

FUSILADE FORTE 15% EC

Version 7.0 Revision Date: 06.02.2018 SDS Number: S00030738887 This version replaces all previous versions.

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

1.1 Product identifier

Trade name : FUSILADE FORTE 15% EC

Design code : A12715A

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 Crop Protection AG
Postfach
CH-4002 Basel
Switzerland

Telephone : +41 61 323 11 11

Telefax : +41 61 323 12 12

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

1.4 Emergency telephone number

Emergency telephone number : +44 1484 538444

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

Reproductive toxicity, Category 2 H361d: Suspected of damaging the unborn child.

Chronic aquatic toxicity, Category 2 H411: Toxic to aquatic life with long lasting effects.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.
H361d Suspected of damaging the unborn child.
H411 Toxic to aquatic life with long lasting effects.

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

Restricted to professional users.

Precautionary statements :

Prevention:

P201 Obtain special instructions before use.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P391 Collect spillage.

Hazardous components which must be listed on the label:
fluazifop-P-butyl (ISO)

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

Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
fatty alcohol C16-C18 unsaturated	68002-94-8 268-106-1	Skin Irrit. 2; H315 Aquatic Chronic 3; H412	>= 25 - < 30
poly(oxy-1,2-ethanediyl), alpha-9-	9004-98-2	Acute Tox. 4; H302	>= 20 - < 30

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octadecenyl-omega-hydroxy-,(Z)-	500-016-2	Eye Dam. 1; H318	
Distillates (petroleum), solvent-dewaxed heavy paraffinic; Baseoil -unspecified	64742-65-0 265-169-7 649-474-00-6 01-2119471299-27	Asp. Tox. 1; H304	>= 10 - < 20
fluazifop-P-butyl (ISO)	79241-46-6 607-305-00-3	Skin Sens. 1; H317 Repr. 2; H361d Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 10 - < 20
octan-1-ol	111-87-5 203-917-6 01-2119486978-10	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	>= 10 - < 20
calcium dodecylbenzenesulphonate	26264-06-2 247-557-8	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 1 - < 2.5
toluene	108-88-3 203-625-9 601-021-00-3 01-2119471310-51	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Repr. 2; H361d STOT SE 3; H336 STOT RE 2; H373 Asp. Tox. 1; H304	>= 0.1 - < 1

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

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container or label.
Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Nonspecific
No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : There is no specific antidote available.
Treat symptomatically.

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 firefighting : 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.

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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.

Further information on storage stability : Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

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
fluazifop-P-butyl	79241-46-6	TWA	0.5 mg/m ³	Syngenta

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(ISO)				
toluene	108-88-3	TWA	50 ppm 192 mg/m ³	2006/15/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
	108-88-3	STEL	100 ppm 384 mg/m ³	2006/15/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
	108-88-3	TWA	50 ppm 190 mg/m ³	CH SUVA
Further information	noise amplifying ototoxicity, The MAC-value of benzene (0.5 ppm; 1.6 mg/m ³) must be considered, Toxic by skin resorption possible; Substances, which are easily absorbed through the skin, can give by additional skin resorption a substantial higher risk compared to only inhalation by the airways., Substances which are possibly reprotoxic; the reprotoxicity affects the development of the unborn child., Substances which are possibly reprotoxic; the reprotoxicity affects the fertility and sexuality., National Institute for Occupational Safety and Health, Deutsche Forschungsgemeinschaft, Institut National de Recherche et de Sécurité pour la prévention des accidents du travail et des maladies professionnelles, Health and Safety Executive (Occupational Medicine and Hygiene Laboratory), Harm to the unborn child is not to be expected when the OEL-value is respected			
	108-88-3	STEL	200 ppm 760 mg/m ³	CH SUVA
Further information	noise amplifying ototoxicity, Toxic by skin resorption possible; Substances, which are easily absorbed through the skin, can give by additional skin resorption a substantial higher risk compared to only inhalation by the airways., Substances which are possibly reprotoxic; the reprotoxicity affects the development of the unborn child., Substances which are possibly reprotoxic; the reprotoxicity affects the fertility and sexuality., National Institute for Occupational Safety and Health, Deutsche Forschungsgemeinschaft, Institut National de Recherche et de Sécurité pour la prévention des accidents du travail et des maladies professionnelles, Health and Safety Executive (Occupational Medicine and Hygiene Laboratory), Harm to the unborn child is not to be expected when the OEL-value is respected			

