



Dow AgroSciences



# ASTROKERB

Herbicide

Product Registration Number: MAPP 16184

A suspension concentrate containing 500 g/ litre propyzamide and 5.3 g/ litre aminopyralid (present as 6.3 g/litre aminopyralid potassium salt).

A foliar and residual herbicide for the control of a wide range of weeds in WINTER OILSEED RAPE.

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.**

## 10 Litres e

Dow AgroSciences Limited  
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This label is compliant with the CPA Voluntary Initiative Guidance.

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A foliar and residual herbicide for the control of a wide range of weeds in WINTER OILSEED RAPE.

### 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 GLOVES when handling the concentrate 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.

WASH HANDS before meals and after work.

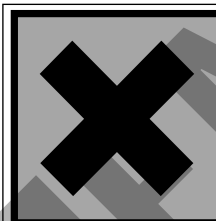
#### Environmental protection:

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.

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

#### Storage and disposal:

STORE IN ORIGINAL CONTAINER, tightly closed, in a safe place. EMPTY CONTAINER COMPLETELY and dispose of safely.



**HARMFUL**



**DANGEROUS FOR THE ENVIRONMENT**

**LIMITED EVIDENCE OF CARCINOGENIC EFFECT.**

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

WEAR SUITABLE PROTECTIVE CLOTHING AND GLOVES.

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY.

USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION.

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.

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

### IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

<b>Crops/Situations:</b>	} Oilseed rape (winter)
<b>Maximum Individual Dose:</b>	}
<b>Maximum Number of Treatments:</b>	} Full details are given in the Important Information
<b>Latest Time of Application:</b>	} Area on the attached leaflet
<b>Other Specific Restrictions:</b>	}

**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.**

## 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/Situations	Maximum Individual Dose (litres product/hectare)	Maximum Number of Treatments	Latest Time of Application
Oilseed rape (winter)	1.7	One per crop	Before 1 <sup>st</sup> February in year of harvest

#### Other Specific Restrictions:

Do not harvest crops for human or animal consumption for at least 6 weeks after application.

Livestock must be kept out of treated areas for at least 1 week following treatment and until poisonous weeds such as ragwort have died and become unpalatable.

Users must have received adequate instruction, training and guidance in the safe and efficient use of the product and must take all reasonable precautions to protect the health of human beings and non-target organisms and safeguard the environment.

The product must not be used on land where vegetation will be cut for animal feed, fodder or bedding nor for composting or mulching within one calendar year of treatment.

Following crops (winter and spring wheat) should not be planted within 30 weeks of application of ASTROKERB.

**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

ASTROKERB contains aminopyralid, traces of this material in oilseed rape straw can damage sensitive crops. Aminopyralid residues in plant tissues which have not completely decayed may affect succeeding susceptible crops e.g. peas, beans and other legumes, sugar beet, fodder beet, carrots and umbelliferae, potatoes and tomatoes, lettuce and other compositae. Therefore following good agricultural practice ensure that all remains of the oilseed rape crop have completely decayed before planting susceptible crops.

DO NOT remove oilseed rape straw from the field.

DO NOT feed animals with treated oilseed rape straw.

DO NOT use oilseed rape straw for animal bedding.

DO NOT use oilseed rape straw for composting or mulching.

Take care to avoid local overdosing.

Do not make more than one application of ASTROKERB to any one crop.

If animals are inadvertently fed or bedded on oilseed rape straw treated with ASTROKERB, do not use animal waste for composting.

Do not use on crops grown for seed.

## Neighbouring Crops/Plants

Avoid damage by drift onto susceptible crops, non-target plants or waterways. Do not apply directly to, or allow spray drift to come into contact with agricultural or horticultural crops, amenity plantings, gardens, ponds, lakes or watercourses.

## SOIL TYPES

ASTROKERB can be used on all soil types except those containing more than 10% organic matter.

## SOIL AND WEATHER CONDITIONS

ASTROKERB requires moisture for root uptake. Best residual action is obtained in moist soils of fine tilth.

ASTROKERB can be applied under frosty conditions but should not be used where run-off from the soil surface is likely.

Best results are achieved when growth of weeds (especially blackgrass and volunteer cereals) is slow, but transpiration continues. In mild autumns/winters, emerged weeds may take longer to be controlled, the residual activity of ASTROKERB will be shortened and overall control may be reduced.

The efficacy of ASTROKERB may be reduced in organic soils and in the presence of excessive surface organic debris, burnt straw, ash, or ploughed-up turf.

## RESISTANCE

Strains of some annual grasses (e.g. blackgrass, wild oats, Italian ryegrass) 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 developed by the Weed Resistance Action Group and copies are available from the HGCA, CPA, your distributor, crop adviser or product manufacturer.

