SAFETY DATA SHEET

According to Commission Regulation (EU) 2020/878 of amending Regulation (EC) No 1907/2006

BORDER™ 100 SC

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	29.09.2022	50001298	Date of first issue: 17.11.2021

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

1.1 Product identifier

Product name BORDER™ 100 SC

Other means of identification

Product code 50001298

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

Use of the Substance/Mixture Herbicide

Recommended restrictions on use Use as recommended by the label.

1.3 Details of the supplier of the safety data sheet

Supplier Address

FMC Agricultural Solutions A/S
Thyborønvej 78
DK-7673 Harboøre
Denmark

Telephone: +45 9690 9690
Telefax: +45 9690 9691
E-mail address: SDS-Info@fmc.com (E-Mail General Information)

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:
Denmark: 45-69918573 (CHEMTREC)

Medical emergency:
Denmark: +45 82 12 12 12

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Corrosive to metals, Category 1	H290: May be corrosive to metals.
Skin sensitisation, Sub-category 1B	H317: May cause an allergic skin reaction.

Serious eye damage, Category 1	H318: Causes serious eye damage.
Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :
H290 May be corrosive to metals.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P260 Do not breathe mist or vapours.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water and soap.
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.
P390 Absorb spillage to prevent material damage.

Disposal:

P501 Dispose of contents/container in accordance with local regulation.

Hazardous components which must be listed on the label:

Alcohols, C9-11-iso-, C10-rich, ethoxylated

mesotrione (ISO)
calcium dodecylbenzenesulphonate

Additional Labelling

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

For special phrases (SP) and safety intervals, consult the label.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: 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.

Toxicological information: 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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Alcohols, C9-11-iso-, C10-rich, ethoxylated	78330-20-8	Eye Dam. 1; H318	>= 3 - < 10
mesotrione (ISO)	104206-82-8 609-064-00-X	Repr. 2; H361d STOT RE 2; H373 (Nervous system, Eyes) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	>= 3 - < 11
octan-1-ol	111-87-5 203-917-6	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	>= 2,5 - < 10
12-Hydroxystearic acid, oligo-	58128-22-6	Skin Irrit. 2; H315	>= 1 - < 10

mers, reaction products with stearic acid	500-140-7	Eye Irrit. 2; H319	
calcium dodecylbenzenesulphonate	26264-06-2 247-557-8	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 --- Acute toxicity estimate Acute oral toxicity: 1.300 mg/kg	>= 1 - < 2,5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
Consult a physician.
Keep warm and in a quiet place.

If inhaled : Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact : If on clothes, remove clothes.
If on skin, rinse well with water.
Wash off with soap and water.
Get medical attention if irritation develops and persists.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Do NOT induce vomiting.
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Risks : May cause an allergic skin reaction.
Causes serious eye damage.

Suspected of damaging the unborn child.
May cause damage to organs through prolonged or repeated exposure.

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 : Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Thermal decomposition can lead to release of irritating gases and vapours.
Carbon oxides
Nitrogen oxides (NOx)
Sulphur oxides

5.3 Advice for firefighters

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

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Absorb spillage to prevent material damage.
Neutralize with chalk, alkali solution or ammonia.
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.
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.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : When using do not eat or drink. When using do not smoke.
Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage : Do not store near acids.

Recommended storage temperature : <= 40 °C

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

Specific use(s) : Registered pesticide to be used in accordance with a label approved by country-specific regulatory authorities.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
propane-1,2-diol	Workers	Inhalation	Long-term systemic effects	168 mg/m3
	Workers	Inhalation	Long-term local effects	10 mg/m3
	Consumers	Inhalation	Long-term systemic effects	50 mg/m3
	Consumers	Inhalation	Long-term local effects	10 mg/m3

