FUSILADE™ MAX

HERBICIDE

FUSILADE MAX PRODUCT USE

SUMMARY OF INFORMATION

FORMULATION AND ACTIVE INGREDIENT: Contains 125 g fluazifop-P-butyl per litre as an emulsifiable concentrate.
MAPP NUMBER: 11519.
PACK SIZE: 1 litre.
TARGETS: Control of wild-oats, volunteer cereals and other grass weeds, post-emergence in broad-leaved crops and other situations.
WATER VOLUME AND BCPC SPRAY QUALITY: 80 to 200 litres per hectare in open crops with light weed infestations as a FINE spray. 200 to 500 litres per hectare in dense crops or in dense weed situations as a MEDIUM spray. Apply through a conventional hydraulic sprayer using a pressure of 2–4 bars.

PRACTICAL NOTES:

CROPS	MAXIMUM INDIVIDUAL DOSE (LITRES PRODUCT/HA)	MAXIMUM NUMBER OF APPLICATIONS (PER CROP)	LATEST TIME OF APPLICATION
Oilseed rape (spring, industrial use)	1.5	1	2 weeks before harvest
Oilseed rape (winter, industrial use)	1.5	2	2 weeks before harvest
Oilseed rape (spring)	1.5	1	Before five true leaf stage.
Oilseed rape (winter)	1.5 and/or 1.0	1 1	Before visible (flower) bud stage
Carrot (outdoor use only)	3	1	8 weeks before harvest
Linseed	1.5	1	Before visible (flower) bud stage.
Bulb onion (outdoor use only)	3	1	4 weeks before harvest
Vining pea, combining pea.	1.5	1	Before visible (flower) bud stage
Outdoor crops of: Blackcurrant, gooseberry, raspberry, strawberry, hops	3	1 per annum	Applications to blackcurrant, gooseberry, raspberry, hops and strawberry must not be made between flowering and harvest in the season of application
Kale (for animal fodder)	3	1	8 weeks before harvest or feeding
Swede (for animal fodder), turnip (for animal fodder)	3	1	Before 50% ground cover
Field bean	3	1	Before visible (flower) bud stage
Sugar beet, fodder beet	3	Max total dose: 3.0 litres product/hectare	8 weeks before harvest
Green cover on land temporary removed from production	1.5	1 per annum	–
Farm forestry	3	2 per annum	–

RAINFASTNESS: Within 1–2 hours of application.
BUFFER ZONE RESTRICTIONS: None.
FOR USE ONLY AS: AN AGRICULTURAL/HORTICULTURAL/FORESTRY HERBICIDE.

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COMPATIBILITY

The following tank mixes have been tested for physical compatibility with FUSILADE MAX at recommended rates of use and will mix in the sprayer tank. No tests have been undertaken on crop safety or product performance. Use is at the user's own risk. Syngenta Crop Protection will support 2 and 3-way tank mixes of FUSILADE MAX with any of the fungicides, herbicides or insecticides listed. For further information on compatibilities contact Syngenta Crop Protection on 0800 169 6058.

FUNGICIDES

AMISTAR	Folicur[1]	Ronilan FL
Bavistin DF	FOLIO GOLD	Rovral Flo
BRAVO 500	PLOVER	Sportak 45EW
Carbendazim	Punch C[2]	THIOVIT JET[3]

HERBICIDES

Barclay Goalpost	Dow Shield	Propyzamide 50%WP
Betanal Carrera	Goltix WG	Propyzamide 80% w/w
Betanal Flo	Katamaran	Twin
Butisan S	Kerb 50W	Venzar Flo
Debut	Nortron Flo	

INSECTICIDES

APHOX	Decis	HALLMARK WITH ZEON TECHNOLOGY[4]
Contest	DOVETAIL	STEALTH[4]
Cyperkill 10	Fastac	
Cypermethrin	Fury 10EW	

TRACE ELEMENTS

Syngenta Crop Protection will support the tank mixing of any of the named trace elements with an existing 3-way tank mix including FUSILADE MAX. Syngenta Crop Protection advise that the trace element part of the tank mix is added to the sprayer tank last with constant agitation and the mixture is sprayed without delay.

