral LD50 (Apis mellifera (bees)): > 108 μg/bee

Exposure time: 48 h End point: mortality

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Cloquintocet-mexyl:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.97 mg/l

Exposure time: 96 h

Test Type: flow-through test Method: Method Not Specified.

Remarks: As the ester active substance.

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 0.82 mg/l

Exposure time: 48 h

Test Type: flow-through test Method: Method Not Specified.

Toxicity to algae/aquatic

plants

EbC50 (alga Scenedesmus sp.): 0.63 mg/l

End point: Biomass Exposure time: 96 h

Method: Method Not Specified.





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EbC50 (Lemna minor (duckweed)): > 0.42 mg/l

End point: Biomass Exposure time: 14 d

Method: Method Not Specified.

Toxicity to soil dwelling or-

ganisms

LC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg

Toxicity to terrestrial organ-

isms

oral LD50 (Anas platyrhynchos (Mallard duck)): > 2000 mg/kg

bodyweight.

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5200

mg/kg diet.

Exposure time: 8 d

oral LD50 (Apis mellifera (bees)): > 100 micrograms/bee

Exposure time: 48 h

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

Exposure time: 48 h

Ecotoxicology Assessment

Acute aquatic toxicity Very toxic to aquatic life.

Chronic aquatic toxicity Very toxic to aquatic life with long lasting effects.

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

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).

Remarks: Material is toxic to aquatic organisms

(LC50/EC50/IC50 between 1 and 10 mg/L in the most sensi-

tive species).

LC50 (Fish): > 1 - 10 mg/l Exposure time: 96 h Test Type: Static

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 2.9 mg/l

Exposure time: 48 h Test Type: Static

Toxicity to algae/aquatic

plants

EC50 (Algae): 29 mg/l

Exposure time: 96 h Test Type: Static

Toxicity to fish (Chronic tox-

icity)

(Fish): 0.23 mg/l

Exposure time: 72 d Test Type: flow-through

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

(Daphnia magna (Water flea)): 1.18 mg/l

Exposure time: 21 d

Test Type: flow-through test





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Toxicity to microorganisms : EC50 (Bacteria): 550 mg/l

Exposure time: 3 h

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Ethylhexanol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 32 - 37 mg/l

Exposure time: 96 h

LC50 (Fathead minnow (Pimephales promelas)): 28.2 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Daphnia magna (Water flea)): 35.2 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

EC50 (Daphnia magna (Water flea)): 39 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 11.5

mg/l

End point: Growth rate inhibition

Exposure time: 72 h

Method: OECD Test Guideline 201 or Equivalent

Toxicity to microorganisms : EC50 (Bacteria): 256 - 320 mg/l

Exposure time: 16 h

N-methyl-2-pyrrolidone:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 5,000 mg/l

Exposure time: 96 h Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 1,072 mg/l

Exposure time: 96 h Test Type: static test

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 1,000 mg/l

Exposure time: 24 h Test Type: static test

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic

plants

ErC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l

End point: Growth rate inhibition

Exposure time: 72 h Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

Toxicity to daphnia and other

NOEC (Daphnia magna (Water flea)): 12.5 mg/l

aquatic invertebrates (Chron- Exposure time: 21 d





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ic toxicity) Test Type: semi-static test

Method: OECD Test Guideline 211 or Equivalent

Persistence and degradability

Components:

fluroxypyr-meptyl (ISO):

Biodegradability Result: Not biodegradable

Remarks: Material is not readily biodegradable according to

OECD/EEC guidelines.

Biodegradation: 32 % Exposure time: 28 d

Method: OECD Test Guideline 301D or Equivalent

Remarks: 10-day Window: Fail

ThOD 2.2 kg/kg

Stability in water Test Type: Hydrolysis

Degradation half life (half-life): 454 d

Halauxifen-methyl:

Biodegradability Result: Not biodegradable

Remarks: For similar active ingredient(s).

Halauxifen.

Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegra-

dability.

Biodegradation: 7.7 % Exposure time: 28 d

Method: OECD Test Guideline 310 or Equivalent Remarks: 10-day Window: Not applicable

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Biodegradability Remarks: Material is readily biodegradable. Passes OECD

test(s) for ready biodegradability.

Result: Readily biodegradable. Biodegradation: 100 %

Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Remarks: 10-day Window: Pass

Ethylhexanol:

Biodegradability Result: Readily biodegradable.

> Biodegradation: > 95 % Exposure time: 5 d

Method: OECD Test Guideline 302B or Equivalent

Remarks: 10-day Window: Not applicable





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Biodegradation: 68 % Exposure time: 17 d

Method: OECD Test Guideline 301B or Equivalent

Remarks: 10-day Window: Pass

Biochemical Oxygen De-

mand (BOD)

26 - 70 %

Incubation time: 5 d

75 - 81 %

Incubation time: 10 d

86 - 87 %

Incubation time: 20 d

Chemical Oxygen Demand

(COD)

2.70 kg/kg

ThOD : 2.95 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Rate constant: 1.32E-11 cm3/s

Method: Estimated.

N-methyl-2-pyrrolidone:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 91 % Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Remarks: 10-day Window: Pass

Concentration: 30 mg/l Biodegradation: 73 % Exposure time: 28 d

Method: OECD Test Guideline 301C or Equivalent

Remarks: 10-day Window: Not applicable

Biodegradation: > 90 % Exposure time: 8 d

Method: OECD Test Guideline 302B or Equivalent

Remarks: 10-day Window: Not applicable

ThOD : 2.58 kg/kg

Photodegradation : Test Type: Half-life (indirect photolysis)

Sensitizer: OH radicals

Rate constant: 2.199E-11 cm3/s

Method: Estimated.