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Sorbitan monolaurate, ethoxylated	Fresh water	0,2 mg/l
	Marine water	0,02 mg/l
	Fresh water sediment	1,141 mg/kg dry weight (d.w.)
	Marine sediment	1000 mg/kg dry weight (d.w.)
	Intermittent use (freshwater)	0,239 mg/l
octan-1-ol	Fresh water	200 µg/l
	Marine water	20 µg/l
	Sewage treatment plant	55,5 mg/l
	Fresh water sediment	2,1 mg/kg dry weight (d.w.)
	Marine sediment	0,210 mg/kg dry weight (d.w.)
	Soil	1,6 mg/kg dry weight (d.w.)
propane-1,2-diol	Fresh water	260 mg/l
	Intermittent use/release	183 mg/l
	Marine water	26 mg/l
	Sewage treatment plant	20 g/l
	Fresh water sediment	572 mg/kg
	Marine sediment	57,2 mg/kg
	Soil	50 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Hand protection Material	:	Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	:	In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Protective measures	:	Plan first aid action before beginning work with this product. In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	yellowish-brown
Odour	:	Faint odour
Odour Threshold	:	not determined
Melting point/freezing point	:	not determined
Initial boiling point and boiling range	:	ca. 101 °C
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Flash point	:	not determined, boils before flash
Auto-ignition temperature	:	No data available

Decomposition temperature	:	not determined
pH	:	3,0
Viscosity		
Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	not determined
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	not determined
Relative density	:	1,082 (20 °C)
Relative vapour density	:	not determined
Particle characteristics		
Particle size	:	No data available
Particle Size Distribution	:	No data available
Shape	:	No data available

9.2 Other information

Explosives	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Self-ignition	:	> 400 °C
Metal corrosion rate	:	> 6,25 mm/a Corrosive to metals
Evaporation rate	:	not determined
Miscibility with water	:	dispersible

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Avoid strong acids, bases, and oxidizers
Metals

10.6 Hazardous decomposition products

Stable under recommended storage conditions.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : LD50 Oral (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 425
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 3,67 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes
Remarks: No significant adverse effects were reported

Acute dermal toxicity : LD50 Dermal (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Acute oral toxicity : LD50 (Rat): 2.030 mg/kg

mesotrione (ISO):

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : 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 inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

octan-1-ol:

Acute oral toxicity : LD50 Oral (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 2,05 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: US EPA Test Guideline OPPTS 870.1300
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

12-Hydroxystearic acid, oligomers, reaction products with stearic acid:

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

calcium dodecylbenzenesulphonate:

Acute oral toxicity : LD50 (Rat, male and female): 1.300 mg/kg
Remarks: Based on data from similar materials

Acute toxicity estimate: 1.300 mg/kg
Method: Calculation method

Acute inhalation toxicity : Remarks: Not classified

Acute dermal toxicity : LD50 (Rat, male and female): > 2000 milligram per kilogram
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

Skin corrosion/irritation

Not classified based on available information.

Product:

Assessment : Not classified as irritant

Method : OECD Test Guideline 404
Result : slight irritation
GLP : yes

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Species : Rabbit
Result : No skin irritation

mesotrione (ISO):

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

octan-1-ol:

Species : Rabbit
Method : OECD Test Guideline 404
Result : slight irritation

12-Hydroxystearic acid, oligomers, reaction products with stearic acid:

Species : Rabbit
Result : Skin irritation

calcium dodecylbenzenesulphonate:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Assessment : Risk of serious damage to eyes.
Method : OECD Test Guideline 405
Result : Risk of serious damage to eyes.
GLP : yes

Remarks : May cause irreversible eye damage.

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Species : Rabbit
Method : Draize Test
Result : Irreversible effects on the eye

mesotrione (ISO):

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation
Remarks	:	Minimal effects that do not meet the threshold for classification.

octan-1-ol:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irritation to eyes, reversing within 21 days

12-Hydroxystearic acid, oligomers, reaction products with stearic acid:

Species	:	Rabbit
Method	:	Draize Test
Result	:	Mild eye irritation

calcium dodecylbenzenesulphonate:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye
Remarks	:	Based on data from similar materials

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Method	:	OECD Test Guideline 429
Result	:	The product is a skin sensitiser, sub-category 1B.
GLP	:	yes
Remarks	:	Causes sensitisation.

