

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

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

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

1.1 Product identifier

Trade name : MEMPHIS

Unique Formula Identifier (UFI) : Q1N8-G0JV-300G-7Q32

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

Use of the Substance/Mixture : End use herbicide product

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

Manufacturer/importer

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

Customer Information Number : +44 8006 89 8899
E-mail address : SDS@corteva.com

1.4 Emergency telephone number

SGS +32 3 575 55 55 OR

+44 161 88 41235

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Eye irritation, Category 2 H319: Causes serious eye irritation.

™ ® Trademarks of Corteva Agriscience and its affiliated companies.

SAFETY DATA SHEET

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




MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
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) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms : 

Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.
Disposal:
P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

Hazardous components which must be listed on the label:
pyroxsulam (ISO)

Additional Labelling

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

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.

SAFETY DATA SHEET

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



MEMPHIS

Version 1.0 Revision Date: 21.12.2023 SDS Number: 800080101746 Date of last issue: -
Date of first issue: 21.12.2023

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)
Cloquintocet	88349-88-6 01-2120249233-62-0000	Aquatic Chronic 2; H411	35.39
pyroxsulam (ISO)	422556-08-9 613-327-00-4	Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100	25.51
Halauxifen-methyl	943831-98-9	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1,000 M-Factor (Chronic aquatic toxicity): 1,000	6.95
Sodium lignosulfonate	8061-51-6	Eye Irrit. 2; H319	>= 10 - < 20
citric acid	77-92-9 201-069-1 607-750-00-3 01-2119457026-42	Eye Irrit. 2; H319	>= 3 - < 10
Fatty acid chlorides, C18 unsatd., reaction products with sodium N-	Not Assigned 939-538-4	Eye Irrit. 2; H319	>= 1 - < 3

SAFETY DATA SHEET

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



MEMPHIS

Version 1.0 Revision Date: 21.12.2023 SDS Number: 800080101746 Date of last issue: -
Date of first issue: 21.12.2023

methyltaurinate	01-2119976349-20, 01-2119976349-20- 0003, 01- 2119976349-20- 0004, 01- 2119976349-20- 0005, 01- 2119976349-20- 0006, 01- 2119976349-20- 0007		
-----------------	--	--	--

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- If inhaled : Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.
- In case of skin contact : Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- In case of eye contact : Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.
Suitable emergency eye wash facility should be available in work area.
- If swallowed : Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No specific antidote.

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.
Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.
Combustion products may include and are not limited to:
Nitrogen oxides (NO_x)
Hydrogen fluoride
Hydrogen chloride gas
Carbon oxides

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

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

Further information : 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 : Avoid dust formation.
Avoid breathing dust.

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

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

6.2 Environmental precautions

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.
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages
cannot be contained.
Prevent from entering into soil, ditches, sewers, underwater.
See Section 12, Ecological Information.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Local or national regulations may apply to releases and dis-
posal of this material, as well as those materials and items
employed in.
Pick up and arrange disposal without creating dust.
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.
Sweep up or vacuum up spillage and collect in suitable con-
tainer for disposal.
See Section 13, Disposal Considerations, for additional infor-
mation.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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.
Do not get in eyes.

SAFETY DATA SHEET

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



MEMPHIS

Version 1.0 Revision Date: 21.12.2023 SDS Number: 800080101746 Date of last issue: -
Date of first issue: 21.12.2023

Avoid contact with skin and eyes.
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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : 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.

Advice on common storage : Do not store near acids.
Strong oxidizing agents

Packaging material : Unsuitable material: None known.

