

SAFETY PRECAUTIONS

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 GLOVES when 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.

DO NOT BREATHE SPRAY.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

WASH CONCENTRATE from skin and eyes immediately.

WASH HANDS AND EXPOSED SKIN before eating and drinking, and after work.

Environmental protection:

To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 m of the top of the bank of a static or flowing water body, unless a Local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 1 m of the top of a ditch which is dry at the time of application.

This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer, either a LERAP must be carried out in accordance with CRD's published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for three years.

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. Extreme care must be taken to avoid spray drift onto non-crop plants outside of the target area.

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 rinsing three times. Add washings to sprayer at time of filling and dispose of safely. DO NOT RE-USE CONTAINER for any purpose.

 Dow AgroSciences

Whorl™

HERBICIDE

Product Registration Number: MAPP 17819

An EC (Emulsifiable Concentrate) containing 12 g a.e./L of halauxifen-methyl and 280 g a.e./L fluroxypyr meptyl and 12 g /L of cloquintocet-mexyl (safener).

Arylex™ is the commonly used name of halauxifen-methyl active substance.

A post-emergence herbicide for use on a variety of winter cereals (wheat, durum wheat, spelt, barley, rye, triticale) and spring cereals (wheat, durum wheat, barley and rye) for the control of a wide range of broad leaved weeds.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.

**PROTECT FROM FROST.
SHAKE WELL BEFORE USE.**

Dow AgroSciences Limited

CPC2 Capital Park, Fulbourn, Cambridge, CB21 5XE.
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This label is compliant with the CPA Voluntary Initiative Guidance.

ARYLEX ACTIVE

5 Litres e



Product Identifier according to Art. 18 of Reg. (EC) No 1272/2008 (CLP): Whorl™, Cloquintocet-mexyl

Warning

May cause an allergic skin reaction

Causes serious eye irritation

May cause respiratory irritation

Very toxic to aquatic life with long lasting effects

IF ON SKIN: Wash with plenty of water.

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

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

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean 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.**

IMPORTANT INFORMATION.

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

Situation: Wheat (spring), durum wheat (spring), barley (spring), rye (spring), wheat (winter), durum wheat (winter), barley (winter), rye (winter), triticale (winter), spelt (winter)

Maximum Individual Dose: }

Maximum Total Dose: } Full details are given in the Important Information area

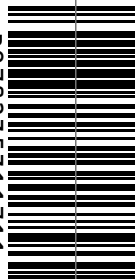
Time of Application: } on the attached leaflet

Other Specific Restrictions: }

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.



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DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of this product.

IMPORTANT INFORMATION.

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

Crops	Maximum Individual Dose	Maximum Total Dose	Time of Application
Wheat (spring), durum wheat (spring), barley (spring), rye (spring)	0.5 litre product per hectare	0.5 litre product per hectare per crop	BBCH45 March 1 st to June 30 th (in year of planting)
Wheat (winter), durum wheat (winter), barley (winter), rye (winter), triticale (winter), spelt (winter)	0.5 litre product per hectare	0.5 litre product per hectare per crop	BBCH45 February 1 st to June 30 th (in the year of planting)

Other Specific Restrictions:

* The total amount of halauxifen-methyl applied to a winter cereal must not exceed 13.5 g a.e./ha per season: 7.5 g a.e./ha in the autumn followed by 6 g a.e./ha in the spring, with a minimal interval of 3 months between both applications of products which contain halauxifen-methyl.

Do not use WHORL on winter and spring oats.

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GENERAL INFORMATION

WHORL is mainly absorbed through the foliage of the target weeds. The ideal timing is when the weeds are small and actively growing.

Do not treat crops under stress. Stress can be caused by many factors including frost, drought, water logging, trace element deficiency, disease and pest attack etc. WHORL can sometimes induce slight and transient (2-3 weeks) crop yellowing or growth inhibition. This has no impact on yield and grain quality.

Do not apply to crops undersown with any legume crop (clover etc.).

WEED RESISTANCE

WHORL contains two active ingredients, Arylex™ (halauxifen-methyl) and fluroxypyr-methyl, so the risk of resistance is reduced. Arylex™ is an arylpicolininate and fluroxypyr-methyl is a pyridine carboxylic acid. Both actives have a Group O, HRAC classification. The risk of resistance developing to these group O herbicides is considered to be low.

To minimize the risk of resistance developing, the following precautions are advised as part of a resistance management strategy.

1. Use rate to maximise control of high risk/difficult to control weed species.
2. Follow label statements concerning rates and application timing.
3. Use WHORL only once per crop season.
4. Consider the use of cultural control methods where possible.
5. Do not over rely on a single herbicide mode of action.

SOIL

WHORL can be used on any soil type.

