



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

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

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product name : ZORVEC VINABEL, SE

Manufacturer or supplier's details

**COMPANY IDENTIFICATION** 

Manufacturer/importer Corteva Agriscience International S.a.r.l.

> Route de Suisse 160 CH-1290 Versoix Switzerland

E-mail address SDS@corteva.com

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#### 2. HAZARDS IDENTIFICATION

**GHS Classification** 

Skin sensitisation Category 1

Short-term (acute) aquatic

hazard

Category 1

Long-term (chronic) aquatic

hazard

Category 1

**GHS-Labelling** 

Hazard pictograms





Signal word Warning

Hazard statements H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements Prevention:

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

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P280 Wear protective gloves.

P273 Avoid release to the environment.

#### Response:

P362 + P364 Take off contaminated clothing and wash it before

reuse.

P333 + P313 If skin irritation or rash occurs: Get medical ad-

vice/ attention.

P391 Collect spillage.

## Disposal:

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

SP 1 Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid

contamination via drains from farmyards and roads).

## Other hazards which do not result in classification

None known.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

#### Components

Chemical name	CAS-No.	Classification	MAC value mg/m3 / TSEL value	Concentration (% w/w)
zoxamide (ISO)	156052-68-5	Acute Tox.5; H333 Acute Tox.5; H313 Skin Sens.1; H317 Aquatic Acute1; H400 Aquatic Chronic1; H410	No data available	27,3
oxathiapiprolin (ISO)	1003318-67-	Aquatic Acute1; H400 Aquatic Chronic1; H410	No data available	3,6
White mineral oil (petroleum)	8042-47-5	Asp. Tox.1; H304	MPC-STEL: 5 mg/m3 Class 3 - Moder- ately dangerous, Substances which require special skin and eye protection Data Source: RU OEL	>= 10 - < 20





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Propanediol	57-55-6		MPC-STEL: 7 mg/m3 Class 3 - Moder- ately dangerous Data Source: RU OEL	>= 3 - < 10
Fumed silica (generic)	112945-52-5		MPC-TWA: 1 mg/m3 aerosols of pre- dominantly fibro- genic action, Class 3 - Moder- ately dangerous Data Source: RU OEL	>= 1 - < 3
			MPC-STEL: 3 mg/m3 aerosols of pre- dominantly fibro- genic action, Class 3 - Moder- ately dangerous Data Source: RU OEL	
Benzenesulfonic acid, C10- 13-alkyl derivs., calcium salt	Not Assigned	Acute Tox.5; H303 Skin Irrit.2; H315 Eye Dam.1; H318 Aquatic Acute2; H401 Aquatic Chronic3; H412	No data available	>= 1 - < 2,5
Alcohols, C12-C15, ethoxylated	68131-39-5	Acute Tox.4; H302 Acute Tox.5; H313 Skin Irrit.2; H315 Eye Dam.1; H318 Aquatic Acute1; H400 Aquatic Chronic3; H412	No data available	>= 0,3 - < 1

For explanation of abbreviations see section 16.

## 4. FIRST AID MEASURES

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

If inhaled Move to fresh air.

Artificial respiration and/or oxygen may be necessary.

Consult a physician after significant exposure.

Take off contaminated clothing and shoes immediately. In case of skin contact

Wash off immediately with soap and plenty of water.

In the case of skin irritation or allergic reactions see a physi-

Wash contaminated clothing before re-use.

If easy to do, remove contact lens, if worn. In case of eye contact

Hold eye open and rinse slowly and gently with water for 15-

20 minutes.

If eye irritation persists, consult a specialist.

of experimental intoxication are not known.

If swallowed Obtain medical attention.

DO NOT induce vomiting unless directed to do so by a physi-

No cases of human intoxication are known and the symptoms

cian or poison control center.

If victim is conscious: Rinse mouth with water.

Most important symptoms

and effects, both acute and

delayed Notes to physician Treat symptomatically.