Magnesium sulphate	Manganese sulphate

NOTE(S)

Before using any tank mixture, consult and comply with the recommendations of the partner products. Each product should be added separately to the bulk of the water in the spray tank and thoroughly mixed before adding the next chemical. Always use constant agitation of the sprayer tank during mixing, transportation and application. Spray immediately.

[1] Folicur at max 0.5 l/ha

[2] Punch C at max 0.4 l/ha

[3] Constant agitation required

[4] Continuous agitation required. Add STEALTH/HALLMARK with ZEON TECHNOLOGY to the spray tank last.

FUSILADE MAX is INCOMPATIBLE with Carbetamex and Benazalox.

GENERAL INFORMATION

FUSILADE MAX containing fluazifop-P-butyl is a herbicide for control of wild-oats, volunteer cereals and other grass weeds, post-emergence in broad-leaved crops and other situations.

FUSILADE MAX is rapidly absorbed through the leaves and moves upwards and downwards throughout the plant to the growing points. FUSILADE MAX is effective against both annual and perennial grass weeds including Common Couch. Decay of the growing points in stems is visible after 7 days. Foliar kill is complete in 3–4 weeks when weeds are actively growing under warm conditions.

FUSILADE MAX is independent of soil type as it acts through the foliage.

CROPS AND SITUATIONS

FUSILADE MAX may be used in the following crops and situations:

COMBINABLE CROPS	Winter oilseed rape, Spring oilseed rape, Winter and Spring oilseed rape for industrial use, Linseed, Flax, Linseed and Flax for industrial use, Field beans, Vining and dried peas.
ROOT CROPS	Sugar and Fodder beet, Carrots, Stockfeed swede and Stockfeed turnip
FRUIT CROPS	Blackcurrants, Gooseberries, Raspberries and Strawberries
OTHER CROPS	Hops, Onions and Stockfeed kale
FARM FORESTRY	Hardwood and coniferous trees established on land previously under arable cultivation or improved grassland.
OTHER SITUATIONS	Non-cropped field margins (boundary strips), removal of green cover on land temporarily removed from production (set-aside) and removal of barley cover crops drilled to protect crops from wind-blow.

RESTRICTIONS

Consult processors before treating crops intended for processing.

Avoid drift and possible damage to neighbouring crops. Do not spray in windy weather, especially if applying a FINE spray when the risk of drift is increased.

Cereal or grass crops should not be sown for at least 8 weeks after application of the 3 litres per hectare rate or at least 2 weeks after application of the 1–1.5 litres per hectare rates.

Annual Meadow-grass and broad-leaved weeds are not controlled.

Weeds germinating after application will not be controlled.

FUSILADE MAX is rainfast within 1–2 hours of application.

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WEEDS CONTROLLED

The following weeds are controlled by post-emergence applications at the rates given below. Refer also to the crop recommendations for the maximum recommended rate in each crop.

WEED TYPE/SPECIES	APPLICATION RATE* (LITRES PRODUCT/HECTARE)	WEED GROWTH STAGE
ANNUAL GRASS WEEDS Black-grass Barren (Sterile) Brome Volunteer Cereals Wild-oats	1 or 1.5	2 expanded leaves to fully tillered. The higher rate will give more rapid and reliable control of well tillered weeds
Barley cover crops	1 or 2.0	See notes below on cover crops
PERENNIAL GRASS WEEDS Italian Ryegrass Perennial Ryegrass	1.5	2 expanded leaves to fully tillered
Black Bent Creeping Bent (Watergrass) Common Couch	3	4 leaves. The majority of stems should have emerged

