ONDECK



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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 Canada and may not meet the regulatory requirements in other countries.

SECTION 1. IDENTIFICATION

Product name : ONDECK

Other means of identification : No data available

Manufacturer or supplier's details

COMPANY IDENTIFICATION

Manufacturer/importer : CORTEVA AGRISCIENCE CANADA COMPANY

#2450, 215 - 2ND STREET S.W.

CALGARY AB, T2P 1M4

CANADA

Customer Information

Number

: 800-667-3852

E-mail address : solutions@corteva.com

Emergency telephone

number

: CANUTEC

1-888-226-8832

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 Hazardous Products Regulations

Flammable liquids : Category 4

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Serious eye damage : Category 1

Skin sensitisation : Category 1

Carcinogenicity : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity

- single exposure (Oral)

Category 2

Specific target organ toxicity :

Category 3 (Central nervous system)

- single exposure

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Specific target organ toxicity

- repeated exposure

Category 2

Aspiration hazard Category 1

GHS label elements

Hazard pictograms







Signal word Danger

Hazard statements H227 Combustible liquid.

> H302 + H332 Harmful if swallowed or if inhaled. H304 May be fatal if swallowed and enters airways.

H317 May cause an allergic skin reaction. H318 Causes serious eve damage. H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

H371 May cause damage to organs if swallowed.

H373 May cause damage to organs through prolonged or re-

peated exposure.

Precautionary statements

Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames

and other ignition sources. No smoking.

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

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 should not be allowed out of the workplace.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P302 + P352 IF ON SKIN: Wash with plenty of 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 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON

CENTER/ doctor.

P308 + P311 IF exposed or concerned: Call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

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

P362 + P364 Take off contaminated clothing and wash it before

reuse.

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P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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.

Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 2.983 %

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common	CAS-No.	Concentration (% w/w)	
	Name/Synonym			
bromoxynil octanoate	bromoxynil oc-	1689-99-2	25.62	
(ISO)	tanoate (ISO)		25.62	
Tolpyralate	Tolpyralate	1101132-67-5	1.76	
Cloquintocet-mexyl	Cloquintocet-	99607-70-2	0.44	
	mexyl		0.44	
Solvent naphtha (petro-	Solvent naphtha	64742-94-5		
leum), heavy arom.;	(petroleum),			
Kerosine — unspeci-	heavy arom.;		>= 30 - < 40 *	
fied	Kerosine —			
	unspecified			
benzyl alcohol	benzyl alcohol	100-51-6	>= 20 - < 25 *	
Ethoxylated fatty alco-	Ethoxylated	78330-21-9	>= 10 - < 20 *	
hol	fatty alcohol		>= 10 - < 20	
naphthalene	naphthalene	91-20-3	>= 0.1 - < 0.3 *	

^{*} Actual concentration or concentration range 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 : Remove material from skin immediately by washing with soap

and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation per-

sists. Wash clothing before reuse.

Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

In case of eye contact : Wash immediately and continuously with flowing water for at

least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consul-

tation, preferably from an ophthalmologist.

Suitable emergency eye wash facility should be immediately

available.

If swallowed : If swallowed, seek medical attention. Do not induce vomiting

unless directed to do so by medical personnel.

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None known.

Most important symptoms and effects, both acute and

delayed

Protection of first-aiders : First Aid responders should pay attention to self-protection

and use the recommended protective clothing (chemical re-

sistant gloves, splash protection).

If potential for exposure exists refer to Section 8 for specific

personal protective equipment.

Notes to physician : Chemical eye burns may require extended irrigation. Obtain

prompt consultation, preferably from an ophthalmologist.

No specific antidote.

Treatment of exposure should be directed at the control of

symptoms and the clinical condition of the patient.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Unsuitable extinguishing

media

fighting

Do not use direct water stream.

High volume water jet

Specific hazards during fire- : Exposure to combustion products may be a hazard to health.

Vapours may form explosive mixtures with air.

Do not allow run-off from fire fighting to enter drains or water

courses.

Flash back possible over considerable distance.

Hazardous combustion prod-

ucts

During a fire, smoke may contain the original material in addi-

tion to combustion products of varying composition which may

be toxic and/or irritating.

Combustion products may include and are not limited to:

Carbon oxides

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 : Use water spray to cool fire exposed containers and fire af-

fected zone until fire is out and danger of reignition has

passed.