#### 5. FIREFIGHTING MEASURES

Flammable properties

Flash point > 93.3 °C

Method: Regulation (EC) No. 440/2008, Annex, A.9

No data available Ignition temperature

Lower explosion limit / Lower :

flammability limit

No data available

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.

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-

Carbon oxides

Nitrogen oxides (NOx)

Specific extinguishing meth-

ods

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

SO

Evacuate area.

Use water spray to cool unopened containers.

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

SO.

Evacuate area.





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Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened 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.

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 firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protec- : tive 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, undwater. See

Section 12, Ecological Information.

Methods and materials for containment and cleaning up Clean up remaining materials from spill with suitable absorb-

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.

## 7. HANDLING AND STORAGE





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Advice on safe handling : 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.

Do not breathe vapours/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. Avoid inhalation of vapour or mist.

Do not swallow.

Avoid contact with skin and eyes.

Avoid contact with eyes. Keep container tightly closed.

Take care to prevent spills, waste and minimize release to the

environment.

Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage : Store in a closed container.

Containers which are opened must be carefully resealed and

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

Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
zoxamide (ISO)	156052-68-5	TWA (Total dust)	10 mg/m3	Dow IHG
		TWA (Respirable fraction.)	3 mg/m3	Dow IHG
White mineral oil (petroleum)	8042-47-5	MPC-STEL (aerosol)	5 mg/m3	RU OEL
	Further information: Class 3 - Moderately dangerous, Substances which require special skin and eye protection			
Propanediol	57-55-6	MPC-STEL (mixture of vapour and aerosol)	7 mg/m3	RU OEL
	Further information: Class 3 - Moderately dangerous			
Fumed silica (generic)	112945-52-5	MPC-TWA (Aerosol - total mass)	1 mg/m3	RU OEL
	Further information: aerosols of predominantly fibrogenic action,			





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Class 3 - Moderately dangerous			
MPC-STEL	3 mg/m3	RU OEL	
(Aerosol -			
total mass)			
Further information: aerosols of predominantly fibrogenic action,			
Class 3 - Moderately dangerous			

**Engineering measures** : Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection : Where there is potential for airborne exposures in excess of

applicable limits, wear approved respiratory protection with

dust/mist cartridge.

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 instruc-

tions/specifications provided by the glove supplier.

Eye protection : Wear safety glasses with side shields.

Additionally wear a face shield where the possibility exists for

face contact due to splashing, spraying or airborne contact

with this material.

Skin and body protection : Where there is potential for skin contact have available and

wear as appropriate impervious gloves, apron, pants, and

jacket.

Protective measures : 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 applica-

tion.

Hygiene measures : Avoid contact with skin, eyes and clothing.

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or

using the toilet.

Avoid breathing dust or vapour.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : off-white

Odour : characteristic

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Odour Threshold : not determined

pH : 6,59 (25 °C)

Concentration: 10 g/L Method: CIPAC MT 75.3

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : > 93,3 °C

Method: Regulation (EC) No. 440/2008, Annex, A.9

Evaporation rate : No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapour pressure : No data available

Relative density : 1,085 (20 °C)

Method: Regulation (EC) No. 440/2008, Annex, A.3

Density : 1,08 g/mL

Solubility(ies)

Water solubility : emulsifiable

Partition coefficient: n-

octanol/water

Not applicable

Auto-ignition temperature : No data available

Viscosity

Viscosity, dynamic : 346,69 mPa.s (20 °C)

## 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.

Conditions to avoid : None known.
Incompatible materials : Strong acids
Strong bases

Strong bases
Carbon oxides

Hazardous decomposition products

on

Nitrogen oxides (NOx)

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#### 11. TOXICOLOGICAL INFORMATION

### **Acute toxicity**

**Product:** 

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Method: OECD Test Guideline 425

Acute inhalation toxicity : LC50 (Rat): > 2,6 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

Method: OECD Test Guideline 402

**Components:** 

zoxamide (ISO):

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg

LD50 (Mouse, male and female): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5,3 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

LD50 (Rat): > 2.000 mg/kg

White mineral oil (petroleum):

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : Remarks: Mist may cause severe irritation of the upper respir-

atory tract (nose and throat) and lungs.

