

DUPLOSAN® KV

PEEL BACK FOR DIRECTIONS FOR USE LEAFLET

A herbicide for the control of a wide range of broad leaved weeds, including cleavers and common chickweed, in winter and spring sown cereals and amenity grassland. A soluble concentrate formulation containing 600 g/l mecoprop-P (48.2% w/w) formulated as potassium salt.

Safety Information



DANGER

Harmful if swallowed.

Causes skin irritation.

Causes serious eye damage.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Rinse mouth.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: get medical advice/ attention.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Dispose of contents/container to a licensed waste disposal contractor or collection site except for empty triple rinsed containers which can be disposed of as non-hazardous waste.

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

PCS No. 02842

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL HERBICIDE

Crop	Maximum Application Rate(L product/ha)	Maximum total dose (L product/ha)	Latest time of application
Winter Wheat, Winter Barley, Winter Oats	2.3	2.3 per crop	Before 3 rd node detectable stage (GS 33)
Spring Wheat, Spring Barley, Spring Oats	2.3	2.3 per crop	Before 1 st node detectable stage (GS 31)
Amenity Grassland	2.3	4.6 per year	-

Applications to cereals must not be made between 1 October and 1 March

Method of application: Tractor mounted/trailed sprayer

SAFETY PRECAUTIONS

Operator Protection

IF YOU FEEL UNWELL, seek medical advice (show label where possible).

WEAR SUITABLE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

WASH CONCENTRATE from skin or eyes immediately.

WASH HANDS AND EXPOSED SKIN before meals and after work.

Environmental Protection

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).

Storage and Disposal

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

WASH OUT CONTAINER THOROUGHLY, empty washings into spray tank, and dispose of safely.

DO NOT RE-USE CONTAINER.

Nufarm UK Limited, Wyke Lane, Wyke, Bradford, West Yorkshire BD12 9EJ. UK.

Technical Helpline telephone number: +44 (0)1274 694714

24-hour emergency telephone number: +44 (0)1274 696603

5 Litres e

PROTECT FROM FROST.
FOR PROFESSIONAL USE ONLY.

B0808-001 1216



Grow a better tomorrow.

DIRECTIONS FOR USE

DUPLOSAN KV is a hormone herbicide which is absorbed by both shoots and roots and rapidly translocated within herbaceous plants. Apply as a **MEDIUM** spray as defined by BCPC.

The best weed control will be achieved if crops are sprayed in conditions when weeds are actively growing, provided the crop is within the correct growth stages, see below.

This is particularly important when DUPLOSAN KV is used in the spring to control large autumn germinated cleavers, which may have become 'winter hardened.'

WEEDS CONTROLLED

Weed species	Application rate (L product/ha)		
	1.5	2.0	2.3
Chickweed, Common*	S		
Fat-hen	S		
Pennycress, Field	S		
Buttercup, Corn	-	MS	
Charlock	-	S	
Cleavers	-	S	
Mouse-ear, Common	-	S	
Mustard, Black	-	S	
Mustard, Treacle	-	S	
Mustard, White	-	S	
Nettle, Small	-	S	
Plantain, Greater	-	S	
Plantain, Ribwort	-	S	
Radish, wild	-	S	
Shepherd's-purse	-	S	
Black-bindweed	-		MR
Buttercup, Creeping	-		SP
Campion, White	-	-	SP
Cranesbill, Cut-leaved	-	-	MR
Cranesbill, Dove's-foot	-	-	MS
Deadnettle, Red	-	-	MS
Docks	-	-	SP
Forget-me-not, Field	-	-	R

Weed species	Application rate (L product/ha)		
	1.5	2.0	2.3
Fumitory, Common	-	-	MS
Groundsel	-	-	MR
Hempnettle, Common	-	-	MR
Knotgrass	-	-	MR
Marigold, Corn	-	-	R
Mayweed, Scented	-	-	R
Mayweed, Scutless	-	-	MR
Nightshade, Black	-	-	MR
Oilseed Rape, Volunteer	-	-	S
Orache	-	-	MS
Pansy, Field	-	-	R
Persicaria, Pale	-	-	MR
Pimpernel, Scarlet	-	-	MR
Poppy, Common	-	-	MR
Redshank	-	-	MR
Sowthistle, Perennial	-	-	SP
Sowthistle, Prickly	-	-	MS
Sowthistle, Smooth	-	-	MR
Speedwell, Common Field	-	-	MS
Speedwell, Ivy-leaved	-	-	MS
Thistle, Creeping	-	-	SP
Turnip, Wild	-	-	MS
Viper's Bugloss	-	-	MR

*Control of chickweed at 1.5 L/ha rate in cereals due to the competitive nature of the cereal crop. Common chickweed will be controlled up to 15 cm diameter by Duplosan KV at 2.3 L/ha. 2.3 L/ha is only to be used in Amenity Grassland.