CROP SPECIFIC INFORMATION

RATES OF USE AND SPRAY TIMING

RATES OF APPLICATION	TIMING OF APPLICATION (CROP GROWTH STAGE)	NOTES
BLACKCURRANTS, GOOSEBERRIES, HOPS, RASPBERRIES, STRAWBERRIES		
1–3 l/ha	Before flowering or after harvest	Where possible, a directed spray should be used
CARROTS		
1–3 l/ha	From 2 true leaf stage until 8 weeks before harvest	Best results with applications made before 50% ground cover
FARM FORESTRY		
1–3 l/ha	See Farm Forestry Section for details	Trees are most sensitive immediately after bud burst/flushing. Overall or directed sprays can be used but it is not advisable to apply overall when trees are at bud burst/flushing and before new foliage has hardened in the Spring
FIELD BEANS		
1–3 l/ha	From second node stage but before first flower bud visible	
KALE (STOCKFEED ONLY)		
1–3 l/ha	From 4 true leaf stage until 50% crop ground cover	A slight crop check may occur together with some de-waxing, but this is soon outgrown

LINSEED, FLAX		
1–1.5 l/ha	From 2 true leaf stage (GS4) to stem extension 20 cm in height and before visible (flower) buds stage (GS6)	At these rates common couch will be suppressed
LINSEED AND FLAX USED AS AN INDUSTRIAL CROP		
1–1.5 l/ha	From 2 true leaf stage (GS4) to stem extension 20 cm in height and before visible (flower) buds stage (GS6)	At these rates common couch will be suppressed
SPRING OILSEED RAPE		
1–1.5 l/ha	From 1 true leaf to before 5 true leaves. Crops may be treated at the cotyledon stage if there is severe weed competition	At these rates common couch will be suppressed
WINTER OILSEED RAPE (INCLUDING FOR USE AS AN INDUSTRIAL CROP)		
1–1.5 l/ha	From 1 true leaf to before visible (flower) bud stage. Crops may be treated at the cotyledon stage if there is severe weed competition	At these rates common couch will be suppressed. For the control of late emerging grass weeds a further application of 1.0 litre per hectare may be applied in the Spring. Allow crop to recover from any de-waxing before second application
SPRING OILSEED RAPE USED AS AN INDUSTRIAL CROP		
1–1.5 l/ha	From 1 true leaf but before crop shading masks the target weeds. Crops may be treated at the cotyledon stage if there is severe weed competition	At these rates common couch will be suppressed
ONIONS *		
1–3 l/ha	From 2 true leaf stage until 4 weeks before harvest*	May be used in Autumn or Spring provided weeds are actively growing
VINING AND DRIED PEAS *		
1–1.5 l/ha	From fourth node stage but before 1st flower visible*	At these rates common couch will be suppressed
SUGAR AND FODDER BEET		
1–3 l/ha**	From 1 true leaf stage to approximately 50% ground cover, but not later than 8 weeks before harvest	Where two applications are required for very severe common couch infestations, the second application should be made when grass is at the 3–4 leaf stage but before crop cover exceeds 50%
SWEDE (STOCKFEED ONLY)		
1–3 l/ha	From 4 true leaf stage until 50% crop ground cover	A slight check to growth, crinkling of foliage and de-waxing may occur which is soon outgrown
TURNIPS (STOCKFEED ONLY)		
1–3 l/ha	From 4 true leaf stage until 50% crop ground cover	A slight check to growth, crinkling of foliage and de-waxing may occur which is soon outgrown

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NON-CROPPED FIELD MARGINS (BOUNDARY STRIPS)		
1–1.5 l/ha	1 per year. Non-cropped field margins apply November, December. Boundary strips apply Autumn or Spring. Consult conservation adviser before use	For control of barren brome and other grass weeds in non-cropped field margins. For establishing sown fescue and flower mix boundary strips, apply before grass weeds become competitive. For managing sown or naturally re-generated boundary strips, treat when necessary to control grass weeds and maintain species diversity. For details of weed susceptibilities see Non-cropped Field Margin (Boundary strips) section below.
REMOVAL OF GREEN COVER ON LAND TEMPORARILY REMOVED FROM PRODUCTION (SET-ASIDE)		
1–1.5 l/ha	1 per year. Late Autumn or early Spring. Do not apply if insufficient green cover will remain. Do not apply where the green cover is predominantly cereal volunteers.	For the control of barren brome, black-grass, cereal volunteers and other grass weeds in one year or long term naturally re-generating cover or where a specific fescue and flower mix has been sown. Do not apply if cover is to be grazed by livestock or harvested for human consumption. For details of weed susceptibilities see Non-cropped Field Margin (Boundary strips) section below.