7.3 Specific end use(s)

Specific use(s) : Plant protection products subject to Regulation (EC) No 1107/2009.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
pyroxsulam (ISO)	422556-08-9	Time Weighted Average (TWA):	5 mg/m ³	Dow IHG

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.
Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Eye/face protection : Use chemical goggles.
Hand protection

Remarks : Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). 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,

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Skin and body protection	:	dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.
Respiratory protection	:	Wear clean, body-covering clothing. Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	Granules.
Colour	:	Tan
Odour	:	Mild
Odour Threshold	:	No data available
pH	:	4.12 (24.5 °C) Method: pH Electrode 1% aqueous solution.
Melting point/range	:	No data available
Freezing point	:	Not applicable
Boiling point/boiling range	:	Not applicable
Flash point	:	Method: closed cup Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Density	:	Not applicable
Bulk density	:	212 g/L (23.8 °C)

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Method: Loose Volumetric

285 g/L (23.8 °C)

Method: Tapped Volumetric

Solubility(ies)

Water solubility : No data available

Auto-ignition temperature : none below 400 degC

Viscosity

Viscosity, dynamic : Not applicable

Explosive properties

: Not explosive

Method: EC Method A.14

Oxidizing properties

: No

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

No decomposition if stored and applied as directed.

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Stable under recommended storage conditions.

No hazards to be specially mentioned.

None known.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Strong acids

Strong bases

10.6 Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials.

Decomposition products can include and are not limited to:

Nitrogen oxides (NOx)

Hydrogen fluoride

Hydrogen chloride gas

Carbon oxides

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Components:

Cloquintocet:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 6.11 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity

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

pyroxsulam (ISO):

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.42 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute dermal toxicity

Halauxifen-methyl:

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

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

Sodium lignosulfonate:

Acute oral toxicity : LD50 (Rat, male and female): > 10,000 mg/kg

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Acute inhalation toxicity : LC50 (Rat): 0.48 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

citric acid:

Acute oral toxicity : LD50 (Mouse): 5,400 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

LD50 (Rat): 3,000 - 12,000 mg/kg

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Acute oral toxicity : LD50: > 4,000 mg/kg
Method: OECD Test Guideline 401
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50: > 2,000 mg/kg
Method: OECD Test Guideline 402
Symptoms: No deaths occurred at this concentration.
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Components:

citric acid:

Result : No skin irritation

Serious eye damage/eye irritation

Components:

pyroxsulam (ISO):

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

Sodium lignosulfonate:

Result : Eye irritation

SAFETY DATA SHEET

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



MEMPHIS

Version 1.0 Revision Date: 21.12.2023 SDS Number: 800080101746 Date of last issue: -
Date of first issue: 21.12.2023

citric acid:

Result : Eye irritation

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Result : Mild eye irritation

Respiratory or skin sensitisation

Components:

Cloquintocet:

Species : Mouse
Result : Does not cause skin sensitisation.

pyroxsulam (ISO):

Test Type : Local lymph node assay
Species : Mouse
Assessment : Does not cause skin sensitisation.

Halauxifen-methyl:

Remarks : Did not demonstrate the potential for contact allergy in mice.
Remarks : For respiratory sensitization:
No relevant data found.

Sodium lignosulfonate:

Remarks : Did not cause allergic skin reactions when tested in guinea pigs.
Remarks : For respiratory sensitization:
No relevant data found.

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Remarks : For skin sensitization:
Did not demonstrate the potential for contact allergy in mice.
Remarks : For respiratory sensitization:
No relevant data found.

Germ cell mutagenicity

Components:

Cloquintocet:

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

pyroxsulam (ISO):

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

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

assessment toxicity studies were negative.

Halauxifen-methyl:

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

Sodium lignosulfonate:

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

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

Carcinogenicity

Components:

Cloquintocet:

Carcinogenicity - Assessment : For similar active ingredient(s)., Did not cause cancer in laboratory animals.

pyroxsulam (ISO):

Carcinogenicity - Assessment : There was equivocal evidence of carcinogenic activity in long-term bioassays. These effects are not believed to be relevant to humans.

Halauxifen-methyl:

Carcinogenicity - Assessment : For similar active ingredient(s)., Halauxifen., Did not cause cancer in laboratory animals.

citric acid:

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

Reproductive toxicity

Components:

Cloquintocet:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction. For similar active ingredient(s)., Did not cause birth defects or any other fetal effects in laboratory animals.

pyroxsulam (ISO):

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

essment Did not cause birth defects or any other fetal effects in laboratory animals.

