

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



ZORVEC ENDAVIA

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	10/3/2020	800080000198	Date of first issue: 03.10.2022

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 Great Britain and may not meet the regulatory requirements in other countries.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : ZORVEC ENDAVIA

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-
stance/Mixture : Fungicide

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

Manufacturer/importer

Corteva Agriscience UK Ltd
CPC2 CAPITAL PARK
FULBOURN CAMBRIDGE - England - CB21 5XE
UNITED KINGDOM

Customer Information : + 44 800 689 8899
Number
E-mail address : SDS@corteva.com

1.4 Emergency telephone number

24 Hour Emergency Telephone Number: +44 161 884 1235

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms : 

Signal word : Warning

Hazard statements :
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :
Prevention:
P201 Obtain special instructions before use.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Hazardous components which must be listed on the label:

Benthiavalicarb-isopropyl

Supplemental Hazard Statements : EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

Additional Labelling

The following percentage of the mixture consists of ingredient(s) with unknown acute oral toxicity: 10 %

The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 10 %

The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 10 %

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 10 %

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2.3 Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Benthiavalicarb-isopropyl	177406-68-7	Skin Sens. 1; H317 Carc. 2; H351 Aquatic Chronic 3; H412	$\geq 3 - < 10$
oxathiapiprolin (ISO)	1003318-67-9 613-332-00-1	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 11 M-Factor (Chronic aquatic toxicity): 11	3.2
Ethylhexanol	104-76-7 203-234-3 01-2119487289-20	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 (Respiratory sys- tem)	$\geq 1 - < 3$
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt	Not Assigned 01-2119560592-37	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	$\geq 1 - < 2.5$

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Never give anything by mouth to an unconscious person.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off immediately with soap and plenty of water.
In the case of skin irritation or allergic reactions see a physi-
cian.

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Wash contaminated clothing before re-use.

In case of eye contact : If easy to do, remove contact lens, if worn.
Hold eye open and rinse slowly and gently with water for 15-20 minutes.
If eye irritation persists, consult a specialist.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No cases of human intoxication are known and the symptoms of experimental intoxication are not known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

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

Hazardous combustion products : Nitrogen oxides (NOx)
Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use appropriate safety equipment. For additional information,

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refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions

Environmental precautions : 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.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Clean up remaining materials from spill with suitable absorbent.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in.
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped,
Recovered material should be stored in a vented container.
The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to over-pressurization of the container.
Keep in suitable, closed containers for disposal.
Wipe up with absorbent material (e.g. cloth, fleece).
See Section 13, Disposal Considerations, for additional information.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice. Smoking, eating and drinking should be prohibited in the application area. 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.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing. Keep working clothes separately. Contaminated work clothing should not be allowed out of the workplace. Wash hands and face before breaks and immediately after handling the product. When using do not eat, drink or smoke. Keep away from food, drink and animal feedingstuffs. Remove

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clothing/PPE immediately if material gets inside. For environmental protection remove and wash all contaminated protective equipment before re-use. Dispose of rinse water in accordance with local and national regulations.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in a closed container. Keep in properly labelled containers. Store in accordance with the particular national regulations.

Advice on common storage : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Ethylhexanol	104-76-7	Long-term exposure limit (8-hour TWA reference period)	1 ppm 5.4 mg/m ³	GB EH40
		Limit Value - eight hours	1 ppm 5.4 mg/m ³	2017/164/EU
Further information: Indicative				
		Time weighted average	2 ppm	Corteva OEL
Propanediol	57-55-6	Long-term exposure limit (8-hour TWA reference period) (Total vapour and particles)	150 ppm 474 mg/m ³	GB EH40
		Long-term exposure limit (8-hour TWA reference period) (particles)	10 mg/m ³	GB EH40

8.2 Exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Use sufficient ventilation to keep employee exposure below recommended limits.