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
toluene	108-88-3	hippuric acid: 2 g/g creatinine (Urine)	Immediately after exposition or after working hours, In case of long-term exposition: after more than one shift	CH BAT
		o-cresol: 0.5 mg/l (Urine)	Immediately after exposition or after working hours, In case of long-term exposition: after more than one shift	CH BAT
		toluol: 6.48 micromol per litre (Blood)	Immediately after exposition or after working hours	CH BAT
		hippuric acid: 1.26	Immediately after	CH BAT

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		micromoles per millimole creatinine (Urine)	exposition or after working hours, In case of long-term exposition: after more than one shift	
		o-cresol: 4.62 micromol per litre (Urine)	Immediately after exposition or after working hours, In case of long-term exposition: after more than one shift	CH BAT
		toluol: 600 µg/l (Blood)	Immediately after exposition or after working hours	CH BAT

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

Substance name	End Use	Exposure routes	Potential health effects	Value	
octan-1-ol	Workers	Dermal	Short-term exposure, Systemic effects	125 mg/kg	
	Workers	Inhalation	Short-term exposure, Systemic effects	220 mg/m ³	
	Workers	Dermal	Long-term systemic effects	125 mg/kg	
	Workers	Inhalation	Long-term systemic effects	220 mg/m ³	
	Consumers	Dermal	Short-term exposure, Systemic effects	75 mg/kg	
	Consumers	Inhalation	Short-term exposure, Systemic effects	65 mg/m ³	
	Consumers	Oral	Short-term exposure, Systemic effects	75 mg/kg	
	Consumers	Dermal	Long-term systemic effects	75 mg/kg	
	Consumers	Inhalation	Long-term systemic effects	65 mg/m ³	
	Consumers	Oral	Long-term systemic effects	75 mg/kg	
	calcium dodecylbenzenesulphonate	Workers	Dermal	Long-term systemic effects	1.7 mg/kg
		Consumers	Dermal	Acute systemic effects	85 mg/kg
Consumers		Oral	Long-term local effects	89 mg/kg	
toluene	Workers	Inhalation	Long-term systemic effects	192 mg/m ³	
	Workers	Dermal	Long-term systemic effects	384 mg/kg	
	Workers	Inhalation	Acute local effects	384 mg/m ³	
	Workers	Inhalation	Acute systemic effects	384 mg/m ³	
	Workers	Inhalation	Long-term local	192 mg/m ³	

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			effects	
	Consumers	Oral	Long-term systemic effects	8.13 mg/kg
	Consumers	Dermal	Long-term systemic effects	226 mg/kg
	Consumers	Inhalation	Acute systemic effects	226 mg/m3
	Consumers	Inhalation	Acute local effects	226 mg/m3
	Consumers	Inhalation	Long-term local effects	56.5 mg/m3
	Consumers	Inhalation	Long-term systemic effects	56.5 mg/m3

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

Substance name	Environmental Compartment	Value
octan-1-ol	Fresh water	0.2 mg/l
	Marine water	0.02 mg/l
	Fresh water sediment	2.1 mg/kg
	Marine sediment	0.21 mg/kg
	Soil	1.6 mg/kg
calcium dodecylbenzenesulphonate	Fresh water	0.023 mg/l
	Marine water	0.0023 mg/l
	Intermittent use/release	0.01 mg/l
	Fresh water sediment	0.174 mg/kg
	Marine sediment	0.0174 mg/kg
	Sewage treatment plant	3 mg/kg
toluene	Soil	0.62 mg/kg
	Fresh water	0.68 mg/l
	Marine sediment	16.39 mg/kg
	Sewage treatment plant	13.61 mg/l
	Intermittent release	0.68 mg/l
	Marine water	0.68 mg/l
	Fresh water sediment	16.39 mg/kg
Soil	2.89 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 protection : No special protective equipment required.

Hand protection

Material : Nitrile rubber

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Break through time : > 480 min
Glove length : 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.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

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 combination filter for vapour/particulate (EN 141)
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.

Filter type : Combined particulates and organic vapour type (A-P)

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 : clear to slightly turbid, liquid

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Colour	:	light brown to dark brown
Odour	:	characteristic
Odour Threshold	:	No data available
pH	:	4 - 8 Concentration: 1 % w/v
Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	84 °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	:	0.936 g/cm ³ (40 °C) 0.948 g/cm ³ (25 °C)
Solubility(ies)	:	
Solubility in other solvents	:	Miscible Solvent: Water
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	265 °C
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, dynamic	:	54.1 - 54.8 mPa.s (20 °C) 22.1 - 22.4 mPa.s (40 °C)
Viscosity, kinematic	:	22 mm ² /s (40 °C)
Explosive properties	:	Not explosive

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Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information

Surface tension : 32.4 mN/m, 20 °C

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, 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): > 4,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

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Components:

poly(oxy-1,2-ethanediyl), alpha-9-octadecenyl-omega-hydroxy-,(Z)-:

Acute oral toxicity : LD50 (Rat): 500 - 2,000 mg/kg

fluazifop-P-butyl (ISO):

Acute oral toxicity : LD50 (Rat, female): 2,451 mg/kg
Assessment: The component/mixture is minimally toxic after single ingestion.