NOTES

1. Use rates according to weed species present (see weed control table).
2. * Before using in onions and vining or dried peas check that there is sufficient leaf wax using the crystal violet test. When in doubt and where the wax is insufficient or damaged do not spray. Use the crystal violet test as a routine before sequentially applying herbicides.
3. Before using this product on land taken out of production as part of a grant aided scheme, ensure compliance with the management rules of that scheme.

FARM FORESTRY

FUSILADE MAX may be applied by tractor-mounted sprayer as an overall or band treatment in farm forestry. A total of 6 litres of FUSILADE MAX per hectare per year may be applied. The following tree species are tolerant to FUSILADE MAX at any interval after planting, when dormant or in leaf:

BROAD LEAVED	CONIFEROUS
Alder	Japanese Larch
Ash	Silver Fir
Beech	Douglas Fir
Elm	Cypress
Common Oak	Blue Spruce
Sycamore	Norway Spruce
Willow	Sitka Spruce
Maple	Pine
	Thuja
	Noble Fir

TIMING OF APPLICATION

The timing of application is determined by the growth stage of the target weed (see weed control table above). A second application at 3 l/ha may be applied to control severe common couch infestations. FUSILADE MAX is not recommended for the destruction of established grass swards.

Overall or directed sprays can be used but it is not advisable to apply overall when trees are at bud burst/flushing and before new foliage has hardened in the spring. Do not apply FUSILADE MAX during periods of bright sunlight or high temperatures as this may lead to foliage scorch. If applications are needed in mid summer then they should be made in the evening. Do not apply FUSILADE MAX when the ground is waterlogged or the trees are under stress from drought.

NON-CROPPED FIELD MARGINS (BOUNDARY STRIPS)

FUSILADE MAX at rates between 1–1.5 litre per hectare will control many of the important grass weeds (barren brome, black-grass and wild-oats) which can adversely affect the establishment or maintenance of sown or naturally regenerating boundary strips. FUSILADE MAX is safe to annual and perennial dicotyledonous (broad-leaved) species and a range of Festuca species. However, FUSILADE MAX can reduce the frequency of a number of other non-target grasses.

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The following table lists the species that are known to be RESISTANT to FUSILADE MAX at rates between 1 and 1.5 l/ha.

Annual and perennial dicotyledonous species	– All
Crested Dogstail	*Cynosurus cristatus*
Sheeps Fescue	*Festuca ovina*
Hard Fescue	*Festuca longifolia*
Chewings Fescue	*Festuca rubra spp commutata*
Red Fescue	*Festuca rubra spp purinsoa*
Fine-leaved Sheeps Fescue	*Festuca tenuifolia*
Annual Meadow-grass	*Poa annua*

The dynamics and manipulation of species populations in the boundary strip is complex. The wrong timing of both cultural and chemical treatments can have an adverse affect on non-target species. If in doubt, always consult your conservation advisor before using FUSILADE MAX in this situation.

COVER CROPS

Spray when the risk of wind blow has passed and before there is serious competition with the crop. To remove cover crops, use 1.0 litre per hectare except where any of the following factors apply, then 2.0 litres per hectare must be used:-

- where spraying is late and a quick kill is required to avoid competition.
- where the cover crop is drilled overall.
- where the cover crop is well developed, i.e. leaf sheath erect stage or later.
- where the crops are under moisture stress.

Note: Where a significant grass weed problem is present, the rate appropriate to the weed species must be used if this is higher than the rate required for cover crop removal.

USE IN PROGRAMMES

FUSILADE MAX may be used in programmes with herbicides approved for the relevant crop, provided there is a 7 day interval between applications. Ensure herbicide sensitive crops are unaffected and actively growing before treatment.

