AXIAL

Version	Revision Date:	SDS Number:	This version replaces all previous versions.
4.1	11.05.2023	S00027056453	

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

1.1 Product identifier

Trade name : AXIAL

Design code : A13617AV

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

Use of the Substance/Mixture : Herbicide

1.3 Details of the supplier of the safety data sheet

Company : Syngenta SA (Pty) Ltd
P.O. Box 1044, No. 4 Krokodildrift Avenue
Brits 0250
South Africa

Telephone : +27 (0)12 2506 300

Telefax : -

E-mail address of person responsible for the SDS : sds.ame@syngenta.com

1.4 Emergency telephone number

Emergency telephone number : +27 (0) 82 446 8946 (Griffon)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin sensitisation, Sub-category 1A	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.
Skin corrosion/irritation, Category 3	H316: Causes mild skin irritation.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - repeated exposure, Category 2, Urinary system, Liver	H373: May cause damage to organs (/$/*_ORGAN_REPEAT/$/) through prolonged or repeated exposure.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements :
H332 Harmful if inhaled.
H361d Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.
H316 Causes mild skin irritation.
H351 Suspected of causing cancer.
H317 May cause an allergic skin reaction.

Precautionary statements :

Prevention:

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
P201 Obtain special instructions before use.
P260 Do not breathe mist or vapours.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P272 Contaminated work clothing should not be allowed out of the workplace.

Response:

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P391 Collect spillage.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 Take off contaminated clothing.

Storage:

P405 Store locked up.

Disposal:

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

Hazardous components which must be listed on the label:

pinoxaden (ISO)
cloquintocet-mexyl
2-methylpentane-2,4-diol
naphthalene

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
hydrocarbons, C10-C13, aromatics, <1% naphthalene	Not Assigned 01-2119451097-39-xxxx	Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 25 - < 30
2-methylpentane-2,4-diol	107-41-5 203-489-0 603-053-00-3 01-2119539582-35-xxxx	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Repr. 2; H361d	>= 10 - < 20
pinoxaden (ISO)	243973-20-8 607-726-00-2	Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1A; H317 Repr. 2; H361d STOT SE 3; H335 (Respiratory system) Aquatic Acute 1; H400 Aquatic Chronic 3; H412 --- M-Factor (Acute aquatic toxicity): 1	>= 3 - < 10
cloquintocet-mexyl	99607-70-2 01-2119381871-32-xxxx	Acute Tox. 4; H332 Skin Sens. 1; H317 STOT RE 2; H373 (Urinary system, Liver) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 --- M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 1 - < 2,5
naphthalene	91-20-3 202-049-5 601-052-00-2	Flam. Sol. 2; H228 Acute Tox. 4; H302 Carc. 2; H351 Aquatic Acute 1; H400	>= 0,25 - < 1

		Aquatic Chronic 1; H410	

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.

If inhaled : Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately.

In case of skin contact : Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required.

If swallowed : If swallowed, seek medical advice immediately and show this container or label.
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Aspiration may cause pulmonary oedema and pneumonitis.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : There is no specific antidote available.
Treat symptomatically.
Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Extinguishing media - small fires
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Extinguishing media - large fires
Alcohol-resistant foam

or
Water spray

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).
Exposure to decomposition products may be a hazard to health.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

Further information : Do not allow run-off from fire fighting to enter drains or water courses.
Cool closed containers exposed to fire with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.

6.2 Environmental precautions

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Do not flush into surface water or sanitary sewer system.
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 : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Clean contaminated surface thoroughly.
Clean with detergents. Avoid solvents.
Retain and dispose of contaminated wash water.

6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : No special protective measures against fire required.
Avoid contact with skin and eyes.

