

Product Identifier according to Art. 18 of Reg. (EC) No 1272/2008 [CLP]: Flexidor®  
**WARNING**

**Very toxic to aquatic life with long lasting effects**

Collect Spillage  
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.

Contains 1,2-benzisothiazolin-3-one. May produce an allergic reaction.

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

**IMPORTANT INFORMATION.**

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL/FORESTRY HERBICIDE

**Crops/Situations:** } WINTER WHEAT, BARLEY, RYE, OAT TRITICALE, CHERRIES, PLUMS, APPLE AND PEAR ORCHARDS, STRAWBERRY, BERRIES, HOPS, ORNAMENTAL PLANT PRODUCTION, FORESTRY, AMENITY VEGETATION.

**Maximum Individual Dose:** }  
**Maximum Number of Treatments:** } Full details are given in the Important Information Area on the attached leaflet  
**Latest Time of Application:** }

**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.**

**Dow** Dow AgroSciences



**Flexidor**®

**HERBICIDE**

Product Registration Number: MAFF 05121

A suspension concentrate containing 500 g/litre (12.14% w/w) isoxaben.

A residual herbicide for the control of BROAD-LEAVED WEEDS in WINTER AND SPRING WHEAT, BARLEY and OATS, RYE, TRITICALE, DURUM WHEAT, TOP, BUSH, CANE FRUIT, STRAWBERRY, GRAPEVINE and HOP, ORNAMENTAL PLANT PRODUCTION, FORESTRY and AMENITY VEGETATION.

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

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

**READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.**

**STORE IN AREAS FREE OF FROST.**

**0.5 Litres e**

®Trademark of the Dow Chemical Company (Dow) or an affiliate company of Dow

This label is compliant with the CPA Voluntary Initiative Guidance



**SAFETY PRECAUTIONS**

**Operator protection:**

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

- a) Operators must wear suitable protective clothing (coveralls), suitable protective gloves, rubber boots and face protection (faceshield) when handling the concentrate.
- b) Operators must wear suitable protective clothing (coveralls), suitable protective gloves and rubber boots when applying by hand-held equipment.
- c) Operators must 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.

**WASH HANDS AND EXPOSED SKIN** before meals and after work. **WHEN USING DO NOT EAT, DRINK OR SMOKE.**

**Environmental protection:**

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

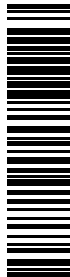
To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies in line with LERAP requirements.

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. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1 m of the top of the bank of a static or flowing water body Aim spray away from water.

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.



P 9 9 0 3 2 5 1 7 1 5 1 0



KEEP LIVESTOCK out of treated areas for at least 50 days following treatment.  
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 OUT OF REACH OF CHILDREN.  
KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS  
KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.  
EMPTY CONTAINER COMPLETELY and dispose of safely.

**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/HORTICULTURAL/FORESTRY HERBICIDE

Crops	Maximum Individual Dose	Maximum Number of Applications	Latest Timing of Application
Winter wheat, winter barley, winter oats, autumn-sown spring wheat, winter rye, triticale, durum wheat	0.25 litre product per hectare	One per crop	Before 1 January in year of harvest
	<b>OR</b> 0.15 litre product per hectare	One per crop	Before second node detectable stage or 1 April in year of harvest whichever is the sooner
Spring wheat, spring barley, spring oats	0.25 litre product per hectare	One per crop	Before second node detectable stage or 1 April whichever is the sooner
Ornamental plant production, amenity vegetation and forest nursery	0.5 litre product per hectare	Two per crop or - two per annum	
Top, bush, cane fruit, strawberry, grapevine and hop	0.5 litre product per hectare	One per crop	Before 1 April in year of harvest
Forestry (tree, nursery), ornamentals (tree, shrub)	0.5 litre product per hectare	Two per crop or - two per annum	

**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.**

**WARNINGS**

FLEXIDOR\* has residual activity which may influence husbandry prior to the next crop in the rotation.