Personal protective equipment

Eye protection : Safety glasses with side-shields conforming to EN166
Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact

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- Hand protection : with this material.
- Remarks : The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The suitability for a specific workplace should be discussed with the producers of the protective gloves. The breakthrough time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. The exact breakthrough time can be obtained from the protective glove producer and this has to be observed. Gloves must be inspected prior to use. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Gauntlets of 35 cm long or longer shall be worn over the combination sleeve. Before removing gloves clean them with soap and water.
- Skin and body protection : Manufacturing and processing work:
Full protective clothing Type 6 (EN 13034)
Spray application - outdoor:
Tractor / sprayer with hood:
No personal body protection normally required.
Tractor / sprayer without hood:
Full protective clothing Type 4 (EN 14605)
Nitrile rubber boots (EN 13832-3 / EN ISO 20345).
Backpack / knapsack sprayer:
Full protective clothing Type 4 (EN 14605)
Nitrile rubber boots (EN 13832-3 / EN ISO 20345).
When exceptional circumstances require an access to the treated area before the end of re-entry periods, wear full protective clothing Type 6(EN 13034), nitrile rubber gloves class 3 (EN 374) and nitrile rubber boots (EN 13832-3 / EN ISO 20345).
To optimize the ergonomics it may be recommended to use cotton underwear when wearing some fabrics. Take advice from supplier.
Garment materials that are resistant to both water vapour and air will maximise wearing comfort. Materials should be robust to maintain the integrity and barrier in use.
The permeation resistance of the fabric must be verified independently of the « type » protection recommended, to ensure an appropriate performance level of the material adequate to the corresponding agent and type of exposure.
Mixer and loaders must wear:
Full protective clothing Type 6 (EN 13034)
Rubber apron
Nitrile rubber boots (EN 13832-3 / EN ISO 20345).
- Respiratory protection : Manufacturing and processing work:

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Protective measures : Half mask with vapour filter A1 (EN 141)
: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated.
Only protected handlers may be in the area during application.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	: liquid
Colour	: off-white
Odour	: none
Odour Threshold	: not determined
pH	: not determined
Melting point/freezing point	: Not applicable, the product is a liquid.
Boiling point/boiling range	: > 100 °C
Flash point	: > 200 °C Method: Regulation (EC) No. 440/2008, Annex, A.9, closed cup
Evaporation rate	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapour pressure	: not determined
Relative vapour density	: No data available
Relative density	: 0.85 - 0.95
Density	: No data available
Solubility(ies)	
Water solubility	: dispersible
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: 239 °C Method: Regulation (EC) No. 440/2008, Annex, A.15
Viscosity	
Viscosity, dynamic	: Test not performed, the product is a liquid.

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Viscosity, kinematic	:	Test not performed, the product is a liquid.
Explosive properties	:	Not explosive Method: Regulation (EC) No. 440/2008, Annex, A.14
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Surface tension	:	not determined
Self-ignition	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Stable under recommended storage conditions. No hazards to be specially mentioned. None known.
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10.4 Conditions to avoid

Conditions to avoid	:	None known.
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10.5 Incompatible materials

Materials to avoid	:	Strong acids Strong bases
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10.6 Hazardous decomposition products

Carbon oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

Benthiavalicarb-isopropyl:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 401
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Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 4.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

oxathiapiprolin (ISO):

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

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

Ethylhexanol:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Target Organs: Central nervous system

Acute inhalation toxicity : LC50 (Rat): 2.17 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

LC50 (Rat): 1.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 3,000 mg/kg
Method: OECD Test Guideline 402

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

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

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Skin corrosion/irritation

Product:

Species	:	EpiDerm™ skin model
Exposure time	:	1 h
Method	:	OECD Test Guideline 439
Result	:	No skin irritation

Components:

Benthiavalicarb-isopropyl:

Species	:	Rabbit
Result	:	No skin irritation

oxathiapiprolin (ISO):

Species	:	Rabbit
Result	:	No skin irritation

Ethylhexanol:

Species	:	Rabbit
Result	:	Skin irritation

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Species	:	Rabbit
Result	:	Skin irritation

Serious eye damage/eye irritation

Product:

Species	:	Bovine cornea
Exposure time	:	0.5 h
Result	:	No eye irritation

Components:

Benthiavalicarb-isopropyl:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

oxathiapiprolin (ISO):

Species	:	Rabbit
Result	:	No eye irritation

Ethylhexanol:

Species	:	Rabbit
Result	:	Eye irritation

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Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Species	:	Rabbit
Result	:	Corrosive

Respiratory or skin sensitisation

Components:

Benthiavalicarb-isopropyl:

Species	:	Guinea pig
Assessment	:	May cause sensitisation by skin contact.

oxathiapiprolin (ISO):

Test Type	:	Maximisation Test
Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.