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Result	:	Does not cause skin sensitisation.

mesotrione (ISO):

Species	:	Guinea pig
Method	:	OECD Test Guideline 406

Result : Does not cause skin sensitisation.

octan-1-ol:

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.
Remarks : Based on data from similar materials

12-Hydroxystearic acid, oligomers, reaction products with stearic acid:

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

calcium dodecylbenzenesulphonate:

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Not a skin sensitizer.
Remarks : Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative
Remarks: Based on data from similar materials

Germ cell mutagenicity- Assessment : In vivo tests did not show mutagenic effects

octan-1-ol:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Test Type: reverse mutation assay
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity- As- : Weight of evidence does not support classification as a germ

sessment		cell mutagen.

calcium dodecylbenzenesulphonate:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: chromosome aberration assay Species: Rat (male and female) Application Route: Oral Exposure time: 90 d Result: negative Remarks: Based on data from similar materials
Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Not classified based on available information.

Components:

mesotrione (ISO):

Species	:	Rat
Method	:	OECD Test Guideline 453
Result	:	negative
Remarks	:	No significant adverse effects were reported
Species	:	Mouse
Method	:	OECD Test Guideline 453
Result	:	negative
Remarks	:	No significant adverse effects were reported
Carcinogenicity - Assessment	:	Animal testing did not show any carcinogenic effects.

calcium dodecylbenzenesulphonate:

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	720 d
NOAEL	:	250 mg/kg body weight
Result	:	negative
Remarks	:	Based on data from similar materials
Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

Reproductive toxicity

Suspected of damaging the unborn child.

Product:

Reproductive toxicity - Assessment : Suspected of damaging the unborn child.
Remarks: The active ingredient is suspected of harming the unborn child.

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Effects on fertility : Species: Rat
Application Route: Dermal
General Toxicity - Parent: NOEL: 250 mg/kg body weight
General Toxicity F1: NOEL: 250 mg/kg body weight

Effects on foetal development : Species: Rat
Application Route: Dermal
General Toxicity Maternal: NOEL: 250 mg/kg body weight
Teratogenicity: NOEL: 250 mg/kg body weight

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

mesotrione (ISO):

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments., Suspected of damaging the unborn child.

octan-1-ol:

Effects on fertility : Test Type: one-generation reproductive toxicity
Species: Rat, male and female
Application Route: Oral
Dose: 10, 100, 1000 mg/kg bw/day
General Toxicity - Parent: NOAEL: 1.000 mg/kg bw/day
General Toxicity F1: NOAEL: 1.000 mg/kg bw/day
Result: negative

Effects on foetal development : Species: Rat
Application Route: Oral
Dose: 0,130,650,975,1300 mg/kg bw/day
Duration of Single Treatment: 20 d
General Toxicity Maternal: LOAEL: 650 mg/kg bw/day
Embryo-foetal toxicity: NOAEL: 1.300 mg/kg bw/day
Symptoms: Maternal effects
Method: OECD Test Guideline 414

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

calcium dodecylbenzenesulphonate:

Effects on fertility : Test Type: Fertility/early embryonic development
Species: Rat, male and female

Application Route: Ingestion
General Toxicity - Parent: NOAEL: 400 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Ingestion
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Developmental Toxicity: NOAEL: 600 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT - single exposure

Not classified based on available information.

Product:

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

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

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

mesotrione (ISO):

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

Remarks : No significant adverse effects were reported

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Product:

Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

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

mesotrione (ISO):

Target Organs : Eyes, Nervous system

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

octan-1-ol:

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

Repeated dose toxicity

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Species : Rat
NOAEL : 80 mg/kg
Application Route : Dermal
Exposure time : 90 d

Species : Rat
NOAEL : 150 mg/kg
Application Route : Oral
Exposure time : 90 d

octan-1-ol:

Species : Rat, male
NOAEL : 1127 mg/kg bw/day
Application Route : Oral
Exposure time : 13 Weeks
Dose : 182, 374, 1127 mg/kg bw/day

Species : Rat, female
NOAEL : 1243 mg/kg bw/day
Application Route : Oral
Exposure time : 13 Weeks
Dose : 216, 427, 1243 mg/kg bw/day

calcium dodecylbenzenesulphonate:

Species : Rat, male and female
NOAEL : 85 mg/kg
LOAEL : 145 mg/kg
Application Route : Oral
Exposure time : 9 Months
Remarks : Based on data from similar materials

Species : Rat, male and female
NOAEL : 100 mg/kg
LOAEL : 200 mg/kg
Application Route : Oral
Exposure time : 28 Days
Method : OECD Test Guideline 422
Remarks : Based on data from similar materials

Species	:	Rat, male
LOAEL	:	286 mg/kg
Application Route	:	Skin contact
Exposure time	:	15 Days
Remarks	:	Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

Components:

mesotrione (ISO):

The substance does not have properties associated with aspiration hazard potential.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment	:	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.