Bioaccumulative potential

Components:

fluroxypyr-meptyl (ISO):

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)





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Bioconcentration factor (BCF): 26

Method: Measured

Partition coefficient: n-

octanol/water

log Pow: 5.04

Method: Measured

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).

Halauxifen-methyl:

Bioaccumulation Species: Lepomis macrochirus (Bluegill sunfish)

Bioconcentration factor (BCF): 233

Exposure time: 42 d

Temperature: 71.2 °F / 21.8 °C Concentration: 0.00194 mg/l

Partition coefficient: n-

octanol/water

log Pow: 3.76

Remarks: Bioconcentration potential is moderate (BCF be-

tween 100 and 3000 or Log Pow between 3 and 5).

Cloquintocet-mexyl:

Bioaccumulation Species: Fish

Bioconcentration factor (BCF): 122 - 621

Partition coefficient: n-

octanol/water

log Pow: 5.3

Method: Estimated.

Remarks: Bioconcentration potential is moderate (BCF be-

tween 100 and 3000 or Log Pow between 3 and 5).

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Bioaccumulation Bioconcentration factor (BCF): 2 - 1,000

Partition coefficient: n-

octanol/water

log Pow: 2.89

Remarks: Bioconcentration potential is moderate (BCF be-

tween 100 and 3000 or Log Pow between 3 and 5).

Ethylhexanol:

Partition coefficient: n-

octanol/water

log Pow: 3.1

Method: Measured

Remarks: Bioconcentration potential is moderate (BCF be-

tween 100 and 3000 or Log Pow between 3 and 5).

N-methyl-2-pyrrolidone:

Partition coefficient: n-

octanol/water

log Pow: -0.38

Method: Measured

Remarks: Bioconcentration potential is low (BCF < 100 or Log

Pow < 3).





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Balance:

Partition coefficient: n-

octanol/water

Remarks: No relevant data found.

Mobility in soil

Components:

fluroxypyr-meptyl (ISO):

Distribution among environ-

mental compartments

Koc: 6200 - 43000

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

5000).

Halauxifen-methyl:

Distribution among environ-

mental compartments

Koc: 5684

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

5000).

Cloquintocet-mexyl:

Distribution among environmental compartments

Koc: 38070

Method: Estimated.

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

5000).

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Distribution among environ-

mental compartments

Remarks: No relevant data found.

Ethylhexanol:

Distribution among environ-

mental compartments

Koc: 800

Method: Estimated.

Remarks: Potential for mobility in soil is low (Koc between 500

and 2000).

N-methyl-2-pyrrolidone:

Distribution among environ-

mental compartments

Koc: 21

Method: Estimated.

Remarks: Potential for mobility in soil is very high (Koc be-

tween 0 and 50).

Given its very low Henry's constant, volatilization from natural

bodies of water or moist soil is not expected to be an im-

portant fate process.

Balance:

Distribution among environ-

mental compartments

Remarks: No relevant data found.

Other adverse effects

Components:

fluroxypyr-meptyl (ISO):

Results of PBT and vPvB This substance is not considered to be persistent, bioaccumu-





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assessment lating 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.

Halauxifen-methyl:

Results of PBT and vPvB

assessment

: This substance is not considered to be persistent, bioaccumu-

lating 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.

Cloquintocet-mexyl:

Results of PBT and vPvB

assessment

: This substance is not considered to be persistent, bioaccumu-

lating 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.

Benzenesulfonic Acid, 4-C10-14-Alkyl Derivs., Calcium Salts:

Results of PBT and vPvB

assessment

: This substance has not been assessed for persistence, bioac-

cumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone laver.

Ethylhexanol:

Results of PBT and vPvB

assessment

This substance is not considered to be persistent, bioaccumu-

lating 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.

N-methyl-2-pyrrolidone:

Results of PBT and vPvB

assessment

This substance is not considered to be persistent, bioaccumu-

lating 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, bioac-

cumulation 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 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 regu-

lations.

If the material as supplied becomes a waste, follow all appli-

cable 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.

(Fluroxypyr, Halauxifen-methyl)

Class 9 Packing group Ш Labels 9

IATA-DGR

UN/ID No. UN 3082

Proper shipping name Environmentally hazardous substance, liquid, n.o.s.

(Fluroxypyr, Halauxifen-methyl)

Class 9 Ш Packing group

Miscellaneous Labels

Packing instruction (cargo

aircraft)

Packing instruction (passen-964

ger aircraft)

IMDG-Code

UN number UN 3082

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, Proper shipping name

N.O.S.

964

(Fluroxypyr, Halauxifen-methyl)

Class Ш Packing group Labels 9 EmS Code F-A, S-F Marine pollutant yes

Remarks Stowage category A





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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

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

Serious eye damage or eye irritation

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

Ethylhexanol 104-76-7

California Prop. 65

WARNING: This product can expose you to chemicals including 4-methylpentan-2-one, which is/are known to the State of California to cause cancer, and

N-methyl-2-pyrrolidone, 4-methylpentan-2-one, 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

The following substance(s) is/are subject to a Significant New Use Rule: Cloquintocet-mexyl 99607-70-2

The following substance(s) is/are subject to TSCA 12(b) export notification requirements: Cloquintocet-mexyl 99607-70-2





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Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 62719-735

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

Causes moderate eye irritation.

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 BEI : ACGIH - Biological Exposure Indices (BEI)
Corteva OEL : Corteva Occupational Exposure Limit
Dow IHG : Dow Industrial Hygiene Guideline

US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)

Corteva OEL / TWA : Time weighted average

Dow IHG / TWA : Time Weighted Average (TWA):

US WEEL / TWA : 8-hr TWA

US WEEL / STEL : Short-Term TWA

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, Bioaccumu-



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

Revision Date : 06/09/2022

Product code: GF-2819

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.

US / EN