Halauxifen-methyl:

Reproductive toxicity - Assessment : For similar active ingredient(s), Halauxifen., In animal studies, did not interfere with reproduction.
Has been toxic to the fetus in laboratory animals at doses toxic to the mother., Did not cause birth defects in laboratory animals.

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Reproductive toxicity - Assessment : In animal studies, did not interfere with reproduction.

STOT - single exposure

Product:

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

Components:

Cloquintocet:

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

Halauxifen-methyl:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

citric acid:

Assessment : Available data are inadequate to determine single exposure specific target organ toxicity.

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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.

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Repeated dose toxicity

Components:

Cloquintocet:

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

pyroxsulam (ISO):

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

Halauxifen-methyl:

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

Sodium lignosulfonate:

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

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Remarks : No relevant data found.

Aspiration toxicity

Product:

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

Components:

Cloquintocet:

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

pyroxsulam (ISO):

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

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Halauxifen-methyl:

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

Sodium lignosulfonate:

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

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

SECTION 12: Ecological information

12.1 Toxicity

Components:

Cloquintocet:

Toxicity to fish : LC50 (Sheepshead minnow (*Cyprinodon variegatus*)): > 120 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Oyster shell (*Crassostrea virginica*)): > 110 mg/l
Exposure time: 96 h

LC50 (Mysid shrimp (*Mysidopsis bahia*)): > 120 mg/l
Exposure time: 96 h
Test Type: semi-static test

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): 66.5 mg/l
Exposure time: 72 h
Test Type: static test

ErC50 (*Skeletonema costatum* (marine diatom)): 12.5 mg/l
Exposure time: 96 h

ErC50 (*Anabaena flos-aquae* (cyanobacterium)): 23.7 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC: 0.143 mg/l
Exposure time: 33 d
Species: *Pimephales promelas* (fathead minnow)
Test Type: flow-through test

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

oral LD50: > 2250 mg/kg bodyweight.
Species: *Colinus virginianus* (Bobwhite quail)

contact LD50: > 200 µg/bee
Exposure time: 48 h
Species: *Apis mellifera* (bees)

pyroxsulam (ISO):

- Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): > 87.0 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent
- Toxicity to algae/aquatic plants : ErC50 (*Lemna minor* (duckweed)): 0.00257 mg/l
End point: Biomass
Exposure time: 72 h
Method: OECD 221.
- M-Factor (Acute aquatic toxicity) : 100
- Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h
- Toxicity to fish (Chronic toxicity) : NOEC: 3.2 - 10.1 mg/l
End point: survival
Exposure time: 40 d
Species: *Pimephales promelas* (fathead minnow)
Test Type: flow-through test
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 10.4 mg/l
End point: survival
Exposure time: 21 d
Species: *Daphnia magna* (Water flea)
Test Type: static test
- M-Factor (Chronic aquatic toxicity) : 100
- Toxicity to soil dwelling organisms : LC50: > 10,000 mg/kg
Exposure time: 14 d
Species: *Eisenia fetida* (earthworms)
- Toxicity to terrestrial organisms : LC50: > 5000 mg/kg diet.
Exposure time: 8 d
Species: *Colinus virginianus* (Bobwhite quail)

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

LD50: > 2000 mg/kg bodyweight.
Species: *Colinus virginianus* (Bobwhite quail)

oral LD50: > 107.4 micrograms/bee
Exposure time: 48 h
Species: *Apis mellifera* (bees)

contact LD50: > 100 micrograms/bee
Exposure time: 48 h
Species: *Apis mellifera* (bees)

Halauxifen-methyl:

Toxicity to fish : Remarks: Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

LC50 (*Rainbow trout (Oncorhynchus mykiss)*): 2.01 mg/l
Exposure time: 96 h
Test Type: static test

LC50 (*Pimephales promelas* (fathead minnow)): > 3.22 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 2.12 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): > 3.0 mg/l
Exposure time: 96 h

ErC50 (*Myriophyllum spicatum*): 0.000393 mg/l
End point: Growth rate inhibition
Exposure time: 14 d