Following crops of oilseed rape, stubble turnips, other brassicas, sugar and fodder beet are particularly sensitive to FLEXIDOR. Land must be mouldboard ploughed to at least 20 cm following the use of FLEXIDOR before drilling/planting succeeding crops other than cereals, fruit crops, herbage seed crops, grass leys and amenity grass, forestry plantings, hardy ornamental crops and plantings, potatoes and maize.

Do not use FLEXIDOR in the 12 months prior to grubbing any fruit crop or lifting field grown hardy ornamental nursery stock or forestry plants if sugar beet, vegetables, oilseed rape or other brassica crops are to be grown as a following crop.

The practice of soil sterilisation may retard the normal degradation of FLEXIDOR and thus may pose a risk to following crops. Do not therefore carry out both soil sterilisation and application of FLEXIDOR within the two years prior to replanting.

When FLEXIDOR is used in tank mix or in sequence with other products, consult other manufacturer's recommendations for following crops.

In the event of crop failure treated soil should first be cultivated. Only cereals or grass may then be sown.

Before use on crops for processing, consult your processor.

**RESISTANCE**

Avoid using single mode of action herbicides in the same field over a number of years. Growers are advised to apply products containing herbicides with different modes of action or use sequences or tank mixtures where two or more components are active against the target weeds.

**MIXING**

To ensure thorough mixing of the product invert the container several times before opening. Add the required amount of FLEXIDOR herbicide to a half-filled spray tank under agitation and complete filling the tank.

**APPLICATION EQUIPMENT**

FLEXIDOR may be applied through tractor mounted hydraulic sprayers and knapsack sprayers equipped with nozzles producing a medium spray quality as defined by the BCPC system. For tractor mounted hydraulic sprayers use a standard boom sprayer with bypass agitation. Ensure the pump has sufficient capacity to provide good agitation and generate adequate pressure. The spray boom and nozzles should be set to provide even coverage, which should be checked during application.

**VOLUME AND SPRAY QUALITY**

Apply FLEXIDOR in a volume of 100 to 400 litres of water per hectare. For hand-held knapsack situations refer to the relevant section. Apply as a MEDIUM spray as defined by the BCPC system.

## TANK CLEANING

Thoroughly wash all spraying and measuring equipment with water immediately after use.

To avoid subsequent injury to crops, all spraying equipment must be thoroughly cleaned both inside and out after an application of Flexidor.

1. Immediately after spraying, drain tank completely. Any contamination on the outside of the spraying equipment should be removed by washing with clean water.
2. Rinse inside of tank with clean water and flush through booms and hoses using at least one tenth of the spray tank volume. Drain tank completely.
3. Half fill tank with clean water. Agitate and then briefly flush the boom and hoses. Top up with water making sure the tank is completely full and allow to stand for 15 minutes with agitation. Flush the boom and hoses and drain tank completely.
4. Nozzles and filters should be cleaned separately and removed if necessary.
5. For disposal of washings, follow local regulations. 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.

## SEEDBED PREPARATION

The best results will be obtained when FLEXIDOR is applied to well prepared moist seedbeds free of clods. Rolling loose or fluffy seedbeds after drilling and prior to spraying will improve weed control.

## SOILS

FLEXIDOR can be safely applied to sand, light, medium and heavy soils. The activity of FLEXIDOR may be reduced in soils with high levels of organic matter. Do not use on soils with more than 10% organic matter except on container grown hardy ornamental nursery stock. Application of organic manures will also reduce the level of weed control. FLEXIDOR should be applied before mulching. Leaf litter and prunings should be removed before application to allow even coverage of the product.

## DRY SOIL CONDITIONS

Under dry soil conditions weed control may be reduced. Irrigation, where practicable, will enhance product performance. Tank mix partners will also contribute to improved weed control - see relevant crop section.

## CEREALS

Refer to Warnings section before use.