Vapors are unlikely due to physical properties.

Excessive exposure to mineral oil mist may cause lung injury

(lipoid pneumonia).

Excessive exposure may cause:

Incoordination.

LC50 (Rat, male and female): > 5 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

Method: OECD Test Guideline 402

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Symptoms: No deaths occurred at this concentration.

Assessment: The substance or mixture has no acute dermal

toxicity

Propanediol:

Acute oral toxicity : LD50 (Rat): > 20.000 mg/kg

Acute inhalation toxicity : LC50 (Rabbit): 317,042 mg/l

Exposure time: 2 h

Test atmosphere: dust/mist

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

tion toxicity

Remarks: Mist may cause irritation of upper respiratory tract

(nose and throat).

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

oxathiapiprolin (ISO):

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

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

icity

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 inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg

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

Fumed silica (generic):

Acute oral toxicity : LD50 (Rat): > 10.000 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Alcohols, C12-C15, ethoxylated:

Acute oral toxicity : LD50 (Rat): > 1.000 mg/kg

Method: Estimated.

Acute inhalation toxicity : LC50 (Rat): 1,6 mg/l

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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: For similar material(s):

Remarks: Brief exposure (minutes) is not likely to cause ad-

verse effects.

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

Skin corrosion/irritation

**Product:** 

Species : Rabbit Exposure time : 72 h

Result : No skin irritation

**Components:** 

Propanediol:

Species : Rabbit

Result : No skin irritation

oxathiapiprolin (ISO):

Species : Rabbit

Result : No skin irritation

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

Species : Rabbit Result : Skin irritation

Alcohols, C12-C15, ethoxylated:

Result : Skin irritation

Serious eye damage/eye irritation

Product:

Species : Rabbit

Result : No eye irritation

Exposure time : 72 h

Method : OECD Test Guideline 492

**Components:** 

**Propanediol:** 

Species : Rabbit

Result : No eye irritation



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oxathiapiprolin (ISO):

Species : Rabbit

Result : No eye irritation

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

Species : Rabbit Result : Corrosive

Alcohols, C12-C15, ethoxylated:

Result : Corrosive

Respiratory or skin sensitisation

**Product:** 

Test Type : Local lymph node assay

Species : Mouse

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

Method : OECD Test Guideline 429

**Components:** 

zoxamide (ISO):

Species : Guinea pig

Result : May cause sensitisation by skin contact.

White mineral oil (petroleum):

Remarks : Did not cause allergic skin reactions when tested in guinea

pigs.

Remarks : For respiratory sensitization:

No relevant data found.

**Propanediol:** 

Species : human

Assessment : Does not cause skin sensitisation.

oxathiapiprolin (ISO):

Test Type : Maximisation Test

Species : Guinea pig

Assessment : Does not cause skin sensitisation.

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

Species : Guinea pig

Assessment : Does not cause skin sensitisation.

Alcohols, C12-C15, ethoxylated:

Remarks : Did not cause allergic skin reactions when tested in guinea

oigs.





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For respiratory sensitization: Remarks

No relevant data found.

Germ cell mutagenicity

**Components:** 

zoxamide (ISO):

Germ cell mutagenicity -

In vitro genetic toxicity studies were negative., Animal genetic

Assessment toxicity studies were negative.

White mineral oil (petroleum):

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

Assessment

**Propanediol:** 

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

Assessment toxicity studies were negative.

oxathiapiprolin (ISO):

Germ cell mutagenicity -Animal genetic toxicity studies were negative.

Assessment

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

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

Assessment toxicity studies were negative.

Fumed silica (generic):

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

Assessment toxicity studies were negative.

Carcinogenicity

**Components:** 

zoxamide (ISO):

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

White mineral oil (petroleum):

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

ment

**Propanediol:** 

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

ment

oxathiapiprolin (ISO):

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

ment





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Reproductive toxicity

**Components:** 

zoxamide (ISO):

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.