Further information

Product:

Remarks	:	No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 129,3 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 180 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 114 mg/l Exposure time: 72 h EC50 (Lemna gibba (duckweed)): 0,278 mg/l Exposure time: 7 d NOEC (Lemna gibba (duckweed)): 0,016 mg/l

Exposure time: 7 d

Toxicity to soil dwelling organisms : NOEC: 21 mg/kg
Exposure time: 56 d
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : LD50: 87 µg/bee
Exposure time: 48 h
End point: Acute contact toxicity
Species: Apis mellifera (bees)

LD50: 85 µg/bee
Exposure time: 48 h
End point: Acute oral toxicity
Species: Apis mellifera (bees)

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 8,5 mg/l
Exposure time: 96 h

mesotrione (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 900 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EbC50 (green algae): 4,5 mg/l
Exposure time: 72 h

EC50 (Pseudokirchneriella subcapitata (green algae)): 3,5 mg/l
Exposure time: 120 h

EC10 (Lemna gibba (gibbous duckweed)): 0,0014 mg/l
Exposure time: 14 d

EC50 (Lemna gibba (gibbous duckweed)): 0,0077 mg/l
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC: 12,5 mg/l
Exposure time: 28 d
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 180 mg/l
Exposure time: 22 d
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity)	:	10
Toxicity to soil dwelling organisms	:	LC50: > 2.000 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	:	LD50: > 2.000 mg/kg Species: Colinus virginianus (Bobwhite quail) LD50: > 11 µg/bee End point: Acute oral toxicity Species: Apis mellifera (bees) LD50: > 100 µg/bee End point: Acute contact toxicity Species: Apis mellifera (bees)

Ecotoxicology Assessment

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

octan-1-ol:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 13,3 mg/l Exposure time: 96 h Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 20 mg/l Exposure time: 24 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC10 (Desmodesmus subspicatus (green algae)): 4,2 mg/l Exposure time: 48 h Test Type: static test EC50 (Desmodesmus subspicatus (green algae)): 6,5 mg/l Exposure time: 48 h Test Type: static test
Toxicity to microorganisms	:	(Protozoa): 44 mg/l Exposure time: 72 h Test Type: Cell multiplication inhibition test Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 1 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

12-Hydroxystearic acid, oligomers, reaction products with stearic acid:

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Crustaceans): 1.614 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (marine diatom)): > 10.000 mg/l Exposure time: 72 h

calcium dodecylbenzenesulphonate:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 10 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials LC50 (Pimephales promelas (fathead minnow)): 4,6 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 3,5 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	NOEC (Pseudokirchneriella subcapitata (green algae)): 7,9 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials EC50 (Pseudokirchneriella subcapitata (green algae)): 65,4 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	EC50 (activated sludge): 500 mg/l Exposure time: 3 h Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 1,65 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Remarks: Based on data from similar materials NOEC: 1,18 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Remarks: Based on data from similar materials
Toxicity to soil dwelling organisms	:	LC50: 1.000 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207

Toxicity to terrestrial organisms	:	LD50: 1.356 mg/kg Exposure time: 14 d Species: Colinus virginianus (Bobwhite quail) Method: OECD Test Guideline 223

12.2 Persistence and degradability

Product:

Biodegradability	:	Remarks: Not readily biodegradable. Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:

Alcohols, C9-11-iso-, C10-rich, ethoxylated:

Biodegradability	:	Result: Readily biodegradable.

mesotrione (ISO):

Biodegradability	:	Remarks: Not readily biodegradable.

octan-1-ol:

Biodegradability	:	Inoculum: activated sludge Result: Readily biodegradable. Biodegradation: 82,2 % Exposure time: 28 d Method: OECD Test Guideline 301B

12-Hydroxystearic acid, oligomers, reaction products with stearic acid:

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 57 % Exposure time: 28 d Method: OECD Test Guideline 301C

calcium dodecylbenzenesulphonate:

Biodegradability	:	Result: Readily biodegradable. Method: OECD Test Guideline 301E

12.3 Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: Bioaccumulation is unlikely. Information refers to the main component.

