

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

1.1. Product identifier

Product form : Mixture
Name : Clethodim 120 g/L EC
Trade name : Centurion max

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

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : Plant protection products
Use of the substance/mixture : Herbicide

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Arysta LifeScience SAS
BP 80 - Route d'Artix
64150 Noguères - FRANCE
T +33 5 59 60 92 92 - F +33 5 59 60 92 99
sds.info@upl-ltd.com

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Specific target organ toxicity — Single exposure, Category 3, Narcosis H336
Aspiration hazard, Category 1 H304
Hazardous to the aquatic environment — Chronic Hazard, Category 2 H411
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

May cause drowsiness or dizziness. May be fatal if swallowed and enters airways. Toxic to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

GHS08

GHS09

CLP Signal word

: Danger

Hazardous ingredients

: Hydrocarbons, C10, aromatics, <1% naphthalene; Hydrocarbons, C10-C13, aromatics, <1% naphthalene

Hazard statements (CLP)

: H304 - May be fatal if swallowed and enters airways.
H336 - May cause drowsiness or dizziness.
H411 - Toxic to aquatic life with long lasting effects.

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Precautionary statements (CLP)

: P261 - Avoid breathing mist, spray.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 - Call a POISON CENTER/doctor if you feel unwell.
P331 - Do NOT induce vomiting.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
P280 - Wear eye protection, protective gloves, protective clothing.

EUH-statements

: EUH401 - To avoid risks to human health and the environment, comply with the instructions for use.
EUH066 - Repeated exposure may cause skin dryness or cracking.
EUH208 - Contains clethodim. May produce an allergic reaction.

2.3. Other hazards

Other hazards not contributing to the classification : SP1 - Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hydrocarbons, C10, aromatics, <1% naphthalene	(EC-No.) 918-811-1 (REACH-no) 01-2119463583-34	5 - 40	STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
clethodim	(CAS-No.) 99129-21-2 (EC Index-No.) 606-150-00-9	12 - 15	Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Amines, tallow alkyl, ethoxylated, compounds with polyethylene glycol hydrogen sulfate C12-14 alkyl ether	(CAS-No.) 184785-40-8	1 - 10	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 2, H411
Tall oil fatty acids, ethoxylated	(CAS-No.) 61791-00-2	0 - 5	Aquatic Chronic 3, H412
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	(EC-No.) 922-153-0 (REACH-no) 01-2119451097-39	0 - 5	Asp. Tox. 1, H304 Aquatic Chronic 2, H411

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention. Wash skin with plenty of water.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion : Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : May cause drowsiness or dizziness.
Symptoms/effects after skin contact : May cause an allergic skin reaction. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after ingestion : Risk of lung oedema.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wear personal protective equipment. Ensure good ventilation of the work station. Avoid contact with skin and eyes. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapours/spray.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:

Avoid release to the environment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: clear.
Colour	: amber.
Odour	: aromatic.
Odour threshold	: Not applicable
	Not applicable
pH	: Not applicable
Relative evaporation rate (butylacetate=1)	: Not applicable
Relative evaporation rate (ether=1)	: Not applicable
Melting point	: Not applicable
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: 74.9 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: Not applicable
Flammability (solid, gas)	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density at 20 °C	: No data available
Relative density	: 0.927
Density	: 0.927 g/ml
Solubility	: Not applicable.
Log Pow	: Not applicable
Viscosity, kinematic	: < 20.5 mm ² /s
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: Not applicable

9.2. Other information

Bulk density	: Not applicable
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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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LD50 oral rat	> 2000 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bw/day
LC50 inhalation rat (mg/l)	> 5.51 mg/l/4h

clethodim (99129-21-2)

LD50 oral rat	1133 mg/kg bodyweight
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LD50 dermal rat	> 4167 mg/kg bodyweight
LC50 inhalation rat (mg/l)	> 3.25 mg/l/4h
NOAEL, short term, oral, Dog	= 21 mg/kg bw/day (90 days)

Hydrocarbons, C10, aromatics, <1% naphthalene

LD50 oral rat	6318 mg/kg (OECD 401 method)
LD50 dermal rabbit	> 2000 mg/kg (OECD 402 method)
LC50 inhalation rat (mg/l)	> 4688 mg/m ³ (maximum attainable concentration - zero mortality) (OECD 403 method)

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

LD50 oral rat	> 5000 mg/kg (OCDE 401)
LD50 dermal rabbit	> 2000 mg/kg (OCDE 402)
LD50 dermal	3160 mg/kg
LC50 inhalation rat (mg/l)	> 4778 mg/m ³ (OCDE 403)

Skin corrosion/irritation	: Not classified. pH: Not applicable
Serious eye damage/irritation	: Not classified pH: Not applicable
Respiratory or skin sensitisation	: Not classified.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause drowsiness or dizziness.
STOT-repeated exposure	: Not classified
Aspiration hazard	: May be fatal if swallowed and enters airways.

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Viscosity, kinematic	< 20.5 mm ² /s
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Toxic to aquatic life with long lasting effects.
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Toxic to aquatic life with long lasting effects.