White mineral oil (petroleum):

Reproductive toxicity - As-

sessment

In animal studies, did not interfere with reproduction. Did not cause birth defects in laboratory animals.

Propanediol:

Reproductive toxicity - As-

sessment

In animal studies, did not interfere with reproduction., In ani-

mal studies, did not interfere with fertility.

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

tory animals.

oxathiapiprolin (ISO):

Reproductive toxicity - As-

sessment

In animal studies, did not interfere with reproduction.

Animal testing did not show any effects on foetal develop-

ment.

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

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.

STOT - single exposure

**Product:** 

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

an STOT-SE toxicant.

**Components:** 

White mineral oil (petroleum):

Assessment : Available data are inadequate to determine single exposure

specific target organ toxicity.

Propanediol:

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.

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Fumed silica (generic):

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

an STOT-SE toxicant.

Alcohols, C12-C15, ethoxylated:

Assessment : Available data are inadequate to determine single exposure

specific target organ toxicity.

STOT - repeated exposure

**Product:** 

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

an STOT-RE toxicant.

**Components:** 

oxathiapiprolin (ISO):

Assessment : The substance or mixture is not classified as specific target

organ toxicant, repeated exposure.

Repeated dose toxicity

**Components:** 

zoxamide (ISO):

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

gans: Liver. Thyroid.

White mineral oil (petroleum):

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

pated to cause additional significant adverse effects.

Propanediol:

Remarks : In rare cases, repeated excessive exposure to propylene gly-

col may cause central nervous system effects.

oxathiapiprolin (ISO):

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

pected to cause significant adverse effects except at very high aerosol concentrations. Repeated excessive aerosol exposures may cause respiratory tract irritation and even death.

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

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

pated to cause significant adverse effects.

Fumed silica (generic):





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Remarks : No relevant data found.

## Alcohols, C12-C15, ethoxylated:

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

pated to cause additional significant adverse effects.

#### **Aspiration toxicity**

#### **Product:**

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

#### **Components:**

#### zoxamide (ISO):

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

#### White mineral oil (petroleum):

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

#### **Propanediol:**

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

#### oxathiapiprolin (ISO):

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

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

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

#### Fumed silica (generic):

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

#### Alcohols, C12-C15, ethoxylated:

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

#### 12. ECOLOGICAL INFORMATION

#### **Ecotoxicity**

### **Product:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,66 mg/l

Exposure time: 96 h Test Type: static test

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 14 mg/l

End point: Immobilization





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Exposure time: 48 h

Test Type: Static renewal test Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 0,234

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to terrestrial organ-

isms

LD50 (Apis mellifera (bees)): > 1019

Exposure time: 48 d

End point: Acute oral toxicity Method: OECD Test Guideline 213

### **Components:**

### zoxamide (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,16 mg/l

Exposure time: 96 h

Test Type: flow-through test

Method: OECD Test Guideline 203 or Equivalent

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 0,855

mg/l

Exposure time: 96 h

Test Type: flow-through test

Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 0,78 mg/l

Exposure time: 48 h

Test Type: flow-through test

Method: OECD Test Guideline 202 or Equivalent

Toxicity to algae/aquatic

plants

ErC50 (alga Scenedesmus sp.): 0,018 mg/l

End point: Growth rate inhibition

Exposure time: 96 h Test Type: static test

Method: OECD Test Guideline 201 or Equivalent

Toxicity to fish (Chronic tox-

icity)

NOEC (Oncorhynchus mykiss (rainbow trout)): 0,00348 mg/l

End point: survival Exposure time: 61 d

Test Type: flow-through test

LOEC (Oncorhynchus mykiss (rainbow trout)): 0,00687 mg/l

End point: survival Exposure time: 61 d

Test Type: flow-through test

MATC (Maximum Acceptable Toxicant Level) (Oncorhynchus

mykiss (rainbow trout)): 0,00489 mg/l

End point: survival Exposure time: 61 d

Test Type: flow-through test





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Toxicity to soil dwelling or-

ganisms

LC50 (Eisenia fetida (earthworms)): > 1.070 mg/kg

Exposure time: 14 d

End point: Biomass

NOEC mortality (Eisenia fetida (earthworms)):

Exposure time: 28 d End point: survival

Toxicity to terrestrial organ-

isms

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

mg/kg bodyweight.