## WEED SUSCEPTIBILITY

At 0.2 litre/ha in cereals the following broad-leaved weeds are susceptible following an autumn application of FLEXIDOR before weed emergence and under conditions of adequate soil moisture.

## Susceptible:

Charlock  
Common chickweed  
Common field-speedwell  
Common fumitory  
Common hemp-nettle  
Common mouse-ear  
Common poppy  
Corn marigold  
Corn spurrey  
Fat-hen  
Field forget-me-not  
Field pansy  
Green field-speedwell  
Ivy-leaved speedwell  
Knotgrass  
Parsley-piert  
Pineappleweed  
Red dead-nettle  
Redshank  
Scarlet pimpernel  
Scented mayweed  
Scentless mayweed  
Shepherd's-purse  
Small nettle  
Volunteer rape  
Wild radish

## Moderately Susceptible:

Groundsel

## Moderately Resistant:

Cleavers (Weeds germinating from depth will not be controlled)

When used in conjunction with grass and other herbicides lower rates may be used (see Recommendations).

## CROPS

FLEXIDOR may be used on all varieties of winter wheat, barley, triticale, rye and oats.

## TIMING

FLEXIDOR alone may be used pre- or early post-emergence to the crop.

## Before Weed Emergence

FLEXIDOR will control a wide range of broad-leaved weeds when applied before they have emerged. When used alone, FLEXIDOR should always be used before weed emergence. See Seedbed Preparation.

## After Weed Emergence

FLEXIDOR may also be used after weeds have emerged but it must be used in conjunction with an appropriate post emergence herbicide, either in tank mix or sequentially.

### **DRY SOIL CONDITIONS**

Under dry soil conditions weed control may be reduced, so with early planted crops (August and September), pre-emergence applications should be made within three days and preferably within 24 hours of drilling. If this is not possible FLEXIDOR should be used in combination with a recommended pre-emergence herbicide, or alternatively a later post-emergence application can be made with an appropriate post-emergence herbicide.

### **CHERRIES, PLUMS, APPLE AND PEAR ORCHARDS**

Refer to Warnings section before use.

Apply from dormant stage to flowering. (BBCH00-BBCH69). Apply as a banded application within the planted row at a dose rate of 0.5 litres/ha. Do not exceed a total of 0.36 litres of product per hectare this means that only 72% of any one hectare may be sprayed. For example a row width of 4.0m could be sprayed followed by a pathway of 0.72m.

### **BLACK CURRANT, GOOSBERRY, BLACKBERRY, RASPBERRY**

Refer to Warnings section before use.

Apply dormant stage to leaf tips extended beyond scales (BBCH00-BBCH09). Apply at a dose rate of 0.5 L/ha.

### **STRAWBERRY**

Refer to Warnings section before use.

Apply 1-3 weeks after planting, Apply at a dose rate of 0.4 L/ha.

### **HOPS**

Refer to Warnings section before use.

Apply before the hop plants emerge. Apply as a banded application to the planted row at a dose rate of 0.5 litres/ha. Do not exceed a total of 0.15 litres of product per hectare this means that only 30% of any one hectare may be sprayed. For example a row width of 2.0 m could be sprayed followed by a pathway of 6.6 m.

### **FLEXIDOR + KERB SOW/KERB FLO**

Treat apples, pears, plums, blackcurrants, gooseberries, blackberries, summer fruiting raspberries (England only) and strawberries in November to January.

### **WEED SUSCEPTIBILITY**

The following broad-leaved weeds are susceptible following application of FLEXIDOR before weed emergence and under conditions of adequate soil moisture. FLEXIDOR does not control grass weeds.