FUSILADE MAX may be used in programmes with low volume, low dose sprays in sugar beet, provided there is a 3 day interval between applications.

FUSILADE MAX may be used in programmes with 'Benazolox' (benazolin/clopyralid) in oilseed rape, provided there is a 14 day interval between applications.

MIXING AND SPRAYING

MIXING

Half fill the spray tank with CLEAN water and start agitation. Shake the container and add the correct amount of FUSILADE MAX to the sprayer using a filling device (e.g. induction hopper) or by direct addition to the spray tank. Complete filling and agitate thoroughly. Continue agitation during spraying and stoppages.

Wash out container thoroughly. Preferably use an integrated pressure rinsing device or manually rinse three times. Add washings to the sprayer at the time of filling.

Dispose of rinsed containers safely according to DEFRA /HSE Code of Practice.

VOLUME OF WATER

Even cover of the weeds is essential for good results.

80 to 200 litres per hectare may be used in open crops with light weed infestations.

200 to 500 litres per hectare should be used in dense crop or in dense weed situations.

APPLICATION METHODS

Even cover of the weeds is essential for good results. Apply through a conventional hydraulic sprayer using a pressure of 2–4 bars. **For spray volumes 80 to 200 litres per hectare apply as a FINE spray. For spray volumes above 200 litres per hectare apply as a MEDIUM spray.**

Ensure that the sprayer is properly cleaned and washed before use, spray contamination may damage crops.

Correctly calibrate sprayer before use. Do not leave spray liquid in the sprayer for long periods (i.e. during meals or overnight).

Application by air or through controlled droplet application equipment is not permitted.

BAND SPRAYING

FUSILADE MAX may be applied through a standard band sprayer for the control of annual grass weeds. Common couch may be treated but re-growth from untreated band may reduce efficacy.

AFTER USE

Wash equipment thoroughly after use with AGRAL and water at a ratio of 50 ml AGRAL to 100 litres of water.

DO NOT RE-USE CONTAINER FOR ANY PURPOSE.

COMPANY ADVISORY INFORMATION

OPTIMUM CONTROL OF WEEDS

For best release from early competition use FUSILADE MAX at the earliest recommended time.

Speed of kill will be more rapid when weeds are actively growing under warm conditions and with adequate soil moisture. Treatment under cool conditions will give slower activity. In poor growing conditions use the higher rate for more rapid and reliable control.

Couch control is best when the rhizomes have been fragmented by cultivation or seedbed preparation. This encourages maximum emergence of couch shoots providing a good actively-growing target for the FUSILADE MAX spray. In perennial crops, where the rhizomes are left undisturbed regrowth may occur from dormant buds.

Under dry conditions control of weeds may be reduced. For maximum effect on common couch do not cultivate for 2 weeks after spraying.

The effects of FUSILADE MAX on overwintered weeds have not been investigated.

RESISTANCE MANAGEMENT

Strains of some annual grasses (e.g. black-grass, wild-oats and Italian rye-grass) have developed resistance to herbicides which may lead to poor control. A strategy for preventing and managing such resistance should be adopted. Guidelines have been produced by the Weed Resistance Action Group and copies are available from the HGCA, CPA, your distributor, crop advisor or product manufacturer.

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This product is to be used only in accordance with the recommendations and instructions given on the labels provided with this pack. Use in any other circumstances is entirely at user's risk.

SAFETY PRECAUTIONS

(a) Operator protection

* Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:
* WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.
* WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) when applying by vehicle-mounted equipment.
* WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND RUBBER BOOTS when applying by hand-held equipment.
* WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS) AND SUITABLE PROTECTIVE GLOVES when adjusting or maintaining equipment or handling contaminated surfaces.
* However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WHEN USING, DO NOT EAT, DRINK OR SMOKE.

WASH CONCENTRATE from skin or eyes immediately.

WASH HANDS AND EXPOSED SKIN before meals and after work.

(b) Environmental Protection

DO NOT CONTAMINATE SURFACE WATERS OR DITCHES WITH CHEMICAL OR USED CONTAINER.