When using do not eat, drink or smoke.
For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

Specific use(s) : For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
hydrocarbons, C10-C13, aromatics, <1% naphthalene	Not Assigned	TWA	8 ppm 50 mg/m3	Supplier
2-methylpentane-2,4-diol	107-41-5	OEL-RL (vapour fraction)	50 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
		OEL- RL STEL/C (vapour fraction)	100 ppm	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
		OEL- RL STEL/C (inhalable fraction, aerosol only)	20 mg/m3	ZA OEL
	Further information: Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			
pinoxaden (ISO)	243973-20-8	TLV-C	0,1 mg/m3	Syngenta
cloquintocet-mexyl	99607-70-2	TWA	1 mg/m3	Syngenta
naphthalene	91-20-3	OEL-RL	20 ppm	ZA OEL
	Further information: danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents, denotes carcinogenicity, which is based on GHS categorisation, including category 1A, 1B			
		TWA	10 ppm 50 mg/m3	91/322/EEC

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

Substance name	End Use	Exposure routes	Potential health effects	Value
tris(2-ethylhexyl)	Workers	Inhalation	Long-term systemic	350 mg/m3

phosphate			effects	
	Workers	Inhalation	Acute systemic effects	2800 mg/m3
	Workers	Dermal	Long-term systemic effects	50 mg/kg
	Workers	Dermal	Acute systemic effects	40 mg/kg
	Consumers	Dermal	Acute systemic effects	200 mg/kg
	Consumers	Dermal	Long-term systemic effects	25 mg/kg
	Consumers	Inhalation	Acute systemic effects	500 mg/m3
	Consumers	Inhalation	Long-term systemic effects	62,5 mg/m3
	Consumers	Oral	Acute systemic effects	200 mg/kg
	Consumers	Oral	Long-term systemic effects	25 mg/kg
2-methylpentane-2,4-diol	Workers	Inhalation	Short-term exposure, Local effects	98 mg/m3
	Workers	Inhalation	Long-term systemic effects	14 mg/m3
	Workers	Inhalation	Long-term local effects	49 mg/m3
	Workers	Dermal	Long-term systemic effects	2 mg/kg
	Consumers	Inhalation	Short-term exposure, Local effects	49 mg/m3
	Consumers	Inhalation	Long-term systemic effects	3,5 mg/m3
	Consumers	Inhalation	Long-term local effects	25 mg/m3
	Consumers	Oral	Long-term systemic effects	1 mg/kg
	Consumers	Dermal	Long-term systemic effects	1 mg/kg
hydrocarbons, C10-C13, aromatics, <1% naphthalene	Workers	Inhalation	Long-term systemic effects	151 mg/m3
	Workers	Dermal	Long-term systemic effects	12,5 mg/kg
	Consumers	Inhalation	Long-term systemic effects	32 mg/m3
	Consumers	Dermal	Long-term systemic effects	7,5 mg/kg
	Consumers	Oral	Long-term systemic effects	7,5 mg/kg
castor oil, ethoxylated	Workers	Inhalation	Long-term systemic effects	16,4 mg/m3
	Workers	Dermal	Long-term systemic effects	4,67 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	2,9 mg/m3

	Consumers	Dermal	Long-term systemic effects	1,67 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	1,67 mg/kg bw/day
cloquintocet-mexyl	Industrial use	Dermal	Long-term exposure, Systemic effects	3,33 mg/kg
	Industrial use	Inhalation	Long-term exposure, Systemic effects	0,303 mg/m3
naphthalene	Workers	Inhalation	Long-term systemic effects	25 mg/m3
	Workers	Inhalation	Long-term local effects	25 mg/m3
	Workers	Dermal	Long-term systemic effects	3,57 mg/kg