LD50 (Rat, male): 3,680 mg/kg
Assessment: The component/mixture is minimally toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,110 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

octan-1-ol:

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

toluene:

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Skin corrosion/irritation

Product:

Species : Rabbit
Result : Mild skin irritation

Components:

fatty alcohol C16-C18 unsaturated:

Result : Skin irritation

fluazifop-P-butyl (ISO):

Species : Rabbit
Result : No skin irritation

calcium dodecylbenzenesulphonate:

Result : Irritating to skin.

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toluene:

Species : Rabbit
Result : Irritating to skin.

Serious eye damage/eye irritation

Product:

Species : Rabbit
Result : No eye irritation

Components:

poly(oxy-1,2-ethanediyl), alpha-9-octadecenyl-omega-hydroxy-,(Z)-:

Species : Rabbit
Result : Irreversible effects on the eye

fluazifop-P-butyl (ISO):

Species : Rabbit
Result : No eye irritation

octan-1-ol:

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

calcium dodecylbenzenesulphonate:

Result : Irreversible effects on the eye

Respiratory or skin sensitisation

Product:

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

Components:

fluazifop-P-butyl (ISO):

Species : Mouse
Result : May cause sensitisation by skin contact.

Germ cell mutagenicity

Components:

fluazifop-P-butyl (ISO):

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

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octan-1-ol:

Germ cell mutagenicity-Assessment : Animal testing did not show any mutagenic effects., In vitro tests did not show mutagenic effects

toluene:

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

Carcinogenicity

Components:

Distillates (petroleum), solvent-dewaxed heavy paraffinic; Baseoil -unspecified:

Carcinogenicity - Assessment : The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346 "Determination of polycyclic aromatics in unused lubricating base oils and asphaltene free petroleum fractions - Dimethyl sulphoxide extraction refractive index method", Institute of Petroleum, London. This note applies only to certain complex oil-derived substances in Part 3.

fluazifop-P-butyl (ISO):

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

octan-1-ol:

Carcinogenicity - Assessment : No information available.

toluene:

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

Reproductive toxicity

Components:

fluazifop-P-butyl (ISO):

Reproductive toxicity - Assessment : Embryo/foetoxic effects have been reported in rats.
,Developmental neurotoxicity has been observed in the absence of maternal toxicity.
,Some evidence of adverse effects on development, based on animal experiments.

octan-1-ol:

Reproductive toxicity - Assessment : No toxicity to reproduction

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toluene:

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

STOT - single exposure

Components:

toluene:

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

STOT - repeated exposure

Components:

toluene:

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

Repeated dose toxicity

Components:

fluazifop-P-butyl (ISO):

Remarks : No adverse effect has been observed in chronic toxicity tests.

Aspiration toxicity

Components:

Distillates (petroleum), solvent-dewaxed heavy paraffinic; Baseoil -unspecified:

May be fatal if swallowed and enters airways.

toluene:

May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 20 mg/l
Exposure time: 96 h
Remarks: Based on test results obtained with similar product.

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 20 mg/l

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aquatic invertebrates Exposure time: 48 h
Remarks: Based on test results obtained with similar product.

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.9 mg/l
Exposure time: 96 h

Components:

fatty alcohol C16-C18 unsaturated:

Ecotoxicology Assessment

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

poly(oxy-1,2-ethanediyl), alpha-9-octadecenyl-omega-hydroxy-,(Z)-:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1 - 10 mg/l
Exposure time: 96 h

Ecotoxicology Assessment

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

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

fluazifop-P-butyl (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.41 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1 mg/l
Exposure time: 48 h

EC50 (Americamysis bahia (Mysid shrimp)): 0.54 mg/l
Exposure time: 96 h

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.8 mg/l
Exposure time: 96 h

NOEC (Pseudokirchneriella subcapitata (green algae)): 1.8 mg/l
End point: Growth rate
Exposure time: 96 h

ErC50 (Navicula pelliculosa (Freshwater diatom)): 1.4 mg/l
Exposure time: 72 h

NOEC (Navicula pelliculosa (Freshwater diatom)): 0.34 mg/l
End point: Growth rate
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1