CROPS

WHORL can be used on a variety of winter cereals (wheat, durum wheat, spelt, barley, rye and triticale) and spring cereals (wheat, durum wheat, barley and rye) for the control of broad leaf weed species.

WHORL can be used on cereals grown for seed and malting barley.

TIMING

Winter sown cereal

WHORL can be applied from February 1st when the crop is at least BBCH 13 (three leaves unfolded) up to BBCH 45 (flag leaf sheath swollen). Latest calendar date for application is 30th June.

Spring sown cereals

WHORL can be applied from March 1st when the crop is at least BBCH 13 (three leaves unfolded) up to BBCH 45 (flag leaf sheath swollen). The latest calendar date for application is 30th June.

The ideal timing for application is when the weeds are small and actively growing. However, some highly susceptible species can be controlled at advanced growth stages for rescue treatments (e.g. *Cleavers* and *Red Dead Nettle*).

RATE OF USE, WEED SUSCEPTIBILITY AND MAXIMUM SIZE CONTROLLED

Application rates and timing for spring applications to winter cereals:

Weed species	Rate L/ha	Timing crop	Maximum growth stage controlled	Susceptibility
Common Shepherd's purse	0.5	From 3 leaves unfolded to second node detectable.	Full flowering up to 15 cm diameter	S
Common fumitory	0.25	From 3 leaves unfolded to second node detectable.	up to 20 cm height	S
Cleavers	0.375	From 3 leaves unfolded to second node detectable.	Full flowering up to 40 cm height	S

Weed species	Rate L/ha	Timing crop	Maximum growth stage controlled	Susceptibility
Common hemp nettle	0.5	From 3 leaves unfolded to second node detectable.	up to 10 cm height	S
Small flowered cranesbill	0.25	From 3 leaves unfolded to second node detectable.	up to 10 cm height	S
Red dead-nettle	0.25	From 3 leaves unfolded to second node detectable.	Full flowering up to 20 cm height	S
Common poppy	0.5	From 3 leaves unfolded to second node detectable.	up to 10 cm diameter	S
Common chickweed	0.5	From 3 leaves unfolded to second node detectable.	Full flowering 25 cm height	S

Rescue treatment for Cleavers to be applied to the crop from third node detectable to flag leaf sheath swollen (winter cereals) and no later than the 30th June:

Weed species	Rate L/ha	Timing crop	Maximum growth stage controlled	Susceptibility
Cleavers	0.5	From third node detectable to flag leaf sheath swollen	Beginning of flowering Up to 90 cm	S

Application rates and timing for spring applications to spring cereals:

Weed species	Rate L/ha	Timing crop	Maximum growth stage controlled	Susceptibility
Fat-hen	0.375	From 3 leaves unfolded to second node detectable.	Up to 25 cm height	S
Common fumitory	0.25	From 3 leaves unfolded to second node detectable.	6 true leaf stage up to 10 cm height	S
Cleavers	0.25	From 3 leaves unfolded to second node detectable.	up to 40 cm height	S
Dead-nettle spp	0.25	From 3 leaves unfolded to second node detectable.	First flower petals visible up to 10 cm height	S
Black bindweed	0.5	From 3 leaves unfolded to second node detectable.	up to 15 cm height	S

Weed species	Rate L/ha	Timing crop	Maximum growth stage controlled	Susceptibility
Common chickweed	0.5	From 3 leaves unfolded to second node detectable.	up to 15 cm diameter	S

Rescue treatment for Cleavers to be applied to the crop from third node detectable to flag leaf sheath swollen (spring cereals) and no later than the 30th June:

Weed species	Rate L/ha	Timing crop	Maximum growth stage controlled	Susceptibility
Cleavers	0.375	From third node detectable to flag leaf sheath swollen	First flowers visible up to 40 cm	S

For best results apply WHORL to young weeds which will respond quicker when treated at early stages. Vigorous crop competition enhances control of difficult to control weeds.

WEATHER CONDITIONS

WHORL can be used in cold or warm (from 2 to 25 °C), humid or dry conditions. In severe drought conditions there can be a slight reduction in efficacy.

RAINFASTNESS

WHORL is rainfast one hour after application.

ADJACENT CROPS

Do not spray in windy weather. Wind speed should be less than or equal to 3 on the Beaufort scale (i.e. a maximum of 19 km/hour). Do not spray if the temperature exceeds 25° C in the shade.

Avoid spray drift onto non-target crops.

Particular care should be taken to avoid spray drift onto susceptible crops e.g. vines, orchards, sunflower, legumes, vegetable crops, ornamentals, flax, sugar beet, potatoes etc.

WHORL is of low volatility and is therefore not subject to vapour drift.

The use of low drift nozzles is recommended.