#### **Susceptible:**

Charlock  
Common chickweed  
Common field-speedwell  
Common fumitory  
Common hemp-nettle  
Common mouse-ear

Ivy-leaved speedwell  
Knotgrass  
Parsley-piert  
Pineappleweed  
Red dead-nettle  
Redshank

Common poppy  
Corn marigold  
Corn spurrey  
Fat-hen  
Field forget-me-not  
Field pansy  
Green field-speedwell

#### **Moderately Susceptible:**

Groundsel

#### **Moderately Resistant:**

Cleavers (Weeds germinating from depth will not be controlled)

### **FOREST NURSERY, ORNAMENTAL PLANT PRODUCTION, AMENITY VEGETATION**

Refer to Warnings section before use.

### **WEED SUSCEPTIBILITY**

**Crop/Situation: Forestry transplant lines, second year undercuts, forests and woodland plantings, field grown hardy ornamental nursery stock, ornamental plantings of trees and shrubs**

For application rates, refer to the relevant section.

#### **Susceptible:**

Common chickweed  
Common field-speedwell  
Common fumitory  
Common mouse-ear  
Common orache  
Common poppy  
Corn marigold  
Corn spurrey  
Fat-hen  
Field forget-me-not  
Field pansy  
Green field-speedwell  
Hairy bitter-cress

Scarlet pimpernel  
Scented mayweed  
Scentless mayweed  
Shepherd's-purse  
Small nettle  
Volunteer rape  
Wild radish

Ivy-leaved speedwell  
Parsley-piert  
Pineappleweed  
Red dead-nettle  
Redshank  
Ribwort plantain  
Scarlet pimpernel  
Scented mayweed  
Shepherd's-purse  
Small nettle  
Volunteer rape  
Wild radish

**Moderately Susceptible:**

Groundsel\*\*

**Moderately Resistant:**

Cleavers (Weeds germinating from depth will not be controlled)

**Crop/Situation: Container grown hardy ornamental nursery stock**

For application rates, refer to relevant label section.

**Susceptible:**

Common chickweed

Hairy bitter-cress

Pearlwort

Shepherd's-purse

**Moderately Susceptible:**

Groundsel\*\*

**FOREST NURSERY**

In view of the large number of forestry species and cultivars grown, test FLEXIDOR for crop safety on a small number of plants before overall application.

FLEXIDOR may be applied to the following crop species and situations:

**Forestry Transplants, Second Year Undercuts, Forests and Woodlands:**

Before application of FLEXIDOR, ensure plants have good root development.

*Conifers:*

Austrian pine  
Caucasian fir  
Colorado spruce  
Douglas fir  
European larch  
Japanese larch

Noble fir  
Norway spruce  
Scots pine  
Serbian spruce  
Sitka spruce

*Broad-leaved trees:*

Alder  
Ash  
Beech  
Birch  
Cherry

Oak  
Poplar  
Sweet chestnut  
Sycamore  
Willow

**APPLICATION****Rates of use, water volumes and timing**

Crop/Situation	Rate		Water Volume		Timing and Comments
	litres/ha	ml/100 m <sup>2</sup>	Tractor mounted machine (litres/ha)	Knapsack sprayer (litres/100m <sup>2</sup> )	
Forestry transplants and second year undercuts	0.5	5.0	100-400	5	After transplanting apply to firm, moist soil, free of clods prior to weed germination. Irrigate as necessary to prevent the soil surface from becoming dry. Where control of grasses and emerged broad-leaved weeds is needed tank mix with KERB FLO.
Forest and woodland plantings	0.5	5.0	100-400	5	Apply to newly planted or established trees before weed emergence. Soil should be firm, moist and free of clods. Where control of grasses and emerged broad-leaved weeds is needed tank mix with KERB FLO.

**ORNAMENTAL PLANT PRODUCTION AND AMENITY VEGETATION**

FLEXIDOR may be applied to broad leaved trees and shrubs as an overall spray in the dormant season or as a directed spray at other times, ensuring that the spray does not fall on any foliage present.

In view of the large number of ornamental species and cultivars grown, test FLEXIDOR for crop safety on a small number of plants before overall application.

In amenity plantings of trees and shrubs, bedding plants should not be treated, as crop safety has not been determined.