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

Substance name	Environmental Compartment	Value
tris(2-ethylhexyl) phosphate	Sewage treatment plant	1 mg/l
2-methylpentane-2,4-diol	Fresh water	0,429 mg/l
	Marine water	0,0429 mg/l
	Fresh water sediment	1,79 mg/kg
	Marine sediment	0,179 mg/kg
	Soil	0,11 mg/kg
castor oil, ethoxylated	Fresh water sediment	0,0129 mg/kg dry weight (d.w.)
	Marine sediment	0,00129 mg/kg dry weight (d.w.)
	Soil	0,00258 mg/kg dry weight (d.w.)
cloquintocet-mexyl	Fresh water	0,0018 mg/l
	Fresh water sediment	0,934 mg/kg dry weight (d.w.)
	Marine water	0,00018 mg/l
	Marine sediment	0,0934 mg/kg dry weight (d.w.)
	Soil	0,463 mg/kg dry weight (d.w.)
naphthalene	Fresh water	0,0024 mg/l
	Marine water	0,0024 mg/l
	Sewage treatment plant	2,9 mg/l
	Fresh water sediment	0,0672 mg/kg
	Marine sediment	0,0672 mg/kg
	Soil	0,0533 mg/kg

8.2 Exposure controls

Engineering measures

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

Maintain air concentrations below occupational exposure standards.
Where necessary, seek additional occupational hygiene advice.

Personal protective equipment

Eye/face protection	:	No special protective equipment required.
Hand protection		
Material	:	Nitrile rubber
Break through time	:	> 480 min
Glove thickness	:	0,5 mm
Remarks	:	Wear protective gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. The break through time depends amongst other things on the material, the thickness and the type of glove and therefore has to be measured for each case. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Remove and wash contaminated clothing before re-use. Wear as appropriate: Impervious clothing
Respiratory protection	:	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Suitable respiratory equipment: Respirator with a half face mask The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Protective measures	:	The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid, clear
Colour	:	orange
Odour	:	sweetish
Odour Threshold	:	No data available
pH	:	4,5 Concentration: 1 %w/v

Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	103 °C Method: Pensky-Martens closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	0,965 g/cm3 (25 °C)
Solubility(ies)		
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	380 °C
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	50 mPa.s (20 °C)
		22,39 mPa.s (40 °C)
Viscosity, kinematic	:	24,23 mm2/s (40 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Surface tension	:	30,0 mN/m, 20 °C
Particle size	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

None reasonably foreseeable.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of exposure : Ingestion
Inhalation
Skin contact
Eye contact

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, female): > 2.000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 2,42 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

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

Components:

2-methylpentane-2,4-diol:

Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

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

pinoxaden (ISO):

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

Acute toxicity estimate: 500 mg/kg
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

Acute inhalation toxicity : LC50 (Rat, male): 4,63 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute toxicity estimate: 4,63 mg/l
Test atmosphere: dust/mist
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

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

cloquintocet-mexyl:

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 0,935 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The component/mixture is moderately toxic after short term inhalation.
Remarks: Highest attainable concentration

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

naphthalene:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Skin corrosion/irritation

Product:

Species : Rabbit
Result : Mild skin irritation

Components:

hydrocarbons, C10-C13, aromatics, <1% naphthalene:

Result : Repeated exposure may cause skin dryness or cracking.

2-methylpentane-2,4-diol:

Species : Rabbit
Result : Irritating to skin.

pinoxaden (ISO):

Method : Based on Human Evidence
Result : Irritating to skin.

cloquintocet-mexyl:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Product:

Species : Rabbit
Result : No eye irritation

Components:

2-methylpentane-2,4-diol:

Species : Rabbit
Result : Irritation to eyes, reversing within 21 days

pinoxaden (ISO):

Species : Rabbit
Result : Irritation to eyes, reversing within 21 days

cloquintocet-mexyl:

Species : Rabbit
Result : No eye irritation

Respiratory or skin sensitisation

Product:

Test Type : Buehler Test
Species : Guinea pig
Result : The product is a skin sensitiser, sub-category 1A.

Components:

pinoxaden (ISO):

Test Type : Local lymph node assay (LLNA)
Species : Mouse
Result : The product is a skin sensitiser, sub-category 1A.