WATER VOLUME

Using standard or low drift nozzles the recommended spray volume is 100 to 400 litres of water per hectare. The lowest water volume should only be used in open crops on small weeds. On later applications where the crop is dense, the spray volume should be increased to 200-400 litres water per hectare. The minimum recommended pressure is 2 to 3 bars.

CROP FAILURE

In the event of a cereal crop failure after the crop has been treated with WHORL, consider all herbicides used on the treated field before deciding which new crop to sow.

In case of a crop failure after a spring application of WHORL at 0.5 L/ha:

- 1 month after application with no cultivation: Spring wheat, Spring barley, Spring oats, and Ryegrass may be sown.

- 2 months after application and after ploughing: Maize, Spring oilseed rape, Pea, Broad bean and Field bean may be sown.
- 3 months after application: Sorghum may be sown.

FOLLOWING CROPS

After an application of WHORL at 0.5 L/ha up to BBCH 45, the following crops may be sown in the summer/autumn of the same year after the cereal harvest: White mustard, Pea, Winter oilseed rape, Phacelia, Ryegrass, Winter wheat and Winter barley. Ploughing is recommended prior to drilling Lucerne, Field bean, Soybean, Clover, Maize and Broad Bean.

After an application of WHORL at 0.5 L pr/ha up to BBCH 45, the following crops may be sown in the spring of the year after the cereal harvest: Spring wheat, Spring barley, Spring oats, Ryegrass, Maize, Sorghum, Spring oilseed rape, Sugar beet, Potato, Field bean, Tomato, Sunflower, Soybean, Onion, Clover, Pea, Chickpea and Lucerne.

MIXING

WHORL can be used with tractor mounted boom sprayers. It can be added to the top of the tank or through induction bowls. Add the appropriate amount of WHORL to clean water in a half-filled sprayer tank, mix thoroughly and add the remainder of the water. The spray mix must be agitated continuously during mixing and until application is complete.

TANK CLEANING

To avoid subsequent injury to crops other than cereals, all spraying equipment must be thoroughly cleaned both inside and out using a proprietary spray tank cleaner or bleach containing 5 % hypochlorite as follows

1. Immediately after spraying thoroughly and completely rinse all internal surfaces.
2. Rinse inside of tank with clean water and flush through booms and in-line strainers using at least one tenth of the spray tank volume. Drain tank completely.
3. Fill tank with clean water (minimum 10% of tank capacity) and add tank cleaner at the recommended rate and agitate for 15 minutes. Flush the boom and hoses and drain tank completely.
4. Nozzles and filters should be removed and cleaned separately with a tank cleaner at the recommended rate.
5. Rinse the tank with clean water and flush through the boom and hoses using at least one tenth of the spray tank volume. Drain tank completely.
6. For disposal of washings, follow Code of Practice for Using Plant Protection Products. Do not spray onto sensitive crop or land intended for cropping with sensitive crop.

Note: If it is not possible to drain the tank completely, step 3 must be repeated before going onto step 4.

TRADEMARK ACKNOWLEDGEMENTS

WHORL is a trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.

All other brand names are trademarks of other manufacturers for which proprietary rights may exist.

DOW AGROSCIENCES CONDITIONS OF SUPPLY

All goods supplied by us are of high grade and we believe them to be suitable but, as we cannot exercise control over their storage, handling, mixing or use, or the weather conditions before, during or after 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. No responsibility will be accepted by us or re-sellers for any failure in performance, damage or injury whatsoever arising from their storage, handling, application or use. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in the use of such goods.

To access the Safety Data Sheet for this product scan the QR code or use the weblink below:



<http://uk.dowagro.com/wp-content/uploads/WHORL-SDS.pdf>

Alternatively contact your supplier

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SPECIMEN

SAFETY PRECAUTIONS

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 Dow AgroSciences

Whorl™

HERBICIDE

ARYLEX ACTIVE

Product Registration Number: MAPP 17819

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SHAKE WELL BEFORE USE.

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5 Litres e



Product Identifier according to Art.18 of Reg. (EC) No 1272/2008 (CLP): Whorl™, Cloquintocet-mexyl

Warning

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Causes serious eye irritation

May cause respiratory irritation

Very toxic to aquatic life with long lasting effects

IF ON SKIN: Wash with plenty of water.

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

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

If eye irritation persists: Get medical advice/attention.

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Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean 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.

IMPORTANT INFORMATION.

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

Situation: Wheat (spring), durum wheat (spring), barley (spring), rye (spring), wheat (winter), durum wheat (winter), barley (winter), rye (winter), triticale (winter), spelt (winter)

Maximum Individual Dose: }

Maximum Total Dose: } Full details are given in the Important Information

Time of Application: } area on the attached leaflet

Other Specific Restrictions: }

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.