Components:

mesotrione (ISO):

Bioaccumulation	:	Remarks: Bioaccumulation is unlikely.
Partition coefficient: n-octanol/water	:	log Pow: 0,11 (20 °C) Remarks: unbuffered water log Pow: 0,9 (20 °C) pH: 5 log Pow: -1 (20 °C) pH: 7

octan-1-ol:

Partition coefficient: n-octanol/water	:	log Pow: 3,5 (23 °C) pH: 5,7

calcium dodecylbenzenesulphonate:

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): 70,79 Method: QSAR
Partition coefficient: n-octanol/water	:	log Pow: 4,77 (25 °C)

12.4 Mobility in soil

Product:

Distribution among environmental compartments	:	Remarks: Under normal conditions the active ingredient is moderately mobile to mobile in soil.

Components:

mesotrione (ISO):

Distribution among environmental compartments	:	Koc: 122 ml/g, log Koc: 2,08 Remarks: Mobile in soils

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment	:	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.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of as hazardous waste in compliance with local and national regulations.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Do not re-use empty containers.
Packaging that is not properly emptied must be disposed of as the unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3265

ADR : UN 3265

RID : UN 3265

IMDG : UN 3265

IATA : UN 3265

14.2 UN proper shipping name

ADN : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Mesotrione)

ADR : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Mesotrione)

RID : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Mesotrione)

IMDG : CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

(Mesotrione)

IATA : Corrosive liquid, acidic, organic, n.o.s. (Mesotrione)

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADN	:	8	
ADR	:	8	
RID	:	8	
IMDG	:	8	
IATA	:	8	

14.4 Packing group

ADN

Packing group	:	III
Classification Code	:	C3
Hazard Identification Number	:	80
Labels	:	8

ADR

Packing group	:	III
Classification Code	:	C3
Hazard Identification Number	:	80
Labels	:	8
Tunnel restriction code	:	(E)

RID

Packing group	:	III
Classification Code	:	C3
Hazard Identification Number	:	80
Labels	:	8

IMDG

Packing group	:	III
Labels	:	8
EmS Code	:	F-A, S-B

IATA (Cargo)

Packing instruction (cargo aircraft)	:	856
Packing instruction (LQ)	:	Y841
Packing group	:	III
Labels	:	Corrosive

IATA (Passenger)

Packing instruction (passenger aircraft)	:	852
Packing instruction (LQ)	:	Y841
Packing group	:	III
Labels	:	Corrosive

14.5 Environmental hazards

ADN
Environmentally hazardous : yes

ADR
Environmentally hazardous : yes

RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

14.6 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.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3
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
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E1	ENVIRONMENTAL HAZARDS

Other regulations:

When evaluating a workplace, measures must be taken to ensure that employees are not exposed to conditions that may pose a risk during pregnancy or breastfeeding (cf. The Danish Working Environment Authority's Executive Order on The Performance of Work)

Young people under the age of 18 are not allowed to use or be exposed to the product professionally. Young people above the age of 15 are, however, except from this rule if the product is a necessary part of their education.

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

TCSI	:	Not in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. mesotrione (ISO) POTASSIUM SORBATE mixture of polyorganosiloxanes and fillers Smectite-group minerals
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this mixture.

SECTION 16: Other information

Full text of H-Statements

H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H361d	:	Suspected of damaging the unborn child.
H373	:	May cause damage to organs through prolonged or repeated exposure.

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
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Repr.	:	Reproductive toxicity
Skin Irrit.	:	Skin irritation
STOT RE	:	Specific target organ toxicity - repeated exposure

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; 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information	:	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 consid-

ered 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.

Classification of the mixture:		**Classification procedure:**
Met. Corr. 1	H290	Based on product data or assessment
Skin Sens. 1B	H317	Based on product data or assessment
Eye Dam. 1	H318	Based on product data or assessment
Repr. 2	H361d	Calculation method
STOT RE 2	H373	Calculation method
Aquatic Acute 1	H400	Expert judgement and weight of evidence determination.
Aquatic Chronic 1	H410	Based on product data or assessment

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