S - Susceptible: controlled from cotyledon to 2 true leaf stage at 1.5 L/ha and 2.0 L/ha; controlled from cotyledon to 6 true leaf stage (or 5 cm across or high) by 2.3 L/ha.

MS - Moderately susceptible: controlled from cotyledon up to 2 true leaves but only checked up to 6 true leaves or 5 cm across or high.

MR - Moderately resistant: checked at cotyledon to 2 true leaves only.

SP - Top growth suppressed when sprayed with 2.3 litres/ha Duplosan KV if appreciable foliage is present. Seedlings (cotyledon 2 true leaves) will also be controlled.

R - Resistant: no useful effect.

CROP SPECIFIC INFORMATION

WINTER WHEAT, BARLEY and OATS

Rate of Application: 2.3 L product/ha.

For autumn applications or in spring-applied mixtures with specific herbicides (see mixtures section below), apply a maximum of 2.0 litres DUPLOSAN KV per hectare.

Time of Application: From one leaf stage in the autumn to before third node detectable stage. Spring application may follow autumn treatment. Once tillering has begun, winter cereals become susceptible to damage from Mecoprop-P until the leaf sheath erect stage is reached.

Late spraying: Where spraying has been unavoidably delayed, DUPLOSAN KV may be applied up to and including the second node detectable stage. Applications at this timing may result in poorer weed control and also the optimum yield may not be achieved.

Do not use late applications of DUPLOSAN KV in mixture with more than one additional product, or where crops are potentially stressed from factors such as poor fertility, previous sprays or adverse weather conditions, e.g. frost, severe day/night temperature fluctuations or dry soils.

Autumn application of DUPLOSAN KV to control common chickweed may not be fully effective under frost conditions which can reduce the efficiency of the chemical. If sharp or severe frosts occur within three to four weeks of application to barley under stress or of low vigour on light soils, scorch or stunting may occur and yields may be less than optimum.

SPRING WHEAT, OATS AND BARLEY

Rate of application: 2.3 L/ha.

Time of application: From the first fully expanded leaf stage to before the first node detectable stage.

AMENITY GRASSLAND

Rate of application: 2.3 L/ha.

Time of application: The sward should not be topped for at least a week before or after spraying. A maximum of two applications per year are permitted.

Docks

Allow to flower in July and then cut the flower stalks before seeding to weaken root reserves. Wait two weeks and then apply the recommended rate of DUPLOSAN KV. Docks will be severely checked but may recover, in which case the treatment should be repeated in the following season.

Common Chickweed

Treat when actively growing and not shielded by grass, usually late summer or autumn.

If appreciable foliage is present there will be top growth suppression of weeds listed as Top Growth Suppressed in the weed susceptibility table.

WATER VOLUME

Apply in 170 – 400 L water/ha.

The lowest volume should only be used in open crops where weeds are small and where recommendations for any tank mix partner allow. As weeds become larger and/or crop cover increases, then the water volume should be increased. This is particularly important with cleavers. Once cleavers are beyond the two whorl stage up to six whorls, a water volume of at least 330 L water/ha is required to ensure good coverage and control.

MIXING

Half fill the spray tank with clean water and start the agitation. Pour in the required amount of DUPLOSAN KV. Add the remainder of the water and

continue agitation until spraying is completed. This product may only be used in a tank mix or in sequence with other products when these uses comply with the label recommendations of every product in the tank mix/sequence. When tank mixes are to be used, each product should be added separately to the spray tank, taking due note of any instructions given as to the order of mixing.

Incompatible Mixtures

DUPLOSAN KV is not compatible with trace element applications containing manganese sulphate.

RESISTANCE

When herbicides with the same mode of action are used repeatedly over several years in the same field, selection of resistant biotypes can take place. These can propagate and may become dominating. A weed species is considered to be resistant to a herbicide if it survives a correctly-applied treatment at the recommended dose. A strategy for preventing and managing such resistance should be adopted. This should include integrating herbicides with a programme of cultural control measures. Guidelines have been produced by the Weed Resistance action Group and copies are available from your distributor, crop advisor or product manufacturer.

IMPORTANT NOTES

- Do not apply DUPLOSAN KV to any crop suffering from herbicide damage or physical stress.
- Do not apply DUPLOSAN KV during cold weather, periods of drought, if rain or frost are expected, nor if the crop is wet.
- The crop should not be rolled or harrowed within a period of seven days before or after spraying with DUPLOSAN KV.
- Avoid damage by spray drift on to susceptible crops such as beans, beet, brassica (including oilseed rape), fruit crops, glasshouse crops, hops, lettuce, ornamentals, peas, potatoes, tomatoes and vines.
- WASH EQUIPMENT thoroughly immediately after use. Fill the tank with clean water and leave overnight. Spray out before storage or using other products. Traces of the product may cause damage to susceptible crops sprayed later.
- DUPLOSAN KV is not for use on Agricultural Grassland or Undersown crops.