Ethylhexanol:

Test Type	:	HRIPT (human repeat insult patch test)
Species	:	human
Assessment	:	Does not cause skin sensitisation.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.

Germ cell mutagenicity

Components:

Benthiavalicarb-isopropyl:

Germ cell mutagenicity- Assessment	:	In vitro genetic toxicity studies were negative.
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oxathiapiprolin (ISO):

Germ cell mutagenicity- Assessment	:	Animal genetic toxicity studies were negative.
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Ethylhexanol:

Germ cell mutagenicity- Assessment	:	In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.
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Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

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

Components:

Benthiavalicarb-isopropyl:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies
Has caused cancer in laboratory animals.

oxathiapiprolin (ISO):

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

Ethylhexanol:

Carcinogenicity - Assessment : In laboratory animals, evidence of carcinogenic activity was observed., There is no evidence that these findings are relevant to humans.

Reproductive toxicity

Components:

Benthiavalicarb-isopropyl:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.
Did not cause birth defects or any other fetal effects in laboratory animals.

oxathiapiprolin (ISO):

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.
Animal testing did not show any effects on foetal development.

Ethylhexanol:

Reproductive toxicity - Assessment : 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 exceed relevant human dose levels.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.
Did not cause birth defects or any other fetal effects in laboratory animals.

STOT - single exposure

Product:

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

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Components:

Benthiavalicarb-isopropyl:

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

oxathiapiprolin (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

Ethylhexanol:

Exposure routes : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause respiratory irritation.

STOT - repeated exposure

Components:

oxathiapiprolin (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

oxathiapiprolin (ISO):

Remarks : Based on available data, repeated exposures are not expected to cause significant adverse effects except at very high aerosol concentrations. Repeated excessive aerosol exposures may cause respiratory tract irritation and even death.

Ethylhexanol:

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

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Remarks : Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Aspiration toxicity

Product:

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

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Components:

Benthiavalicarb-isopropyl:

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

oxathiapiprolin (ISO):

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

Ethylhexanol:

May be harmful if swallowed and enters airways.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

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

SECTION 12: Ecological information

12.1 Toxicity

Components:

Benthiavalicarb-isopropyl:

- | | | |
|--|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): > 10 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 10 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | EC50 (Pseudokirchneriella subcapitata (algae)): > 10 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201 |
| Toxicity to fish (Chronic toxicity) | : | NOEC: > 10 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout) |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC: > 10 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211 |

oxathiapiprolin (ISO):

- | | | |
|------------------|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.69 mg/l
Exposure time: 96 h
Test Type: Static |
|------------------|---|---|

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LC50 (Lepomis macrochirus (Bluegill sunfish)): > 0.74 mg/l
Exposure time: 96 h
Test Type: Static

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 0.65 mg/l
Exposure time: 96 h
Test Type: static test
Method: OPPTS 850.1075
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.67 mg/l
Exposure time: 48 h
Test Type: Static

Toxicity to algae/aquatic plants : ErC50 (Skeletonema costatum (marine diatom)): 0.351 mg/l
Exposure time: 96 h

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0.142 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 0.46 mg/l
Exposure time: 88 d
Species: Oncorhynchus mykiss (rainbow trout)

NOEC: 0.34 mg/l
Exposure time: 35 d
Species: Cyprinodon variegatus (sheepshead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.75 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test

NOEC: 0.058 mg/l
Exposure time: 32 d
Species: Americamysis bahia (mysid shrimp)
Test Type: flow-through test

M-Factor (Chronic aquatic toxicity) : 1

Toxicity to terrestrial organisms : LD50: > 2,250 mg/kg
Species: Colinus virginianus (Bobwhite quail)
Method: OPPTS 850.2100

LD50: > 2,250 mg/kg
Species: Poephila guttata (zebra finch)
Method: OPPTS 850.2100

dietary LC50: > 5,620 mg/kg
Exposure time: 5 d
Species: Colinus virginianus (Bobwhite quail)

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Method: OECD Test Guideline 205

dietary LC50: > 5,620 mg/kg
Exposure time: 5 d
Species: *Anas platyrhynchos* (Mallard duck)
Method: OECD Test Guideline 205

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

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Toxicity to fish : LC50 (Fish): > 1 - 10 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 2.9 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae/aquatic plants : EC50 (Algae): 29 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to microorganisms : EC50 (Bacteria): 550 mg/l
Exposure time: 3 h

Toxicity to fish (Chronic toxicity) : NOEC: 0.23 mg/l
Exposure time: 72 d
Species: Fish
Test Type: flow-through test

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1.18 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: flow-through test

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: Not readily biodegradable.