M-Factor (Acute aquatic toxicity) : 1,000

Toxicity to microorganisms : EC50 (activated sludge): > 981 mg/l
Exposure time: 1 d

Toxicity to fish (Chronic toxicity) : NOEC: 0.259 mg/l
End point: Other
Species: *Pimephales promelas* (fathead minnow)
Test Type: flow-through test

NOEC: 0.00272 mg/l
Exposure time: 36 d
Species: *Cyprinodon variegatus* (sheepshead minnow)
Test Type: flow-through test

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.484 mg/l
End point: number of offspring
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test

M-Factor (Chronic aquatic toxicity) : 1,000

Toxicity to soil dwelling organisms : LC50: > 1,000 mg/kg
Exposure time: 14 d
End point: mortality
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : Remarks: Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).

dietary LC50: > 5,620 ppm
Exposure time: 5 d
Species: Colinus virginianus (Bobwhite quail)
Method: Other guidelines

dietary LC50: > 5,620 ppm
Exposure time: 5 d
Species: Anas platyrhynchos (Mallard duck)
Method: Other guidelines

oral LD50: > 2250 mg/kg bodyweight.
End point: mortality
Species: Colinus virginianus (Bobwhite quail)

contact LD50: > 98.1 µg/bee
Exposure time: 48 h
End point: mortality
Species: Apis mellifera (bees)

oral LD50: > 108 µg/bee
Exposure time: 48 h
End point: mortality
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.

Sodium lignosulfonate:

Toxicity to fish : Remarks: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

LC50 (Pimephales promelas (fathead minnow)): 615 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent
Remarks: For this family of materials:

citric acid:

Toxicity to fish : Remarks: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50 (Lepomis macrochirus (Bluegill sunfish)): 1,516 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

LC50 (Leuciscus idus (Golden orfe)): 440 - 760 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,535 mg/l
Exposure time: 24 h
Test Type: Static
Method: OECD Test Guideline 202 or Equivalent

12.2 Persistence and degradability

Components:

pyroxsulam (ISO):

Biodegradability : Test Type: aerobic
Biodegradation: 20 - 30 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Fail

Halauxifen-methyl:

Biodegradability : Result: Not biodegradable
Remarks: For similar active ingredient(s).
Halauxifen.
Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biodegradation: 7.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310 or Equivalent

SAFETY DATA SHEET

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



MEMPHIS

Version 1.0 Revision Date: 21.12.2023 SDS Number: 800080101746 Date of last issue: -
Date of first issue: 21.12.2023

Remarks: 10-day Window: Not applicable

Sodium lignosulfonate:

Biodegradability : Remarks: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Biodegradation: < 5 %
Exposure time: 28 d
Method: OECD Test Guideline 301E
Remarks: 10-day Window: Fail

Photodegradation : Rate constant: 1.089E-10 cm³/s
Method: Estimated.

citric acid:

Biodegradability : Remarks: Material is expected to be readily biodegradable. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

Test Type: aerobic
Result: Readily biodegradable.
Biodegradation: 97 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent
Remarks: 10-day Window: Pass

Test Type: aerobic
Biodegradation: 98 %
Exposure time: 7 d
Method: OECD Test Guideline 302B or Equivalent
Remarks: 10-day Window: Not applicable

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Biodegradability : Result: Readily biodegradable.
Remarks: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Method: OECD Test Guideline 301D

12.3 Bioaccumulative potential

Components:

Cloquintocet:

Partition coefficient: n-octanol/water : log Pow: 2.12
Method: Estimated.
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

pyroxsulam (ISO):

Partition coefficient: n-octanol/water :
log Pow: -1.01
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Halauxifen-methyl:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Exposure time: 42 d
Temperature: 21.8 °C
Concentration: 0.00194 mg/l
Bioconcentration factor (BCF): 233

Partition coefficient: n-octanol/water : log Pow: 3.76
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Sodium lignosulfonate:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 3.2

Partition coefficient: n-octanol/water :
log Pow: -3.45
Method: Estimated.
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

citric acid:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 0.01
Method: Measured