TERMS AND CONDITIONS OF SUPPLY, SALE OR USE

All goods supplied by Nufarm UK Ltd are high grade and we believe them to be suitable for the purpose for which we expressly supply them; but as we cannot exercise any control over their mixing, use or application which may affect the performance of the goods all conditions and warranties statutory or otherwise as to the quality or fitness for any purpose of our goods are excluded and no responsibility will be accepted by us or our Associate Companies for any damage or injury whatsoever arising from their storage, handling, re-application or use. These conditions cannot be varied by our staff, our agents or the re-sellers of the product whether or not they supervise or assist in the use of such goods.

ACKNOWLEDGEMENTS

®Duplosan is a registered trademark of Nufarm.

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name: DUPLOSAN KV

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

Use: Herbicide

1.3. Details of the supplier of the safety data sheet

Nufarm UK Limited, Wyke Lane, Wyke, Bradford, West Yorkshire BD12 9EJ
United Kingdom

Telephone: +44 (0)1274 691234 Telefax: +44 (0)1274 691176

E-mail address: infouk@uk.nufarm.com

1.4. Emergency telephone number: +44 (0)1274 696603

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

EEC/99/45 :	Xn	R22 - Harmful if swallowed.
	Xi	R38 - Irritating to skin.
	Xi	R41 - Risk of serious damage to eyes.
	N	R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
EG_1272/08 :	SkinIrrit.2	H315 - Causes skin irritation.
	EyeDam.1	H318 - Causes serious eye damage.
	AcuteTox.4	H302 - Harmful if swallowed.

2.2. Label elements according directive 1999/45/EG

Pictogram:



Xn



N

R22	-	Harmful if swallowed.
R38	-	Irritating to skin.
R41	-	Risk of serious damage to eyes.
R51/53	-	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S 2	-	Keep out of the reach of children.
S 13	-	Keep away from food, drink and animal feedingsuffs.
S26	-	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37	-	Wear suitable protective clothing and gloves.
S39	-	Wear eye/face protection.
S46	-	If swallowed, seek medical advice immediately and show this container or label.
S57	-	Use appropriate container to avoid environmental contamination.
S35	-	This material and its container must be disposed of in a safe way.

REGULATION (EC) No 1272/2008

Pictogram:



GHS05



GHS07

Signal word: Danger

H302	-	Harmful if swallowed.
H315	-	Causes skin irritation.
H318	-	Causes serious eye damage.
P280	-	Wear protective gloves/ eye protection/ face protection.
P301+312	-	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P330	-	Rinse mouth.
P305+351+338	-	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302+352	-	IF ON SKIN: Wash with plenty of soap and water.
P332+313	-	If skin irritation occurs: Get medical advice/ attention.

2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Soluble liquid Mecoprop-P 600g/l as the potassium salt.

3.2. Mixtures

Components:

Mecoprop-P

CAS-No.:	16484-77-8
EINECS-No. / ELINCS No.:	240-539-0
REACH No.:	01-2119447100-56
Concentration:	48.2 % (w/w)

Classification:

EG_1272/08 :	AcuteTox.4	H302 - Harmful if swallowed.
	EyeDam.1	H318 - Causes serious eye damage.
	AquaticChronic2	H411 - Toxic to aquatic life with long lasting effects.
EEC/67/548 :	Xn	R22 - Harmful if swallowed.
	Xi	R41 - Risk of serious damage to eyes.
	N	R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

potassium hydroxide

CAS-No.:	1310-58-3
EINECS-No. / ELINCS No.:	215-181-3
REACH No.:	01-2119487136-33
Concentration:	12 % (w/w)

Classification:

EG_1272/08 :	AcuteTox.4	H302 - Harmful if swallowed.
	SkinCorr.1A	H314 - Causes severe skin burns and eye damage.
EEC/67/548 :	Xn	R22 - Harmful if swallowed.
	C	R35 - Causes severe burns.

4. FIRST AID MEASURES

4.1. Description of first aid measures

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Obtain medical attention.

Skin contact:

Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. If symptoms persist, call a physician. Wash contaminated clothing before re-use.

Inhalation:

Move to fresh air. If symptoms persist, call a physician.

Ingestion:

Do NOT induce vomiting. If conscious, drink plenty of water. If symptoms persist, call a physician.

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

Hazards: No information available.

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

Treatment: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: Water spray, Carbon dioxide (CO₂), Dry powder, Alcohol-resistant foam Extinguishing media which shall not be used for safety reasons: High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during fire fighting: In the event of fire (HCl,Cl₂,CO) may be formed.