(c) Storage and disposal

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinse three times. Add washings to sprayer at time of filling and dispose of safely.

FUSILADE MAX

HARMFUL

DANGEROUS FOR THE ENVIRONMENT

Emulsifiable concentrate containing 125g fluazifop-P-butyl per litre

IRRITATING TO SKIN.

POSSIBLE RISK OF HARM TO THE UNBORN CHILD.

VERY TOXIC TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

Keep out of the reach of children.

Keep away from food, drink and animal feeding stuffs.

Wear suitable protective clothing and gloves.

When using do not eat, drink or smoke.

This material and its container must be disposed of in a safe way.

Use appropriate containment to avoid environmental contamination.

To avoid risks to man and the environment, comply with the instructions for use.

THE (COSHH) CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH REGULATIONS MAY APPLY TO THE USE OF THIS PRODUCT AT WORK

COMPLIANCE WITH THE FOLLOWING CONDITIONS OF USE AND ALL PRECAUTIONS MARKED * IS A LEGAL REQUIREMENT

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL/FORESTRY HERBICIDE

CROP	Maximum individual dose (l/ha)	Maximum number of treatments	Latest time of application
Oilseed rape (spring, industrial use)	1.5	1 per crop	2 weeks before harvest
Oilseed rape (winter, industrial use)	1.5	2 per crop	2 weeks before harvest
Oilseed rape (spring)	1.5	1 per crop	Before five true leaf stage
Oilseed rape (winter)	1.5 and/or 1.0	1 per crop	Before visible (flower) bud stage
Carrot (outdoor use only)	3	1 per crop	8 weeks before harvest
Linseed	1.5	1 per crop	Before visible (flower) bud stage
Bulb onion (outdoor use only)	3	1 per crop	4 weeks before harvest

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CROP	Maximum individual dose (l/ha)	Maximum number of treatments	Latest time of application
Vining pea, combining pea	1.5	1 per crop	Before visible (flower) bud stage
Outdoor crops of: Blackcurrant, gooseberry, raspberry, strawberry, hops	3	1 per annum	See "other specific restriction 2"
Kale (for animal fodder)	3	1 per crop	8 weeks before harvest or feeding
Swede (for animal fodder), turnip (for animal fodder)	3	1 per crop	Before 50% ground cover
Field bean	3	1 per crop	Before visible (flower) bud stage
Sugar beet, fodder beet	Maximum total dose: 3.0 litres of product/ hectare/crop	–	8 weeks before harvest
Green cover on land temporarily removed from production	1.5	1 per annum	–
Farm forestry	3	2 per annum	–

Other specific restrictions:

1) Applications to blackcurrant, gooseberry, raspberry, hops and strawberry must not be made between flowering and harvest in the season of application.
2) Industrial oilseed rape, linseed and flax must not be harvested for human or animal consumption nor grazed.
3) When applying in farm forests this product must not be used for forestry establishment on land that was not previously under arable cultivation or improved grassland.
4) When applying to non-cropped field margins and/or green cover on land temporarily removed from production:
   a Treated vegetation must not be grazed or harvested for human or livestock consumption.
   b Unprotected persons must be kept out of the treated areas for at least 24 hours after treatment.
   c A full green cover must be established before the pesticide is applied.

READ ALL OTHER SAFETY PRECAUTIONS AND DIRECTIONS BEFORE USE.

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY OR UNDERTAKING

IDENTIFICATION OF THE SUBSTANCE OR PREPARATION

Tradename **FUSILADE MAX**
Design Code **YF11054 / A12791B**
AGI Code **1003202**

COMPANY IDENTIFICATION

Company Syngenta Crop Protection UK Ltd
Whittlesford, CAMBRIDGE, CB2 4QT
Phone (01223) 833621
Fax (01223) 493700
Website www.syngenta-crop.co.uk
Emergency Phone 0044 (0)1484 538444 (24h)

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL CHARACTERISTIC

Formulation type An emulsifiable concentrate with wetting agents.
Use A post emergence herbicide.
Active ingredient(s) 12.5% w/v Fluazifop-p-butyl