Partition coefficient: n-octanol/water : log Pow: -1.72 (20 °C)
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

12.4 Mobility in soil

Components:

Cloquintocet:

Distribution among environ- : Koc: 206

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

mental compartments Method: Estimated.
Remarks: Potential for mobility in soil is medium (Koc between 150 and 500).

pyroxsulam (ISO):

Distribution among environmental compartments : Koc: <= 42
Method: Estimated.
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

Halauxifen-methyl:

Distribution among environmental compartments : Koc: 5684
Remarks: Expected to be relatively immobile in soil (Koc > 5000).

Sodium lignosulfonate:

Distribution among environmental compartments : Koc: > 99999
Method: Estimated.
Remarks: Expected to be relatively immobile in soil (Koc > 5000).

citric acid:

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

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

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.

Components:

Cloquintocet:

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).

pyroxsulam (ISO):

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).

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

Halauxifen-methyl:

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).

Sodium lignosulfonate:

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

citric acid:

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).

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

12.6 Other adverse effects

Product:

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

Components:

Cloquintocet:

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

pyroxsulam (ISO):

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

Halauxifen-methyl:

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

Sodium lignosulfonate:

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

citric acid:

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

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

of substances that deplete the ozone layer.

Fatty acid chlorides, C18 unsatd., reaction products with sodium N-methyltaurinate:

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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

SECTION 14: Transport information

14.1 UN number

ADR : UN 3077
RID : UN 3077
IMDG : UN 3077
IATA : UN 3077

14.2 UN proper shipping name

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Pyroxsulam, Halauxifen-methyl)
RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Pyroxsulam, Halauxifen-methyl)
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Pyroxsulam, Halauxifen-methyl)
IATA : Environmentally hazardous substance, solid, n.o.s.
(Pyroxsulam, Halauxifen-methyl)

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 9	
RID	: 9	
IMDG	: 9	
IATA	: 9	

14.4 Packing group

ADR	
Packing group	: III
Classification Code	: M7
Hazard Identification Number	: 90
Labels	: 9
Tunnel restriction code	: (-)
RID	
Packing group	: III
Classification Code	: M7
Hazard Identification Number	: 90
Labels	: 9
IMDG	
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Remarks	: Stowage category A
IATA (Cargo)	
Packing instruction (cargo aircraft)	: 956
Packing instruction (LQ)	: Y956
Packing group	: III
Labels	: Miscellaneous
IATA (Passenger)	
Packing instruction (passenger aircraft)	: 956
Packing instruction (LQ)	: Y956
Packing group	: III
Labels	: Miscellaneous

14.5 Environmental hazards

ADR	
Environmentally hazardous	: yes
RID	
Environmentally hazardous	: yes
IMDG	
Marine pollutant	: yes(Pyroxsulam, Halauxifen-methyl)

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

14.6 Special precautions for user

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation	:	Not applicable
The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain)	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
UK 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

Registration Number : MAPP 20659

15.2 Chemical safety assessment

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

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

SECTION 16: Other information

Full text of H-Statements

H317	:	May cause an allergic skin reaction.
H319	:	Causes serious eye irritation.
H400	:	Very toxic to aquatic life.

SAFETY DATA SHEET

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



MEMPHIS

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	21.12.2023	800080101746	Date of first issue: 21.12.2023

H410 : Very toxic to aquatic life with long lasting effects.
H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Irrit. : Eye irritation
Skin Sens. : Skin sensitisation
Dow IHG : Dow Industrial Hygiene Guideline
Dow IHG / TWA : Time Weighted Average (TWA):

ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; ASTM - American Society for the Testing of Materials; ECx - Concentration associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; 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; NOEC - Non-Observed Effective Concentration; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; (Q)SAR - (Quantitative) Structure Activity Relationship; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SDS - Safety Data Sheet; UN - United Nations.

Further information

Classification of the mixture:

Eye Irrit. 2	H319
Skin Sens. 1	H317
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method

Product code: GF-3122

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.

GB / 6N