Exposure time: 14 d

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5250

mg/kg diet.

Exposure time: 8 d

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

Exposure time: 48 d

White mineral oil (petroleum):

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 10.000 mg/l

Exposure time: 96 h Test Type: static test

LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l

Exposure time: 96 h Test Type: static test

Method: OECD Test Guideline 203

LL50 (Leuciscus idus (Golden orfe)): > 10.000 mg/l

Exposure time: 96 h Test Type: static test

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

LL50 (Daphnia magna (Water flea)): > 100 mg/l

Exposure time: 48 h Test Type: static test

Method: OECD Test Guideline 202

**Ecotoxicology Assessment** 

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

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

**Propanediol:** 

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40.613 mg/l

Exposure time: 96 h Test Type: static test

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Ceriodaphnia dubia (water flea)): 18.340 mg/l

Exposure time: 48 h Test Type: static test





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Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)):

19.000 mg/l

End point: Growth rate inhibition

Exposure time: 96 h

Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chron-

ic toxicity)

NOEC (Ceriodaphnia dubia (water flea)): 13.020 mg/l

End point: number of offspring

Exposure time: 7 d

Test Type: semi-static test

Toxicity to microorganisms : NOEC (Pseudomonas putida): > 20.000 mg/l

Exposure time: 18 h

oxathiapiprolin (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0,69 mg/l

Exposure time: 96 h Test Type: Static

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

1

Exposure time: 96 h

M-Factor (Acute aquatic tox-

icity)

Toxicity to fish (Chronic tox-

icity)

NOEC (Oncorhynchus mykiss (rainbow trout)): 0,46 mg/l

Exposure time: 88 d

NOEC (Cyprinodon variegatus (sheepshead minnow)): 0,34

mg/l

Exposure time: 35 d

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

NOEC (Daphnia magna (Water flea)): 0,75 mg/l

Exposure time: 21 d





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ic toxicity) Test Type: semi-static test

NOEC (Americamysis bahia (mysid shrimp)): 0,058 mg/l

Exposure time: 32 d

Test Type: flow-through test

M-Factor (Chronic aquatic

toxicity)

Toxicity to terrestrial organ-

isms

LD50 (Colinus virginianus (Bobwhite quail)): > 2.250 mg/kg

Method: OPPTS 850.2100

LD50 (Poephila guttata (zebra finch)): > 2.250 mg/kg

Method: OPPTS 850.2100

dietary LC50 (Colinus virginianus (Bobwhite quail)): > 5.620

mg/kg

Exposure time: 5 d

Method: OECD Test Guideline 205

dietary LC50 (Anas platyrhynchos (Mallard duck)): > 5.620

mg/kg

Exposure time: 5 d

Method: OECD Test Guideline 205

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

LC50 (Fish): > 1 - 10 mg/l Toxicity to fish

> 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 fish (Chronic tox-

icity)

NOEC (Fish): 0,23 mg/l Exposure time: 72 d

Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 1,18 mg/l

Exposure time: 21 d

Test Type: flow-through test

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

Exposure time: 3 h

Fumed silica (generic):

Toxicity to fish LC50 (Danio rerio (zebra fish)): > 100 mg/l

Exposure time: 96 h

Method: Method Not Specified. Remarks: For similar material(s):





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Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 100 mg/l

Exposure time: 48 h

Method: Method Not Specified. Remarks: For similar material(s):

Alcohols, C12-C15, ethoxylated:

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0,14 mg/l

Exposure time: 48 h Test Type: Static

Toxicity to algae/aquatic

plants

ErC50 (Selenastrum capricornutum (green algae)): 0,75 mg/l

Exposure time: 72 h

Remarks: For similar material(s):

(Pseudokirchneriella subcapitata (microalgae)): 0,07 mg/l

End point: Not available Exposure time: 96 h

Method: Method Not Specified.