HAZARDOUS COMPONENTS

CAS-NO.	HAZARDOUS INGREDIENTS	CONCENTRATION (% W/V)	HAZARD SYMBOLS	RISK PHRASES
79241-46-6	Fluazifop-p-butyl (Classification according to Directive 67/548/EEC)	12.5	Xn, N	63-50/53–10
111-87-5	Octan-1-ol	10	Xi	36/38
143-28-2	Oleyl alcohol	< 50	Xi	38
78-83-1	Calcium alkyl benzene sulphonate	< 10	Xi	10–36/38

EC-No.: 203-917-6 Octan-1-ol
EC-No.: 205-597-3 Oleyl alcohol

3. HAZARDS IDENTIFICATION

Possible risk of harm to the unborn child. A mild irritant to eyes. An irritant to skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST-AID MEASURES

Eye Contact: Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.

Ingestion: If swallowed seek medical advice immediately and show the container, label or this Data Sheet, if possible. Do not induce vomiting.

Skin Contact: Take off immediately all contaminated clothing. Wash skin immediately with water, followed by soap and water. Such action is essential to minimise contact with skin. Contaminated clothing should be laundered before re-issue.

Inhalation: Remove patient from exposure, keep warm and at rest. Obtain medical attention as a precaution.

MEDICAL ADVICE

If the amount of chemical is judged to be less than a lethal dose, observe the patient and treat symptomatically. If gastric lavage is considered necessary, prevent aspiration of gastric material. Consider administration of activated charcoal and a laxative.

5. FIRE-FIGHTING MEASURES

Keep fire exposed containers cool by spraying with water.

Extinguishing media: For small fires, use foam, carbon dioxide or dry powder extinguishant. For large fires, use foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers.

Protective Equipment: A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Ensure suitable personal protection during removal of spillages. This means wearing eye protection, chemically resistant gloves, boots and coveralls. See Also Section 8.

Clean up methods: Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Wash the spillage area with water. Washings must be prevented from entering surface water drains.

Spillages or uncontrolled discharges into water courses must be alerted to the appropriate regulatory body.

7. HANDLING AND STORAGE

HANDLING

Read the label before use.

Safe handling advice: Avoid contact with skin and eyes. When using do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking.

STORAGE

Safe storage advice: Keep in original containers, tightly closed, out of reach of children. Keep away from food, drink and animal feeding stuffs.

Storage life: Stable at 40°C, 6 months.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits Hazardous Ingredient, Syngenta Internal OEL

Fluazifop-p-butyl 8 hr TWA 0.5 mg/m³

Not applicable to field use.

PERSONAL PROTECTIVE EQUIPMENT

When using this product refer to the label for details. In all other cases, use the following Personal Protective Equipment:

Where suitable engineering controls are not fitted or are inadequate, wear suitable protective equipment. When selecting personal protective equipment, users should consult their supplier to confirm that the equipment is suitable.

Respiratory protection: Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. Respiratory protective equipment should conform to the appropriate EN standard.

Eye protection: Wear suitable eye/face protection conforming to EN 166.

Hand protection: Wear suitable gloves conforming to EN 374. Suitable materials: nitrile rubber.

Body protection: Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Colour:	Dark brown.
Physical State:	Liquid.
Solidification Point:	Not available.
Boiling Point/Range:	Not available.
Flash-Point:	89 °C +/- 2 (closed cup).
Odour:	Faint alcohol-like.
Oxidizing Properties:	Non-oxidising.
Explosive Properties:	Non-explosive.
Density:	0.936 g/ml at 20 °C.
pH Value:	6.6 (1 % aqueous suspension at 25 °C).
Surface Tension:	33.6 mN/m at 23.5 °C.
Miscibility with water:	Miscible.
Viscosity:	52.6 cSt at 54 °C.

10. STABILITY AND REACTIVITY

Hazardous decomposition products: Combustion or thermal decomposition will evolve toxic and irritant vapours.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY

LD_{50}: > 2000 mg/kg (rat, both genders) Low oral toxicity.