## WINTER OILSEED RAPE

ASTROKERB can be applied after the use of an approved specific graminicide applied in accordance with the manufacturers' recommendations.

## WATER VOLUMES

Apply ASTROKERB in 200 to 300 litres of water per hectare.

Ensure good ground cover.

## APPLICATION EQUIPMENT

Application should be made through a ground crop sprayer.

**Do not** apply through broadcast air-assisted sprayers.

## CROP RECOMMENDATION TABLES

S = Susceptible MS = Moderately susceptible MR = Moderately resistant R = Resistant

Crop	Rate of Use	Weed Species	Stage of Weed Growth			Time of Year	Timing Stage of Crop	Soil Type (Soil Texture (85 System))
			Germinating	Up to 2 leaf	Established*			
Winter oilseed rape	1.5 L/ha	Annual meadow-grass, barren brome, volunteer cereals, wild-oat	S	S	S	1 <sup>st</sup> October to 31 <sup>st</sup> January	As soon as possible after 3rd true leaf stage  Crop selectivity is by depth protection. Factors which cause shallow rooting may reduce crop selectivity	All soils with less than 10% organic matter
		Common chickweed <sup>1</sup> , mayweed, common poppy	S	S	S <sup>1</sup>			
		Blackgrass <sup>2</sup>	S	S	MS <sup>2</sup>			
		Black-bindweed, black nightshade, fat-hen, knotgrass, redshank, small nettle, speedwells	S	S	MR			
		Field forget-me-not	MS	MS	R			
	Cleavers	MS	MR	R				
	1.0 L/ha - Use this rate only where a specific graminicide has controlled volunteer cereals and grassweeds and chickweed is not a problem	Annual meadow-grass, volunteer cereals, wild-oat	S	S	S			
		Black-bindweed, black nightshade, common chickweed, fat-hen, knotgrass, redshank, small nettle	S	S	R			
Speedwells		S	R	R				

\* Established = 3-4 true leaves to flower bud development stage.

### NOTES FOR CROP RECOMMENDATION TABLES

1	Chickweed control may be reduced where it is well established (over 10 cm in diameter)
2	<p><b>CONTROL OF BLACKGRASS</b></p> <p>Established (well-tillered) blackgrass is moderately susceptible: Where populations of blackgrass and/or volunteer cereals exceed 50/m<sup>2</sup> ASTROKERB should be applied in tank mix with an approved graminicide, or following an effective approved graminicide to ensure optimum weed control.</p> <p>Deeper germinating blackgrass within the soil profile could reduce product efficacy.</p> <p>Where partial resistance (R* or RR*) to the partner graminicide is known to exist the dose of ASTROKERB may be increased to 1.7 L/ha. This may also be done if applications are made early in the season, under warm conditions and an increase in the duration of residual control is required (see 'Soil and Weather Conditions' above).</p> <p>Where high levels of resistance (RRR*) to the partner graminicide occurs there is no advantage of adding this graminicide to ASTROKERB for blackgrass control, and ASTROKERB even at 1.7 L/ha will not give acceptable levels of established black-grass control in these circumstances.</p> <p>* R = 1* RR = 2*/3* RRR = 4*/5*</p>

## **FOLLOWING CROPS**

Winter cereals and spring cereals only.

Treated land must be mouldboard ploughed to a depth of 15 cm prior to drilling a following cereal crop.

Please consult Dow AgroSciences if a treated crop fails because of bad growing conditions.

## **MIXING**

Add half the required volume of water to the spray tank and begin agitation. Add the recommended quantity of ASTROKERB. Agitate while topping up the tank and continue agitation until spraying is complete.

## **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 ASTROKERB.

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.

## **TRADEMARK ACKNOWLEDGEMENTS**

### **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.

# Safety Data Sheet

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

## Section 1. Identification of the substance/preparation and of the company/undertaking

### 1.1 Product identifiers

**Product Name**  
AstroKerb

Revised: May 2013

### 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  
A Subsidiary of The Dow Chemical Company  
Latchmore Court, Brand Street  
SG5 1NH Hitchin  
United Kingdom

[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 EU Directives 67/548/EEC or 1999/45/EC

	Carcinogenic Category	R	D	Limited evidence of a carcinogenic effect.
N	R40	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	

### 2.2 Label elements

#### Labelling according to EC Directives

##### Hazard Symbol:

Xn - Harmful.  
N - Dangerous for the environment.

##### Risk Phrases :

R40 - Limited evidence of a carcinogenic effect.  
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

##### Safety Phrases :

SP 1 - 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).

S35 - This material and its container must be disposed of in a safe way.