M-Factor (Acute aquatic tox-

icity)

Toxicity to fish (Chronic tox-

icity)

NOEC (Pimephales promelas (fathead minnow)): 0,28 mg/l

Exposure time: 30 d

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 0,77 mg/l

Exposure time: 21 d

Persistence and degradability

**Product:** 

Biodegradability : Remarks: Not readily biodegradable.

Estimation based on data obtained on active ingredient.

**Components:** 

zoxamide (ISO):

Biodegradability : Result: Not biodegradable

Biodegradation: 8 % Exposure time: 29 d

Method: OECD Test Guideline 301B or Equivalent

Remarks: 10-day Window: Fail

Stability in water : Test Type: Hydrolysis

Degradation half life (half-life): 15 d pH: 4 - 7

Method: Measured

Test Type: Hydrolysis

Degradation half life (half-life): 8 d pH: 9

Method: Measured

Test Type: Photolysis

Degradation half life (half-life): 7,8 d

Method: Measured





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

Sensitiser: OH radicals

Concentration: 1.500.000 1/cm3 Rate constant: 1,1E-11 cm3/s

White mineral oil (petroleum):

Biodegradability : Result: Not biodegradable

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

not biodegradable under environmental conditions.

Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

aerobic

Concentration: 20 mg/l Biodegradation: 0 - 24 % Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Remarks: 10-day Window: Fail

ThOD : 3,50 kg/kg

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

Sensitiser: OH radicals

Rate constant: 8,28E-12 cm3/s

Method: Estimated.

**Propanediol:** 

Biodegradability : aerobic

Result: Readily biodegradable.

Biodegradation: 81 % Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

Remarks: 10-day Window: Pass

Biodegradation: 96 % Exposure time: 64 d

Method: OECD Test Guideline 306 or Equivalent

Remarks: 10-day Window: Not applicable

Biochemical Oxygen De-

mand (BOD)

69.000 %

Incubation time: 5 d

70.000 %

Incubation time: 10 d

86.000 %

Incubation time: 20 d

Chemical Oxygen Demand

(COD)

1,53 kg/kg

ThOD : 1,68 kg/kg





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Photodegradation : Rate constant: 1,28E-11 cm3/s

Method: Estimated.

oxathiapiprolin (ISO):

Biodegradability : Result: Not readily biodegradable.

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

Fumed silica (generic):

Biodegradability : Remarks: Biodegradation is not applicable.

Alcohols, C12-C15, ethoxylated:

Biodegradability : Result: Readily biodegradable.

Remarks: Material is readily biodegradable. Passes OECD

test(s) for ready biodegradability.

aerobic

Inoculum: activated sludge, domestic, non-adapted

Concentration: 20 mg/l Biodegradation: 61 % Exposure time: 28 d

Method: OECD Test Guideline 301B or Equivalent

Remarks: 10-day Window: Fail

Bioaccumulative potential

**Product:** 

Bioaccumulation : Remarks: Does not bioaccumulate.

Estimation based on data obtained on active ingredient.

**Components:** 

zoxamide (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 420

Method: Estimated.

Partition coefficient: n-

octanol/water

log Pow: 3,76

Method: Estimated.

Remarks: Bioconcentration potential is moderate (BCF be-

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

White mineral oil (petroleum):

Bioaccumulation : Species: Fish

Bioconcentration factor (BCF): 1.900

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**Propanediol:** 

Bioaccumulation : Bioconcentration factor (BCF): 0,09

Method: Estimated.