FLEXIDOR may be applied to the following ornamentals:

*Conifers:*

Chamaecyparis	Pseudotsuga
Cupressocyparis	Thuja
Juniperus	Tsuga
Pinus	

*Broad-leaved trees  
and shrubs:*

Acer	Escallonia	Potentilla
Alnus	Euonymus	Prunus
Amorpha	Fagus	Quercus
Berberis	Forsythia	Ribes
Betula	Fraxinus	Robinia
Calutea	Gleditsia	Rosa
Campsis	Groseillier	Salix
Caragama	Hebe	Skimmia
Carpinus	Hibiscus	Sophora
Cassia	Hypericum	Spirea
Cornus	Laburnum	Tamarix
Corylus	Ligustrum	Tilia
Cratageus	Philadelphus	Weigela
Deutzia	Populus	

**APPLICATION**  
**Rates of use, water volumes and timing**

Crop/Situation	Rate		Water Volume		Timing and Comments
	litres/ha	ml/100m <sup>2</sup>	Tractor mounted machine (litres/ha)	Knapsack sprayer (litres/100m <sup>2</sup> )	
Container grown hardy ornamental nursery stock (protected and unprotected stock)	0.5	5.0	100-400	10	Apply to newly potted or established plants. For newly potted plants allow compost to settle for 7-10 days before application. Repeat as necessary but no more than two applications per year. The compost should be firm and free of emerged weeds at application. Rainfall or irrigation (20-30 mm) is required within 3 days after treatment to activate FLEXIDOR and to ensure its correct positioning in the upper layer of the compost.
Field grown hardy ornamental nursery stock	0.5	5.0	100-400	5	Apply to new or established plantings. Soils should be firm, moist, free of clods and emerged weeds at application. Repeat as necessary but no more than two applications per year. Irrigate as necessary to prevent the soil surface from becoming dry. Where control of grasses and emerged broad-leaved weeds is needed tank mix with KERB FLO.

**Rates of use, water volumes and timing (continued)**

Crop/Situation	Rate		Water Volume		Timing and Comments
	litres/ha	ml/100 m <sup>2</sup>	Tractor mounted machine (litres/ha)	Knapsack sprayer (litres/100 m <sup>2</sup> )	
Amenity plantings of trees and shrubs	0.5	5.0	100-400	5	Apply to newly planted or established trees and shrubs before weed emergence. Soil should be firm, moist and free of clods. Where control of grasses and emerged broad-leaved weeds is needed tank mix with KERB FLO.

**TRADEMARK ACKNOWLEDGEMENTS**

FLEXIDOR AND KERB are trademarks of Dow AgroSciences LLC.

**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.

**Dow AgroSciences Limited**

Latchmore Court, Brand Street,

Hitchin, Hertfordshire, SG5 1NH.

Telephone: Hitchin +44 (0) 1462 457272 Fax: +44 (0) 1462 426605

24 Hour Emergency Telephone Number: + 44 (0) 1553 761251

SPECIMEN

# Safety Data Sheet

This Safety Data Sheet does not form part of the approved product label.

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

### 1.1 Product identifier

**Product name:** Flexidor Herbicide

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

**Identified uses:** Plant Protection Product

### 1.3 Details of the supplier of the safety data sheet

#### COMPANY IDENTIFICATION

DOW AGROSCIENCES LIMITED

LATCHMORE COURT

BRAND STREET

HITCHIN

England

SG5 1NH

UNITED KINGDOM

**Customer Information Number:**

[SDSQuestion@dow.com](mailto:SDSQuestion@dow.com)

### 1.4 EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 00 31 115 694 982

**Local Emergency Contact:** 00 31 115 694 982

## SECTION 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008:**

Acute aquatic toxicity - Category 1 - H400

Chronic aquatic toxicity - Category 1 - H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 Label elements

**Labelling according to Regulation (EC) No 1272/2008:**

## Hazard pictograms



**Signal word:** WARNING

### Hazard statements

H410 Very toxic to aquatic life with long lasting effects.