5.3. Advice for firefighters

Special protective equipment for fire-fighters: Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary. Further information: Standard procedure for chemical fires. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment. (see Chapter 8)

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and materials for containment and cleaning up

Methods for cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Sweep up and shovel into suitable containers for disposal.

Additional advice: Never return spills in original containers for re-use.

6.4. Reference to other sections

see Chapter 13

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice: Wear personal protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep containers tightly closed in a

cool, well-ventilated place.

Advice on common storage: Keep out of reach of children. Keep away from food, drink and animal feeding stuffs.

7.3. Specific end uses

none

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Components with workplace control parameters

(according to S.I. No. 619 of 2001)

Components: mecoprop-P

CAS-No.: 16484-77-8

National occupational exposure limits: -

Note: no classification available, (according to S.I. No. 619 of 2001)

Components: potassium hydroxide

CAS-No.: 1310-58-3

National occupational exposure limits: 2 mg/m³

Note: (according to S.I. No. 619 of 2001)

8.2. Exposure controls

Personal protective equipment

Respiratory protection: No special protective equipment required.

Hand protection: PVC or nitrile rubber gloves

Eye protection: Safety glasses, or, Goggles

Skin and body protection: Lightweight protective clothing

Hygiene measures: Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

Protective measures: Avoid contact with skin, eyes and clothing. Keep working clothes separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance

Physical state: liquid

Colour: brown

Odour: amine-like

Start of crystallisation: -20 °C

Flash point: > 100 °C

Auto-ignition temperature: >400 °C

Vapour pressure: 2.3E+00 Pa (mecoprop-P)

Density: 1.24 g/cm³ at 20 °C

Water solubility: completely soluble

pH: 9

Partition coefficient: n- log POW = 0.02

octanol/water at 20 °C

(pH 7), (mecoprop-P)

log POW = -0.18 at 20 °C

(pH 9), (mecoprop-P)

Viscosity, dynamic: ca.33 mPa.s

at 20 °C

9.2. Other information

none

10. STABILITY AND REACTIVITY

10.1. Reactivity

no data available, not applicable

10.2. Chemical stability

No decomposition if stored and applied as directed.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

No dangerous reaction known under conditions of normal use.

10.5. Incompatible materials to avoid

Incompatible with acids.

10.6. Hazardous decomposition products

none)

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute oral toxicity:	LD50 rat Dose: 500 - 2,000 mg/kg
Acute dermal toxicity:	LD50 rat Dose: > 4,000 mg/kg
Acute inhalation toxicity:	LC50 rat Exposure time: 4 h Dose: > 5.4 mg/l
Skin irritation:	Result: irritating
Eye irritation:	Result: rabbit Result: Severe eye irritation Remarks: Risk of serious damage to eyes.
Sensitisation:	Result: Did not cause sensitization

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to fish:	LC50 Dose: > 100 mg/l Testing period: 96 h Test substance: (mecoprop-P)
Toxicity to daphnia:	LC50 Dose: > 91 mg/l Testing period: 48 h Test substance: (mecoprop-P)
Toxicity to algae:	EC50 Toxicity to algae: Dose: 16.2 mg/l Exposure time: 72 h Test substance: (mecoprop-P) EC50 Lemna gibba (Duckweed) Dose: 1.6 mg/l Test substance: (mecoprop-P)

12.2. Persistence and degradability

Biodegradability: Readily biodegradable.

Stability in soil: DT50: 6.3 - 8.2 d
(mecoprop-P)

12.3. Potential bioaccumulation

Bioaccumulation: Does not bioaccumulate.

12.4. Mobility in soil

Koc = 135 - 167 (mecoprop-P)

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

12.6. Other adverse effects

none

13. DISPOSAL CONSIDERATIONS

According to European Directive 2000/532/EC as amended :

Waste Code: 02 01 08 (agrochemical waste containing dangerous substances)

13.1. Waste treatment methods

Product: Dispose of in accordance with local regulations.

Contaminated packaging: Dispose of in accordance with local regulations

14. TRANSPORT INFORMATION

14.1. UN number

14.2. Proper shipping name

not applicable

14.3. Transport hazard class(es)

ADR/RID : Not a dangerous substance as defined in the above regulations.

IMDG : Not a dangerous substance as defined in the above regulations.

IATA-DGR : Not a dangerous substance as defined in the above regulations.

14.4. Packaging group

not applicable

14.5. Environmental hazards

not applicable

14.6. Special precautions for user

none

15. REGULATORY INFORMATION

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

The product is classified and labelled in accordance with EC directives or respective national laws.

15.2. Chemical Safety Assessment

none

16. OTHER INFORMATION

2014/01/24

The date format YYYY/MM/DD is used according to ISO 8601.
(Alterations are indicated in the left hand margin by: ||)

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.

The information contained herein is based on the present state of our knowledge and does therefore not guarantee certain properties.

SPECIMEN -
2017 TO DATE