Do not use a solid water stream as it may scatter and spread

fire

Use a water spray to cool fully closed containers.

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 firefighters

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.

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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 absorbant.

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 overpressurization of the container.

Keep in suitable, closed containers for disposal. Wipe up with absorbent material (e.g. cloth, fleece).

Non-sparking tools should be used.

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Suppress (knock down) gases/vapours/mists with a water

spray jet.

See Section 13, Disposal Considerations, for additional infor-

mation.

SECTION 7. HANDLING AND STORAGE

Local/Total ventilation Advice on safe handling Use with local exhaust ventilation.

To avoid spills during handling keep bottle on a metal tray.

Avoid formation of aerosol.

Persons susceptible to skin sensitisation 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 vapours/dust.

Do not smoke.

Handle in accordance with good industrial hygiene and safety

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 vapours or spray mist.

Do not swallow. Do not get in eyes.

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Avoid contact with skin and eyes. Keep container tightly closed.

Keep away from heat and sources of ignition.

Take precautionary measures against static discharges. 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.

No smoking.

Containers which are opened must be carefully resealed and

kept upright to prevent leakage. Keep in properly labelled containers.

Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents

Explosives Gases

Packaging material : Unsuitable material: None known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	100 mg/m3	Corteva OEL
		STEL	300 mg/m3	Corteva OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
naphthalene	91-20-3	TWA	10 ppm	Dow IHG
		STEL	15 ppm	Dow IHG
		TWA	10 ppm 52 mg/m3	CA AB OEL
		STEL	15 ppm 79 mg/m3	CA AB OEL
		TWA	10 ppm	CA BC OEL
		TWAEV	10 ppm	CA QC OEL
		TWA	10 ppm	ACGIH

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

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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.

Eye protection : Use chemical goggles.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : Amber to black

Odour : mild

Odour Threshold : No data available

pH : No data available

Melting point/range : Not applicable

Freezing point No data available

Boiling point/boiling range : No data available

Flash point : 63 °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

Vapour pressure : No data available

Relative vapour density : No data available

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Density : No data available

Solubility(ies)

Water solubility : No data available

Auto-ignition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

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 reac-

tions

Stable under recommended storage conditions.

No hazards to be specially mentioned.

Vapours may form explosive mixture with air.

May form explosive dust-air mixture.

Conditions to avoid

Incompatible materials

Hazardous decomposition

products

Heat, flames and sparks. None.

Decomposition products depend upon temperature, air supply

and the presence of other materials.

Decomposition products can include and are not limited to:

Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:

bromoxynil octanoate (ISO):

Acute oral toxicity : LD50 (Rat): 238 mg/kg

Assessment: The component/mixture is moderately toxic after

single ingestion.

Acute inhalation toxicity : LC50 (Rat): 4 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

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

Tolpyralate:

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

Acute inhalation toxicity : LC50 (Rat): > 311 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

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

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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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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

Remarks: For similar material(s):

Acute inhalation toxicity : LC50 (Rat): > 4.688 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Remarks: For similar material(s): Maximum attainable concentration.

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Remarks: For similar material(s):

benzyl alcohol:

Acute oral toxicity : LD50 (Rat, male): 1,620 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 4.178 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

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

Ethoxylated fatty alcohol:

Acute oral toxicity : LD50 (Rat): 3,950 mg/kg

naphthalene:

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

Lethal Dose (Humans): 5 - 15 grams

Method: Estimated.

Remarks: Excessive exposure may cause hemolysis, thereby

impairing the blood's ability to transport oxygen.

Ingestion of naphthalene by humans has caused hemolytic

anemia.

Toxicity from swallowing may be greater in humans than in

animals.

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In humans, symptoms may include:

Confusion. Lethargy.

Muscle spasms or twitches.

Convulsions. Coma.

Acute inhalation toxicity : Remarks: Excessive exposure may cause irritation to upper

respiratory tract (nose and throat).

Excessive exposure may cause lung injury.

Signs and symptoms of excessive exposure may include:

Headache. Confusion. Sweating.

Nausea and/or vomiting.

LC50 (Rat): > 0.41 mg/l Exposure time: 4 h Test atmosphere: vapour

Symptoms: The LC50 value is greater than the Maximum

Attainable Concentration.