### Precautionary statements

P391 Collect spillage.

P501 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.

### Supplemental information

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

EUH208 Contains: 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

### 2.3 Other hazards

no data available

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

This product is a mixture.

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
CASRN 82558-50-7 EC-No. 407-190-8 Index-No. 616-043-00-9	-	45.5%	Isoxaben (ISO)	Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410



CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
CASRN 57-55-6 EC-No. 200-338-0 Index-No. —	01-2119456809-23	< 5.0 %	Propylene glycol	Not classified

If present in this product, any not classified components disclosed above for which no country specific OEL value(s) is(are) indicated under Section 8, are being disclosed as voluntarily disclosed components. For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control centre or doctor for treatment advice.

**Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

**Eye contact:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control centre or doctor for treatment advice.

**Ingestion:** No emergency medical treatment necessary.

**4.2 Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control centre or doctor, or going for treatment.

## SECTION 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

**Suitable extinguishing media:** To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Unsuitable extinguishing media:** no data available

### 5.2 Special hazards arising from the substance or mixture

**Hazardous combustion products:**

Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

### 5.3 Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**6.2 Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.



<b>Odour Threshold</b>	No test data available
<b>pH</b>	7.7 1% pH Electrode (1% aqueous suspension)
<b>Melting point/range</b>	Not applicable
<b>Freezing point</b>	No test data available
<b>Boiling point (760 mmHg)</b>	> 100 °C
<b>Flash point</b>	<b>closed cup</b> > 100 °C
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	No
<b>Lower explosion limit</b>	No test data available
<b>Upper explosion limit</b>	No test data available
<b>Vapour Pressure</b>	Not applicable
<b>Relative Vapour Density (air = 1)</b>	No test data available
<b>Relative Density (water = 1)</b>	1.09 at 20 °C / 4 °C
<b>Water solubility</b>	No test data available
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Auto-ignition temperature</b>	> 400 °C <i>Unspecified</i>
<b>Decomposition temperature</b>	No test data available
<b>Kinematic Viscosity</b>	Not applicable
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	No significant increase (>5C) in temperature.

## 9.2 Other information

**Molecular weight** no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## SECTION 10. STABILITY AND REACTIVITY

**10.1 Reactivity:** No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability:** Thermally stable at typical use temperatures.

**10.3 Possibility of hazardous reactions:** Polymerization will not occur.

**10.4 Conditions to avoid:** Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

**10.5 Incompatible materials:** None known.

**10.6 Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Nitrogen oxides. Toxic gases are released during decomposition.

## SECTION 11. TOXICOLOGICAL INFORMATION

*Toxicological information appears in this section when such data is available.*

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product:

LD50, Rat, > 5,000 mg/kg No deaths occurred at this concentration.

##### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product:

LD50, Rat, > 5,000 mg/kg No deaths occurred at this concentration.

##### Acute inhalation toxicity

No adverse effects are anticipated from inhalation. Based on the available data, respiratory irritation was not observed.

As product:

LC50, Rat, male and female, dust/mist, > 5.71 mg/l No deaths occurred at this concentration.

#### Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

#### Serious eye damage/eye irritation

Essentially nonirritating to eyes.

#### Sensitization

For similar material(s):

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:

No relevant data found.

#### Specific Target Organ Systemic Toxicity (Single Exposure)

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### **Specific Target Organ Systemic Toxicity (Repeated Exposure)**

For the active ingredient(s):

In animals, effects have been reported on the following organs:

Liver.

Kidney.

### **Carcinogenicity**

For the active ingredient(s): An increase in nonmalignant liver tumors was observed with isoxaben in one of two species tested.

### **Teratogenicity**

For the active ingredient(s): Has caused birth defects in laboratory animals only at doses toxic to the mother.