Test Type : Respiratory sensitisation
Result : Does not cause respiratory sensitisation.
Remarks : Experience with human exposure

cloquintocet-mexyl:

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

Germ cell mutagenicity

Components:

2-methylpentane-2,4-diol:

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

pinoxaden (ISO):

Germ cell mutagenicity- Assessment	:	Animal testing did not show any mutagenic effects.

cloquintocet-mexyl:

Germ cell mutagenicity- Assessment	:	Animal testing did not show any mutagenic effects.

Carcinogenicity

Components:

2-methylpentane-2,4-diol:

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

pinoxaden (ISO):

Carcinogenicity - Assessment	:	No evidence of carcinogenicity in animal studies.

cloquintocet-mexyl:

Carcinogenicity - Assessment	:	No evidence of carcinogenicity in animal studies.

naphthalene:

Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Components:

2-methylpentane-2,4-diol:

Reproductive toxicity - Assessment	:	Some evidence of adverse effects on development, based on animal experiments.

pinoxaden (ISO):

Reproductive toxicity - Assessment	:	No toxicity to reproduction

cloquintocet-mexyl:

Reproductive toxicity - Assessment	:	No toxicity to reproduction

STOT - single exposure

Components:

pinoxaden (ISO):

Assessment	:	Based on Human Evidence, The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.
Remarks	:	Breathing difficulties Cough Acute irritation of the respiratory system leading to tightness of the chest and an asthmatic condition.

cloquintocet-mexyl:

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

STOT - repeated exposure

Components:

pinoxaden (ISO):

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

cloquintocet-mexyl:

Target Organs	:	Urinary system, Liver
Assessment	:	The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Aspiration toxicity

Components:

hydrocarbons, C10-C13, aromatics, <1% naphthalene:

May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 70,71 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,31 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 29,8 mg/l Exposure time: 96 h

NOEC (Raphidocelis subcapitata (freshwater green alga)): 6,4 mg/l
End point: Growth rate
Exposure time: 96 h

ErC50 (Lemna gibba (gibbous duckweed)): 32 mg/l
Exposure time: 7 d

EC10 (Lemna gibba (gibbous duckweed)): 3,7 mg/l
End point: Growth rate
Exposure time: 7 d

ErC50 (Glyceria maxima (reed sweet grass)): 5,76 mg/l
Exposure time: 14 d

EC10 (Glyceria maxima (reed sweet grass)): 1,25 mg/l
End point: Growth rate
Exposure time: 14 d

Components:

hydrocarbons, C10-C13, aromatics, <1% naphthalene:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 3,6 mg/l
Exposure time: 96 h
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 1,1 mg/l
Exposure time: 48 h
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : EL50 (Raphidocelis subcapitata (freshwater green alga)): 7,9 mg/l
End point: Growth rate
Exposure time: 72 h
Remarks: Information given is based on data obtained from similar substances.

NOELR (Raphidocelis subcapitata (freshwater green alga)): 0,22 mg/l
End point: Growth rate
Exposure time: 72 h
Remarks: Information given is based on data obtained from similar substances.

Ecotoxicology Assessment

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

pinoxaden (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 10,3 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 52 mg/l Exposure time: 48 h LC50 (Americamysis): 4,7 mg/l Exposure time: 96 h
Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 2,39 mg/l Exposure time: 72 h EC10 (Raphidocelis subcapitata (freshwater green alga)): 0,601 mg/l End point: Growth rate Exposure time: 72 h ErC50 (Glyceria maxima (reed sweet grass)): 0,498 mg/l Exposure time: 14 d EC10 (Glyceria maxima (reed sweet grass)): 0,0239 mg/l End point: Growth rate Exposure time: 14 d
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC: 3,2 mg/l Exposure time: 28 d Species: Oncorhynchus mykiss (rainbow trout)

cloquintocet-mexyl:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 0,97 mg/l Exposure time: 96 h LC50 (Gobiocypris rarus (rare gudgeon)): 0,102 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 0,82 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): > 2,2 mg/l Exposure time: 72 h NOEC (Desmodesmus subspicatus (green algae)): 0,12 mg/l End point: Growth rate Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (activated sludge): > 1.000 mg/l Exposure time: 3 h
Toxicity to daphnia and other	:	NOEC: > 0,437 mg/l

aquatic invertebrates (Chronic toxicity) : Exposure time: 21 d
Species: Daphnia (water flea)

M-Factor (Chronic aquatic toxicity) : 1

naphthalene:

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

12.2 Persistence and degradability

Components:

hydrocarbons, C10-C13, aromatics, <1% naphthalene:

Biodegradability : Result: Readily biodegradable.