ACUTE DERMAL TOXICITY

LD_{50}: 2000 mg/kg (rat, both genders)(Limit dose – no deaths) Unlikely to be hazardous by skin absorption.

ACUTE INHALATION TOXICITY

Unlikely to cause harmful effects when handled and used as directed on the label.

Acute Skin Irritation: Mild irritant to rabbit skin.

Acute Eye Irritation: Mild irritant to rabbit eyes.

Skin Sensitisation – Buehler: It is a mild skin sensitiser in animal tests.

CHRONIC TOXICOLOGICAL EFFECTS / LONG-TERM EXPOSURE

Long-Term Exposure: Embryo/foetoxic effects have been reported in rats. This is not considered to be a risk to man when handled and used as directed on the label.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND DISTRIBUTION

Information applies to: Fluazifop-p-butyl

The substance is sparingly soluble in water. The substance has low mobility in soil.

BIOACCUMULATIVE POTENTIAL

Information applies to: Fluazifop-p-butyl

The substance has potential for bioaccumulation. However, it is rapidly metabolised and eliminated from fish (97% within 3 days).

PERSISTENCE AND DEGRADATION

Information applies to: Fluazifop-p-butyl

There is evidence of rapid hydrolysis in water and soil to the parent acid, which also rapidly degrades and is of lower intrinsic toxicity.

ECOTOXICITY

Toxicity to Fish

LC_{50}: 20 mg/l (*Salmo gairdneri* (Rainbow trout); 96 h; Static conditions)

Toxicity to Algae

EbC_{50}: 230 µg/l (green algae; 72 h)
ErC_{50} 840 µg/l (green algae; 72 h)

Toxicity to Aquatic Invertebrates

EC_{50}: 20 mg/l (*Daphnia magna* (water flea); 48 h)

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Do not contaminate ponds, waterways or ditches with chemical or used containers. Surplus material must be disposed of as detailed in the 'Guidelines for the avoidance, limitation and disposal of pesticide waste on the farm' GCPF, 1987. Empty containers should be washed and discarded. Empty containers should not be used for other purposes. Disposal should be in accordance with local, state or national legislation.

14. TRANSPORT INFORMATION

Special Information: Use unbreakable containers, make sure they cannot fall, and label in accordance with regulations.

RAIL / ROAD (RID / ADR)	Class	UN no.	Packaging Group
	9	3082	III
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., FLUAZIFOP-P-BUTYL MIXTURE		

SEA (IMDG-CODE)	Class	UN no.	Packaging Group
	9	3082	III
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (contains fluazifop-p-butyl 12.5%)		
Marine pollutant	yes		
AIR (ICAO / IATA)	Class	UN no.	Packaging Group
	9	3082	III
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (contains fluazifop-p-butyl 12.5%)		

15. REGULATORY INFORMATION

Hazard symbols/ Classifications	**N**	**DANGEROUS FOR THE ENVIRONMENT.**
	Xn	HARMFUL.
Risk phrases (R)	38	Irritating to skin.
	50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
	63	Possible risk of harm to the unborn child.
Safety phrases (S)	2	Keep out of the reach of children.
	13	Keep away from food, drink and animal feeding stuffs.
	20/21	When using do not eat, drink or smoke.
	35	This material and its container must be disposed of in a safe way.
	36/37	Wear suitable protective clothing and gloves.
	57	Use appropriate containment to avoid environmental contamination.
Special label		To avoid risks to man and the environment, comply with the instructions for use.

This preparation is covered by the EEC Dangerous Preparations Directive. It has therefore been labelled in accordance with these regulations. Users should ensure that they comply with any relevant local, state or national legislation.

16. OTHER INFORMATION

Always read the label. Use pesticides safely.

Based upon SDS date of issue: 25/04/02, Version 5. Significant changes in sections 3 & 15.

Product registration number: MAPP 11519

This data sheet was prepared in accordance with Directive 91/155/EEC (93/112/EC, 2001/58/EC).

The information on this sheet is not a specification, it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage and use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.