### **Reproductive toxicity**

For the active ingredient(s): In animal studies, has been shown to interfere with reproduction in females. Effects have been seen only at doses that produced significant toxicity to the parent animals.

### **Mutagenicity**

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were predominantly negative.

### **Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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## **SECTION 12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

### **12.1 Toxicity**

#### **Acute toxicity to fish**

Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).

LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, > 200 mg/l, OECD Test Guideline 203

#### **Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), static test, 48 Hour, 544 mg/l, OECD Test Guideline 202

#### **Acute toxicity to algae/aquatic plants**

ErC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 60.21 mg/l, OECD Test Guideline 201

EbC50, Lemna minor (duckweed), static test, 14 d, Biomass, 0.044 mg/l

### **Chronic aquatic toxicity**

#### **Chronic toxicity to fish**

Information refers to the main component.

NOEC, Pimephales promelas (fathead minnow), semi-static test, 33 d, growth, 0.4 mg/l

#### **Chronic toxicity to aquatic invertebrates**

Information refers to the main component.

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, growth, 0.69 mg/l

### **Toxicity to Above Ground Organisms**

contact LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

oral LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

### **Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), 14 d, mortality, > 1,000 mg/kg

## **12.2 Persistence and degradability**

### **Isoxaben (ISO)**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Biodegradation rate may increase in soil and/or water with acclimation.

10-day Window: Fail

**Biodegradation:** 1 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301B or Equivalent

**Theoretical Oxygen Demand:** 1.98 mg/mg

**Chemical Oxygen Demand:** 1.77 mg/g

### **Stability in Water (1/2-life)**

Hydrolysis, half-life, > 5 d, pH 7.0

### **Photodegradation**

**Test Type:** Half-life (direct photolysis)

**Method:** Measured

### **Photodegradation**

**Test Type:** Half-life (direct photolysis)

### Photodegradation

**Test Type:** Half-life (indirect photolysis)

**Sensitizer:** OH radicals

**Atmospheric half-life:** 0.628 Hour

**Method:** Estimated.

### Propylene glycol

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

**Biodegradation:** 81 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

**Biodegradation:** 96 %

**Exposure time:** 64 d

**Method:** OECD Test Guideline 306 or Equivalent

### 12.3 Bioaccumulative potential

#### Isoxaben (ISO)

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** 3.9 at 20 °C Measured

**Bioconcentration factor (BCF):** 70.5 Lepomis macrochirus (Bluegill sunfish) 28 d Measured

#### Propylene glycol

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** -1.07 Measured

**Bioconcentration factor (BCF):** 0.09 Estimated.

### 12.4 Mobility in soil

#### Isoxaben (ISO)

Potential for mobility in soil is low (Koc between 500 and 2000).

**Partition coefficient(Koc):** 700 - 1290

#### Propylene glycol

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient(Koc):** < 1 Estimated.

### 12.5 Results of PBT and vPvB assessment

#### Isoxaben (ISO)

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).

#### Propylene glycol

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).

### 12.6 Other adverse effects

#### Isoxaben (ISO)

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

#### Propylene glycol

This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

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## SECTION 13. DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

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## SECTION 14. TRANSPORT INFORMATION

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### Classification for ROAD and Rail transport (ADR/RID):

<b>14.1</b>	<b>UN number</b>	UN 3082
<b>14.2</b>	<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Isoxaben)
<b>14.3</b>	<b>Class</b>	9
<b>14.4</b>	<b>Packing group</b>	III

- 14.5 Environmental hazards** Isoxaben  
**14.6 Special precautions for user** Hazard identification No: 90

#### Classification for SEA transport (IMO-IMDG):

- 14.1 UN number** UN 3082  
**14.2 Proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Isoxaben)  
**14.3 Class** 9  
**14.4 Packing group** III  
**14.5 Environmental hazards** Isoxaben  
**14.6 Special precautions for user** EmS: F-A, S-F  
**14.7 Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code** Consult IMO regulations before transporting ocean bulk