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LC50 fish	≈ 8.98 mg/l (96 h Oncorhynchus mykiss)
EC50 Daphnia	29.4 mg/l (Daphnia magna)
ErC50 (algae)	15.86 mg/l (72h Anabaena flos-aquae)

clethodim (99129-21-2)

LC50 fish	25 mg/l (96 h Onchorynchus mykiss)
EC50 Daphnia	> 100 mg/l (48h Daphnia magna)
ErC50 (algae)	> 12 mg/l (72h Selenastrum capricornutum)
ErC50 (other aquatic plants)	1.9 mg/l (14d Lemna gibba - Fronds)
NOEC chronic fish	3.9 mg/l (Oncorhynchus mykiss)
NOEC chronic crustacea	49 mg/l (21d Daphnia magna)
LD50, avian, acute	> 1640 mg/kg bw/day ((Bobwhite quail))
LC50, avian, short term	> 851 mg/kg bw/day ((Mallard duck))
NOEC, avian, Chronic	= 17 mg/kg bw/day ((reproduction) (Bobwhite quail))
LD50, oral, Apis mellifera (bee)	> 43 (µg/bee)

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LD50, Dermal, Apis mellifera (bee)	> 51 (µg/bee)
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Hydrocarbons, C10, aromatics, <1% naphthalene

LL50, Acute, Fish	2 - 5 mg/l/96h (Oncorhynchus mykiss)
NOELR, Chronic, Fish	0.441 mg/l (28 days)
LL50, Acute, aquatic invertebrates	3 - 10 mg/l/48h (Daphnia magna)
NOELR, Chronic, aquatic invertebrates	0.771 mg/l (21 days)
EL50, algae	1 - 3 mg/l/72h (Pseudokirchneriella subcapitata)
NOELR, algae	1 mg/l/72h (Pseudokirchneriella subcapitata)

Hydrocarbons, C10-C13, aromatics, <1% naphthalene

LC50 fish	3.6 mg/l (96h Salmo gairdneri)
EC50 Daphnia	1.1 mg/l
ErC50 (algae)	7.9 mg/l (72h Pseudokirchneriella subcapitata)
NOEC chronic algae	0.22 mg/l

12.2. Persistence and degradability

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Persistence and degradability	Biodegradable.
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clethodim (99129-21-2)

Persistence and degradability	Readily biodegradable.
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Hydrocarbons, C10, aromatics, <1% naphthalene

Persistence and degradability	Inherently biodegradable. 49.6 % biodegradation (28 days). (OECD 301F method).
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Hydrocarbons, C10-C13, aromatics, <1% naphthalene

Persistence and degradability	Readily biodegradable.
Biodegradation	70 % (28d)

12.3. Bioaccumulative potential

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Log Pow	Not applicable
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clethodim (99129-21-2)

BCF fish	2.1
Log Pow	4.2
Bioaccumulative potential	Not potentially bioaccumulable.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

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This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Component

clethodim (99129-21-2)	PBT/vPvB assessment not available as chemical safety assessment not conducted
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12.6. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA
14.1. UN number		
UN 3082	UN 3082	UN 3082
14.2. UN proper shipping name		
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.	Environmentally hazardous substance, liquid, n.o.s.
Transport document description		
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. ((xylene-naphta range solvent)), 9, III, (E)	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. ((xylene-naphta range solvent)), 9, III, MARINE POLLUTANT	UN 3082 Environmentally hazardous substance, liquid, n.o.s. ((xylene-naphta range solvent)), 9, III
14.3. Transport hazard class(es)		
9	9	9
		
14.4. Packing group		
III	III	III
14.5. Environmental hazards		
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes
No supplementary information available		

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: M6
Special provisions (ADR)	: 274, 335, 601, 375
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Special packing provisions (ADR)	: PP1
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T4
Portable tank and bulk container special provisions (ADR)	: TP1, TP29
Tank code (ADR)	: LGBV
Vehicle for tank carriage	: AT
Transport category (ADR)	: 3
Special provisions for carriage - Packages (ADR)	: V12
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV13
Hazard identification number (Kemler No.)	: 90
Orange plates	:



Tunnel restriction code : E

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Transport by sea

Special provisions (IMDG)	: 274, 335, 969
Limited quantities (IMDG)	: 5 L
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P001, LP01
Special packing provisions (IMDG)	: PP1
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP2, TP29
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-F
Stowage category (IMDG)	: A
MFAG-No	: 171

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y964
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 964
PCA max net quantity (IATA)	: 450L
CAO packing instructions (IATA)	: 964
CAO max net quantity (IATA)	: 450L
Special provisions (IATA)	: A97, A158, A197
ERG code (IATA)	: 9L

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H302	Harmful if swallowed.

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H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
EUH066	Repeated exposure may cause skin dryness or cracking.
EUH208	Contains clethodim. May produce an allergic reaction.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

STOT SE 3	H336	Calculation method
Asp. Tox. 1	H304	Expert judgment
Aquatic Chronic 2	H411	Calculation method

Safety Data Sheet applicable for regions : EU - Europe;IE - Ireland

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.