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Toxicity to fish (Chronic toxicity) : NOEC: 0.077 mg/l
Exposure time: 32 d
Species: Pimephales promelas (fathead minnow)
Test Type: Early-life Stage

M-Factor (Chronic aquatic toxicity) : 1

octan-1-ol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 10 - 100 mg/l

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10 - 100 mg/l

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 10 - 100 mg/l

Ecotoxicology Assessment

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

calcium dodecylbenzenesulphonate:

Ecotoxicology Assessment

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

toluene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 5.5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia dubia (water flea)): 3.78 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Chlorella vulgaris (Fresh water algae)): 134 mg/l
Exposure time: 3 h

12.2 Persistence and degradability

Components:

poly(oxy-1,2-ethanediyl), alpha-9-octadecenyl-omega-hydroxy-,(Z)-:

Biodegradability : Result: Readily biodegradable.

fluazifop-P-butyl (ISO):

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life: 1.5 - 1.7 h
Remarks: Product is not persistent.

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octan-1-ol:

Biodegradability : Result: Readily biodegradable.

toluene:

Biodegradability : Result: Readily biodegradable.

12.3 Bioaccumulative potential

Components:

fluazifop-P-butyl (ISO):

Bioaccumulation : Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: > 5.3 (25 °C)

toluene:

Bioaccumulation : Remarks: Does not bioaccumulate.

12.4 Mobility in soil

Components:

fluazifop-P-butyl (ISO):

Distribution among environmental compartments : Remarks: immobile

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

toluene:

Distribution among environmental compartments : Remarks: No data available

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:

fluazifop-P-butyl (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)..

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octan-1-ol:

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)..

toluene:

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

12.6 Other adverse effects

No data available

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

ADN : UN 3082
ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(FLUAZIFOP-P-BUTYL)

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ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(FLUAZIFOP-P-BUTYL)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(FLUAZIFOP-P-BUTYL)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(FLUAZIFOP-P-BUTYL)

IATA : Environmentally hazardous substance, liquid, n.o.s.
(FLUAZIFOP-P-BUTYL)

14.3 Transport hazard class(es)

ADN : 9

ADR : 9

RID : 9

IMDG : 9

IATA : 9

14.4 Packing group

ADN
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

ADR
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

RID
Packing group : III
Classification Code : M6
Hazard Identification Number : 90
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)

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

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:
(3)

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Distillates (petroleum), solvent-dewaxed heavy paraffinic; Baseoil - unspecified (28)

Other regulations:

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Article 13 Maternity ordinance (SR 822.111.52): Expectant and nursing mothers are only permitted to come into contact with this product during the course of their work if, based on a risk assessment carried out in accordance with Article 63 of Ordinance 1 on the Employment Act (ArGV 1) (SR 822.111), the chemicals in question have been found not to cause any specific harm to mothers or children or if such harm can be ruled out by taking appropriate protective measures.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

Article 4 para. 4 of the Ordinance on the protection of young people in the workplace (SR 822.115) and Article 1 lit. f of the EAER regulation on hazardous work and young people (SR 822.115.2): Young people undergoing basic vocational training may only work with this product if the relevant training ordinance makes provision for them to do so with a view to enabling them to achieve their training objectives and if the preconditions for the training plan have been met and the applicable age restrictions have been complied with. Young people who are not completing any basic vocational training are not permitted to work with this product. Employees of either sex who are under 18 years old are classed as young people.

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

H225	: Highly flammable liquid and vapour.
H302	: Harmful if swallowed.
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.
H319	: Causes serious eye irritation.
H336	: May cause drowsiness or dizziness.
H361d	: Suspected of damaging the unborn child.
H373	: May cause damage to organs through prolonged or repeated exposure.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

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Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Acute aquatic toxicity
Aquatic Chronic	:	Chronic aquatic toxicity
Asp. Tox.	:	Aspiration hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
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
2006/15/EC	:	Europe. Indicative occupational exposure limit values
CH BAT	:	Switzerland. List of BAT-values
CH SUVA	:	Switzerland. Limit values at the work place
2006/15/EC / TWA	:	Limit Value - eight hours
2006/15/EC / STEL	:	Short term exposure limit
CH SUVA / TWA	:	Time Weighted Average
CH SUVA / STEL	:	Short Term Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

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Further information

Classification of the mixture:

Skin Sens. 1	H317
Repr. 2	H361d
Aquatic Chronic 2	H411

Classification procedure:

Based on product data or assessment
Calculation method
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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