#### Classification for AIR transport (IATA/ICAO):

- 14.1 UN number** UN 3082  
**14.2 Proper shipping name** Environmentally hazardous substance, liquid, n.o.s.(Isoxaben)  
**14.3 Class** 9  
**14.4 Packing group** III  
**14.5 Environmental hazards** Not applicable  
**14.6 Special precautions for user** No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## SECTION 15. REGULATORY INFORMATION

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

#### REACH Regulation (EC) No 1907/2006

This product contains only components that have been either pre-registered, registered, are exempt from registration or are regarded as registered according to Regulation (EC) No. 1907/2006 (REACH)., The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate

as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

### Seveso II - Directive 2003/105/EC amending Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

Listed in Regulation: Not applicable

#### Other regulations

Registration Number: MAPP 05121

### 15.2 Chemical Safety Assessment

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

## SECTION 16. OTHER INFORMATION

### Full text of H-Statements referred to under sections 2 and 3.

- H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) No 1272/2008

- Aquatic Acute - 1 - H400 - On basis of test data.  
Aquatic Chronic - 1 - H410 - Calculation method

#### Revision

Identification Number: 101200104 / A293 / Issue Date: 16.07.2015 / Version: 5.1

DAS Code: EAF-496

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

#### Legend

GB EH40	UK. EH40 WEL - Workplace Exposure Limits
TWA	Long-term exposure limit (8-hour TWA reference period)
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

### Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LIMITED urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in

this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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**SPECIMEN**



Product Identifier according to Art. 18 of Reg. (EC) No 1272/2008 (CLP): Flexidor®  
**WARNING**

**Very toxic to aquatic life with long lasting effects**  
Collect Spillage  
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.

Contains 1,2-benzisothiazolin-3-one. May produce an allergic reaction.

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

#### IMPORTANT INFORMATION.

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL/FORESTRY HERBICIDE

**Crops/Situations:** } WINTER WHEAT, BARLEY, RYE, OAT TRITICALE, CHERRIES, PLUMS, APPLE AND PEAR ORCHARDS, STRAWBERRY, BERRIES, HOPS, ORNAMENTAL PLANT PRODUCTION, FORESTRY, AMENITY VEGETATION.

**Maximum Individual Dose:** }  
**Maximum Number of Treatments:** } Full details are given in the Important Information Area on the attached leaflet  
**Latest Time of Application:** }

**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.**



Dow AgroSciences



# Flexidor®

## HERBICIDE

Product Registration Number: MAFF 05121

A suspension concentrate containing 500 g/litre (12.14% w/w) isoxaben.

A residual herbicide for the control of BROAD-LEAVED WEEDS in WINTER AND SPRING WHEAT, BARLEY and OATS, RYE, TRITICALE, DURUM WHEAT, TOP, BUSH, CANE FRUIT, STRAWBERRY, GRAPEVINE and HOP, ORNAMENTAL PLANT PRODUCTION, FORESTRY and AMENITY VEGETATION.

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

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

**READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.**

**STORE IN AREAS FREE OF FROST.**

# 0.5 Litres e

®Trademark of the Dow Chemical Company (Dow) or an affiliate company of Dow

This label is compliant with the CPA Voluntary Initiative Guidance



#### SAFETY PRECAUTIONS

##### Operator protection:

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

- Operators must wear suitable protective clothing (coveralls), suitable protective gloves, rubber boots and face protection (faceshield) when handling the concentrate.
- Operators must wear suitable protective clothing (coveralls), suitable protective gloves and rubber boots when applying by hand-held equipment.
- Operators must 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.

WASH HANDS AND EXPOSED SKIN before meals and after work.

WHEN USING DO NOT EAT, DRINK OR SMOKE.

##### Environmental protection:

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

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. DO NOT ALLOW DIRECT SPRAY from hand-held sprayers to fall within 1 m of the top of the bank of a static or flowing water body Aim spray away from water.

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.