Partition coefficient: n-

octanol/water

: log Pow: -1,07 Method: Measured

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

Pow < 3).

oxathiapiprolin (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 62

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

Bioaccumulation : Bioconcentration factor (BCF): 2 - 1.000

Partition coefficient: n- : log Pow: 2,89

octanol/water Remarks: Bioconcentration potential is moderate (BCF be-

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

Fumed silica (generic):

Partition coefficient: n-

Remarks: No relevant data found.

octanol/water

Alcohols, C12-C15, ethoxylated:

Bioaccumulation : Bioconcentration factor (BCF): 81,07

Method: Calculated.

Partition coefficient: n-

octanol/water

log Pow: 3,4

Method: estimated

Mobility in soil

**Product:** 

Distribution among environ-

mental compartments

Remarks: Under actual use conditions the product has a low

potential of mobility in soil.

Components:

zoxamide (ISO):

Distribution among environ-

mental compartments

Koc: 2600

Method: Estimated.

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

2000 and 5000).

**Propanediol:** 

Distribution among environ-

mental compartments

Koc: < 1

Method: Estimated.

Remarks: Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be

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an important fate process.

Potential for mobility in soil is very high (Koc between 0 and

50).

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

Distribution among environ-

: Remarks: No relevant data found.

mental compartments

Fumed silica (generic):

Distribution among environ- : Remarks: Expected to be relatively immobile in soil (Koc >

mental compartments 5000).

Alcohols, C12-C15, ethoxylated:

Distribution among environ-

mental compartments

Remarks: No relevant data found.

Other adverse effects

**Components:** 

zoxamide (ISO):

Results of PBT and vPvB

assessment

This substance has not been assessed for persistence, bioac-

cumulation and toxicity (PBT).

Ozone-Depletion Potential : Regulation: (Update: sb 12/2/10)

Remarks: This substance is not on the Montreal Protocol list

of substances that deplete the ozone layer.

White mineral oil (petroleum):

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.

**Propanediol:** 

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.

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

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.





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Fumed silica (generic):

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.

Alcohols, C12-C15, ethoxylated:

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.

#### 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.

### 14. TRANSPORT INFORMATION

ADR

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Oxathiapiprolin, Zoxamide (ISO))

Class : 9
Packing group : III
Labels : 9
Hazard Identification Number : 90
Tunnel restriction code : (-)

**UNRTDG** 

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Oxathiapiprolin, Zoxamide (ISO))

Class : 9
Packing group : III
Labels : 9





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**IATA-DGR** 

UN/ID No. : UN 3082

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

(Oxathiapiprolin, Zoxamide (ISO))

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo : 964

aircraft)

Packing instruction (passen: 964

ger aircraft)

**IMDG-Code** 

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Oxathiapiprolin, Zoxamide (ISO))

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F

Marine pollutant : yes

Remarks : Stowage category A

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

Not applicable for product as supplied.

#### **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.

#### 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.

#### 15. REGULATORY INFORMATION

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

#### 16. OTHER INFORMATION

#### **Full text of H-Statements**

H302 Harmful if swallowed.

H303 May be harmful if swallowed.

H304 May be fatal if swallowed and enters airways.



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H313 H315	May be harmful in contact with skin. Causes skin irritation.				
H317	M	May cause an allergic skin reaction.			
H318	(	Causes serious eye damage.			
H333	N	May be harmful if inhaled.			
H400	\	Very toxic to aquatic life.			
H401	٦	Toxic to aquatic life.			
H410	\	Very toxic to aquatic life with long lasting effects.			
H412	ŀ	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

Asp. Tox. : Aspiration hazard Eye Dam. : Serious eye damage

Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation

Dow IHG : Dow Industrial Hygiene Guideline

RU OEL : SanPiN 1.2.3685-21 Table 2.1, Table 2.8, Table 2.16 & Table

2.17 Maximum permissible concentrations (MPC) in the air of

the working area

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

RU OEL / MPC-STEL : Maximum Permissible Concentration - Short Term Exposure RU OEL / MPC-TWA : Maximum Permissible Concentration - Time Weighted Aver-

age

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; 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; 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; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory: TSCA - Toxic Substances Control Act (United States): UN - United Nations:





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UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Product code: GF-3860

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.

**GE / 6N**