Components:

Benthiavalicarb-isopropyl:

Biodegradability : Result: Not biodegradable

oxathiapiprolin (ISO):

Biodegradability : Result: Not readily biodegradable.

Ethylhexanol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 95 %
Exposure time: 5 d
Method: OECD Test Guideline 302B or Equivalent
Remarks: 10-day Window: Not applicable

Biodegradation: 68 %
Exposure time: 17 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Pass

Photodegradation : Test Type: Half-life (indirect photolysis)
Sensitiser: OH radicals
Rate constant: 1.32E-11 cm³/s
Method: Estimated.

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Pass

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate.

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Components:

Benthiavalicarb-isopropyl:

Partition coefficient: n-octanol/water : log Pow: 2.52 - 2.59
pH: 5 - 9

oxathiapiprolin (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 62

Ethylhexanol:

Partition coefficient: n-octanol/water : log Pow: 3.1
Method: Measured
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

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

Partition coefficient: n-octanol/water : log Pow: 2.89
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: Under actual use conditions the product has a low potential of mobility in soil.

Components:

Ethylhexanol:

Distribution among environmental compartments : Koc: 800
Method: Estimated.
Remarks: Potential for mobility in soil is low (Koc between 500 and 2000).

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

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

12.5 Results of PBT and vPvB assessment

Components:

Benthiavalicarb-isopropyl:

Assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ethylhexanol:

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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).

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

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).

12.6 Other adverse effects

Product:

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Components:

Benthiavalicarb-isopropyl:

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

Ethylhexanol:

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

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salt:

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

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SECTION 14: Transport information

14.1 UN number

ADR	:	UN 3082
RID	:	UN 3082
IMDG	:	UN 3082
IATA	:	UN 3082

14.2 UN proper shipping name

ADR	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxathiapiprolin)
RID	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxathiapiprolin)
IMDG	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Oxathiapiprolin)
IATA	:	Environmentally hazardous substance, liquid, n.o.s. (Oxathiapiprolin)

14.3 Transport hazard class(es)

ADR	:	9
RID	:	9
IMDG	:	9
IATA	:	9

14.4 Packing group

ADR	
Packing group	: III
Classification Code	: M6
Hazard Identification Number	: 90
Labels	: 9
Tunnel restriction code	: (-)
RID	
Packing group	: III
Classification Code	: M6
Hazard Identification Number	: 90
Labels	: 9
IMDG	
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F

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Remarks : Stowage category A

IATA (Cargo)

Packing instruction (cargo aircraft) : 964
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft) : 964
Packing instruction (LQ) : Y964
Packing group : III
Labels : Miscellaneous

14.5 Environmental hazards

ADR

Environmentally hazardous : no

RID

Environmentally hazardous : no

IMDG

Marine pollutant : yes

14.6 Special precautions for user

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.

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.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	: Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	: Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	: Not applicable
UK REACH List of substances subject to authorisation	: Not applicable

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(Annex XIV)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E2	ENVIRONMENTAL HAZARDS
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Seveso III Directive (2012/18/EU) implemented by Control of Major Accident Hazards Regulations 2015 (COMAH)	E2	ENVIRONMENTAL HAZARDS
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Registration Number : MAPP 20370

Other regulations:

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

The mixture is evaluated within the frame of the provisions of Regulation (EC) No. 1107/2009.
Refer to the label for exposure assessment information.

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 H-Statements

H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H351	: Suspected of causing cancer.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Carc.	: Carcinogenicity
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure
2017/164/EU	: Europe. Commission Directive 2017/164/EU establishing a fourth list of indicative occupational exposure limit values
Corteva OEL	: Corteva Occupational Exposure Limit

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GB EH40	:	UK. EH40 WEL - Workplace Exposure Limits
2017/164/EU / TWA	:	Limit Value - eight hours
Corteva OEL / TWA	:	Time weighted average
GB EH40 / TWA	:	Long-term exposure limit (8-hour TWA reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; 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

Classification of the mixture:

Skin Sens. 1	H317
Carc. 2	H351

Classification procedure:

Calculation method
Calculation method

Product code: GF-3862

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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GB / 6N