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rat): > 2,500 mg/kg

Remarks: Human case reports suggest Naphthalene may be absorbed through the skin in toxic amounts, especially in chil-

dren.

LD50 (Rabbit): > 2,500 mg/kg

Serious eye damage/eye irritation

Components:

Ethoxylated fatty alcohol:

Result : Corrosive

Respiratory or skin sensitisation

Product:

Species : Guinea pig

Components:

bromoxynil octanoate (ISO):

Result : May cause sensitisation by skin contact.

Tolpyralate:

Remarks : For skin sensitization:

Did not cause sensitisation on laboratory animals.

Remarks : For respiratory sensitization:

No relevant data found.

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Cloquintocet-mexyl:

Species : Guinea pig

Assessment : May cause sensitisation by skin contact.

Solvent naphtha (petroleum), heavy arom.; 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.

benzyl alcohol:

Remarks : For skin sensitization:

Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

naphthalene:

Assessment : Does not cause skin sensitisation.

Remarks : Skin contact may cause an allergic skin reaction in a small

proportion of individuals.

Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

Germ cell mutagenicity

Components:

Tolpyralate:

Germ cell mutagenicity -

Animal testing did not show any mutagenic effects.

Assessment

Cloquintocet-mexyl:

Germ cell mutagenicity - Assessment

In vitro genetic toxicity studies were negative., Animal genetic

toxicity studies were negative.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Germ cell mutagenicity -

Assessment

For similar material(s):, In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

benzyl alcohol:

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.

naphthalene:

Germ cell mutagenicity -

In vitro genetic toxicity studies were negative in some cases

Assessment and po

and positive in other cases.

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Carcinogenicity

Components:

Tolpyralate:

Carcinogenicity - Assess-

ment

Did not cause cancer in laboratory animals.

Cloquintocet-mexyl:

Carcinogenicity - Assess-

ment

Did not cause cancer in laboratory animals.

benzyl alcohol:

Carcinogenicity - Assess-

ment

Did not cause cancer in laboratory animals.

naphthalene:

Carcinogenicity - Assess-

ment

Limited evidence of carcinogenicity in animal studies

Has caused cancer in some laboratory animals., In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were neg-

ative.

Reproductive toxicity

Components:

bromoxynil octanoate (ISO):

Reproductive toxicity - As-

sessment

Suspected human reproductive toxicant

Tolpyralate:

Reproductive toxicity - As-

sessment

In animal studies, did not interfere with reproduction. 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.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Reproductive toxicity - As-

sessment

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

other fetal effects in laboratory animals.

benzyl alcohol:

Reproductive toxicity - As-

sessment

Has been toxic to the fetus in laboratory animals at doses

toxic to the mother.

naphthalene:

Reproductive toxicity - As-

sessment

Available data are inadequate to determine effects on repro-

duction

Did not cause birth defects in laboratory animals.

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STOT - single exposure

Components:

Tolpyralate:

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.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Exposure routes : Inhalation

Assessment : May cause drowsiness or dizziness.

benzyl alcohol:

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

an STOT-SE toxicant.

Ethoxylated fatty alcohol:

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

an STOT-SE toxicant.

naphthalene:

Assessment : Available data are inadequate to determine single exposure

specific target organ toxicity.

STOT - repeated exposure

Components:

Tolpyralate:

Exposure routes : Oral

Target Organs : Eyes, Kidney, Liver

Assessment : May cause damage to organs through prolonged or repeated

exposure.

Repeated dose toxicity

Components:

Tolpyralate:

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

gans: Eye. Kidney Liver

Cloquintocet-mexyl:

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

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

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Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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

pated to cause significant adverse effects.

benzyl alcohol:

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

after inhalation:

Central nervous system.

Muscles. Thymus. Urinary tract.

Based on available data, repeated exposures to small amounts are not anticipated to cause significant adverse ef-

fects.

Ethoxylated fatty alcohol:

Remarks : No relevant data found.

naphthalene:

Remarks : Observations in animals include:

Respiratory effects.

Excessive exposure may cause hemolysis, thereby impairing

the blood's ability to transport oxygen.

Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust. Ingestion of naphthalene by humans has caused hemolytic

anemia.