2-methylpentane-2,4-diol:

Biodegradability : Result: Readily biodegradable.

pinoxaden (ISO):

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 0,1 d
Remarks: Product is not persistent.

cloquintocet-mexyl:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 0,4 d
Remarks: Product is not persistent.

12.3 Bioaccumulative potential

Components:

pinoxaden (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 1,17
Remarks: Low bioaccumulation potential.

Partition coefficient: n-octanol/water : log Pow: 3,2 (25 °C)

cloquintocet-mexyl:

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 5,24 (25 °C)

12.4 Mobility in soil

Components:

pinoxaden (ISO):

Distribution among environmental compartments : Remarks: Moderately mobile in soils

Stability in soil : Dissipation time: 0,4 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

cloquintocet-mexyl:

Distribution among environmental compartments : Remarks: immobile

Stability in soil : Dissipation time: 2,4 d
Percentage dissipation: 50 % (DT50)
Remarks: Product is not persistent.

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:

2-methylpentane-2,4-diol:

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).

pinoxaden (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).

cloquintocet-mexyl:

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).

naphthalene:

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

Product:

Endocrine disrupting poten- : The substance/mixture does not contain components consid-

tial | ered 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 13: Disposal considerations

13.1 Waste treatment methods

Product : Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging : Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14: Transport information

14.1 UN number

UNRTDG : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

UNRTDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(SOLVENT NAPHTHA)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(SOLVENT NAPHTHA)

IATA : Environmentally hazardous substance, liquid, n.o.s.
(SOLVENT NAPHTHA)

14.3 Transport hazard class(es)

UNRTDG : 9

IMDG : 9

IATA : 9

14.4 Packing group

UNRTDG
Packing group : III

Labels : 9

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

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

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

14.5 Environmental hazards

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : 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 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

Other regulations:

None known.

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of H-Statements

H228	:	Flammable solid.
H302	:	Harmful if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H319	:	Causes serious eye irritation.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.
H351	:	Suspected of causing cancer.
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.
H411	:	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
Asp. Tox.	:	Aspiration hazard
Carc.	:	Carcinogenicity
Eye Irrit.	:	Eye irritation
Flam. Sol.	:	Flammable solids
Repr.	:	Reproductive toxicity
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation
STOT RE	:	Specific target organ toxicity - repeated exposure
STOT SE	:	Specific target organ toxicity - single exposure
91/322/EEC	:	Europe. Commission Directive 91/322/EEC on establishing indicative limit values
Syngenta	:	Syngenta Occupational Exposure Limit
ZA OEL	:	South Africa. The Regulations for Hazardous Chemical Agents, Occupational Exposure Limits
91/322/EEC / TWA	:	Limit Value - eight hours
Syngenta / TLV-C	:	Ceiling Limit Value
Syngenta / TWA	:	Time weighted average
ZA OEL / OEL-RL	:	Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)
ZA OEL / OEL- RL STEL/C	:	Occupational Exposure Limit Restricted limit - Short term occupational exposure limits / ceiling limits

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 as-

sociated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Acute Tox. 4	H332	Based on product data or assessment
Skin Sens. 1A	H317	Based on product data or assessment
Repr. 2	H361d	Calculation method
Aquatic Chronic 2	H411	Calculation method
3	H316	Based on product data or assessment
Carc. 2	H351	Calculation method
STOT RE 2	H373	Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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