Aspiration toxicity

Components:

Tolpyralate:

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

Cloquintocet-mexyl:

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

May be fatal if swallowed and enters airways.

benzyl alcohol:

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

Ethoxylated fatty alcohol:

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

naphthalene:

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

bromoxynil octanoate (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.1 mg/l

Exposure time: 96 h

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Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.11 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapita): 0.21 mg/l

Exposure time: 72 h

Tolpyralate:

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

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

Exposure time: 48 h

Toxicity to algae/aquatic

plants

NOEC (Lemna gibba (gibbous duckweed)): 0.00102 mg/l

Exposure time: 7 d

ErC50 (Lemna gibba (gibbous duckweed)): > 0.244 mg/l

Exposure time: 7 d

ErC50 (Pseudokirchneriella subcapitata (green algae)): >

1,000 mg/l

Exposure time: 96 h

M-Factor (Chronic aquatic

toxicity)

1

Cloquintocet-mexyl:

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

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.

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

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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.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Toxicity to fish : Remarks: For similar material(s):

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensi-

tive species tested).

LC50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l

Exposure time: 96 h

Remarks: For similar material(s):

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 3 - 10 mg/l

Exposure time: 48 h

Remarks: For similar material(s):

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): 11 mg/l

Exposure time: 72 h

Remarks: For similar material(s):

Toxicity to terrestrial organ-

isms

Remarks: Material is practically non-toxic to birds on an acute

basis (LD50 > 2000 mg/kg).

Ecotoxicology Assessment

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

benzyl alcohol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 460 mg/l

Exposure time: 96 h Test Type: Static

Method: Method Not Specified.

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 230 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): 770

mg/l

End point: Growth rate Exposure time: 72 h Test Type: Static

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 310

mg/l

Exposure time: 72 h Test Type: Static

Method: OECD Test Guideline 201

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Toxicity to daphnia and other aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna): 51 mg/l

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

Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50 (activated sludge): 2,100 mg/l

End point: Respiration rates.

Exposure time: 49 h

Test Type: Respiration inhibition

Method: OECD 209 Test

Ethoxylated fatty alcohol:

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 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Crangon crangon (shrimp)): 36 mg/l

Exposure time: 96 h

Remarks: For similar material(s):

Ecotoxicology Assessment

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

naphthalene:

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 (Oncorhynchus mykiss (rainbow trout)): 0.11 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 1.6 - 24.1 mg/l

Exposure time: 48 h Test Type: static test

Toxicity to algae/aquatic

plants

ErC50 (Skeletonema costatum (marine diatom)): 0.4 mg/l

Exposure time: 72 h

Test Type: Growth rate inhibition

M-Factor (Acute aquatic tox-

icitv)

: 1

Toxicity to fish (Chronic tox-

icity)

NOEC (Other): 0.37 mg/l

End point: mortality Exposure time: 40 d Test Type: flow-through

M-Factor (Chronic aquatic

toxicity)

1

Ecotoxicology Assessment

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

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Persistence and degradability

Components:

Tolpyralate:

Biodegradability : Result: Readily biodegradable.

Remarks: Material is expected to be readily biodegradable.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Biodegradability : Remarks: Material is inherently biodegradable (reaches >

20% biodegradation in OECD test(s) for inherent biodegrada-

bility).

benzyl alcohol:

Biodegradability : Result: Readily biodegradable.

Remarks: Material is readily biodegradable. Passes OECD

test(s) for ready biodegradability.

Inoculum: activated sludge, domestic (adaptation not speci-

fied)

Concentration: 100 mg/l Biodegradation: 92 - 96 % Exposure time: 14 d

Method: OECD Test Guideline 301C or Equivalent

Remarks: 10-day Window: Not applicable

ThOD : 2.52 kg/kg

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

Sensitiser: OH radicals

Rate constant: 8.25E-12 cm3/s

Method: Estimated.

naphthalene:

Biodegradability : Remarks: Biodegradation under aerobic static laboratory con-

ditions is high (BOD20 or BOD28/ThOD > 40%).

Biochemical Oxygen De-

mand (BOD)

57.000 %

Incubation time: 5 d

71.000 %

Incubation time: 10 d

71.000 %

Incubation time: 20 d

ThOD : 3.00 kg/kg

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

Sensitiser: OH radicals

Concentration: 1,500,000 1/cm3 Rate constant: 2.16E-11 cm3/s

Method: Estimated.

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Bioaccumulative potential

Components:

Tolpyralate:

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

Pow < 3).

Partition coefficient: n-

octanol/water

: log Pow: 1.9

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).

log Pow: 5.2 (25 °C)

pH: 7

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Partition coefficient: n-

octanol/water

Remarks: For similar material(s):

Bioconcentration potential is high (BCF > 3000 or Log Pow

between 5 and 7).

benzyl alcohol:

Partition coefficient: n-

octanol/water

log Pow: 1.10

Method: Measured

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

Pow < 3).

Ethoxylated fatty alcohol:

Partition coefficient: n-

octanol/water

Remarks: No relevant data found.

naphthalene:

Bioaccumulation : Species: Fish

Bioconcentration factor (BCF): 40 - 300

Exposure time: 28 d Method: Measured

Partition coefficient: n-

octanol/water

log Pow: 3.3

Method: Measured

Remarks: Bioconcentration potential is moderate (BCF be-

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

Mobility in soil

Components:

Cloquintocet-mexyl:

Distribution among environ-

mental compartments

Koc: 38070

Method: Estimated.

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

5000).





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Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

Distribution among environ-

mental compartments

Remarks: No relevant data found.

benzyl alcohol:

Distribution among environ-

mental compartments

Koc: 16

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.

Ethoxylated fatty alcohol:

Distribution among environ-

mental compartments

Remarks: No relevant data found.

naphthalene:

Distribution among environ-

mental compartments

Koc: 240 - 1300 Method: Measured

Remarks: Potential for mobility in soil is medium (Koc between

150 and 500).

Other adverse effects

Components:

Cloquintocet-mexyl:

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.

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:

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.

benzyl alcohol:

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.

Ethoxylated fatty alcohol:

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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naphthalene:

Results of PBT and vPvB

assessment

This substance has not been assessed for persistence, bioac-

cumulation and toxicity (PBT).

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

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 regu-

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.

(Bromoxynil octanoate)

9 Class Packing group Ш Labels 9

IATA-DGR

UN/ID No. UN 3082

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

(Bromoxynil octanoate)

Class Packing group Ш

Labels Miscellaneous Packing instruction (cargo 964

Packing instruction (passen-

aircraft)

964

ger aircraft)

IMDG-Code

UN number UN 3082

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, Proper shipping name

N.O.S.

(Bromoxynil octanoate)

Class 9 Packing group Ш 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.

National Regulations

TDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Bromoxynil octanoate)

Class : 9
Packing group : III
Labels : 9
ERG Code : 171

Marine pollutant : yes(Bromoxynil octanoate)

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 5 L 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.

For Canadian Ground transportation TDG Exemption: 1.45.1 Marine Pollutants (Part 3, Documentation, and Part 4, Dangerous Goods Safety Marks, do not apply if they are in transport solely on land by road vehicle or railway vehicle).

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

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

DSL : This product contains components that are not listed on the

Canadian DSL nor NDSL.

Pest Control Products Act (PCPA) Registration Number : 34709

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

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act (PCPA). There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. Following is the hazard information required on the pest control products label:

PCPA Label Hazard Communications:

Read the label and booklet before using. Keep out of reach of children.

WARNING POISON EYE AND SKIN IRRITANT POTENTIAL SKIN SENSITIZER

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Allergens Contained in the Pest Control Product: Warning, contains the allergen sulfites

May be fatal if absorbed through the skin or swallowed

This product is toxic to: Aquatic organisms

Non-target terrestrial plants

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)

CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table

2: OEL)

CA BC OEL : Canada. British Columbia OEL

CA QC OEL : Québec. Regulation respecting occupational health and safe-

ty, Schedule 1, Part 1: Permissible exposure values for air-

borne contaminants

Corteva OEL : Corteva Occupational Exposure Limit
Dow IHG : Dow Industrial Hygiene Guideline
ACGIH / TWA : 8-hour, time-weighted average
CA AB OEL / TWA : 8-hour Occupational exposure limit
CA AB OEL / STEL : 15-minute occupational exposure limit

CA BC OEL / TWA : 8-hour time weighted average

CA QC OEL / TWAEV : Time-weighted average exposure value

Corteva OEL / STEL : Short term exposure limit
Corteva OEL / TWA : Time weighted average
Dow IHG / STEL : Short term exposure limit
Dow IHG / TWA : Time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR -Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration: NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evalua-

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tion, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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Product code: GF-5036

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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