S36/37 - Wear suitable protective clothing and gloves.

S57 - Use appropriate containment to avoid environmental contamination.

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

### 2.3 Other Hazards

No information available.

## Section 3. Composition/information on ingredients

### 3.2 Mixture

This product is a mixture.

CAS-No. / EC-No. / Index	REACH No.	Amount	Component	Classification: REGULATION (EC) No 1272/2008
CAS-No. 23950-58-5 EC-No. 245-951-4 Index 616-055-00-4	—	43.7 %	propyzamide (ISO);	Carc., 2, H351 Aquatic Acute, 1, H400 Aquatic Chronic, 1, H410
CAS-No. 566191-87-5 EC-No. Not available	—	0.6 %	Aminopyralid Potassium##	Not classified
CAS-No. 57-55-6 EC-No. 200-338-0	01-2119456809-23	< 5.0 %	Propylene glycol#	Not classified

CAS-No. / EC-No. / Index	Amount	Component	Classification: 67/548/EEC
CAS-No. 23950-58-5 EC-No. 245-951-4 Index 616-055-00-4	43.7 %	propyzamide (ISO);	Carc. 3: R40; N: R50, R53
CAS-No. 566191-87-5 EC-No. Not available	0.6 %	Aminopyralid Potassium##	Not classified.
CAS-No. 57-55-6 EC-No. 200-338-0	< 5.0 %	Propylene glycol#	Not classified.

# Substance(s) with an Occupational Exposure Limit.

## Voluntarily disclosed component(s).

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

See Section 16 for full text of R-phrases.

## 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:** No emergency medical treatment necessary.

**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. Suitable emergency safety shower facility should be available in work area.

**Flush eyes** thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**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), no additional symptoms and effects are anticipated.

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

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. Fire Fighting Measures

### 5.1 Extinguishing Media

To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

### 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. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn.

### 5.3 Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. 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). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

## 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.

**6.3 Methods and materials for containment and cleaning up:** Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

## Section 7. Handling and Storage

### 7.1 Precautions for safe handling

**General Handling:** Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapour or mist. Wash thoroughly after

handling. Use with adequate ventilation. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

### 7.2 Conditions for safe storage, including any incompatibilities

**Storage**  
Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

### 7.3 Specific end uses

Refer to product label.

## Section 8. Exposure Controls / Personal Protection

### 8.1 Control parameters

Component	List	Type	Value
Propylene glycol	Ireland OELV	TWA Particulate.	10 mg/m3
	UK WEL	TWA Particulate.	10 mg/m3
	UK WEL	TWA Total vapour and particulates.	474 mg/m3 150 ppm
	WEEL	TWA Aerosol.	10 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS, APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

### 8.2 Exposure controls

#### Personal Protection

**Eye/Face Protection:** Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

**Skin Protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Hand protection:** Use chemical resistant gloves classified under Standard EN374:

Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Respiratory Protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection

when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapour cartridge with a particulate pre-filter, type AP2.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

#### Engineering Controls

**Ventilation:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

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## Section 9. Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical State	Liquid.
Colour	Brown
Odour	Mild
Odour Threshold	No test data available
pH	7.2 (@ 1 %) <i>pH Electrode</i> (1% aqueous suspension)
Melting Point	Not applicable
Freezing Point	No test data available
Boiling Point (760 mmHg)	No test data available.
Flash Point - Closed Cup	> 100 °C <i>Pensky-Martens Closed Cup ASTM D 93</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammable Limits In Air	<b>Lower:</b> No test data available <b>Upper:</b> No test data available

#### Vapour Pressure

#### Vapour Density (air = 1)

#### Specific Gravity (H2O = 1)

#### Solubility in water (by weight)

#### Partition coefficient,

#### n-octanol/water (log Pow)

#### Autoignition Temperature

#### Decomposition Temperature

#### Kinematic Viscosity

#### Explosive properties

#### Oxidizing properties

### 9.2 Other information

Liquid Density	1.139 g/ml @ 20.0 °C <i>Digital density meter</i>
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## 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:** Some components of this product can decompose at elevated temperatures.

**10.5 Incompatible Materials:** Avoid contact with: Strong oxidizers.

### 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: Hydrogen chloride. Nitrogen oxides.

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## Section 11. Toxicological Information

### 11.1 Information on toxicological effects

#### Acute Toxicity

##### Ingestion

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

As product: LD<sub>50</sub>, rat, female > 5,000 mg/kg

##### Aspiration hazard

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

##### Dermal

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

As product: LD<sub>50</sub>, Rat > 5,000 mg/kg

##### Inhalation

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

As product: LC<sub>50</sub>, 4 h, Aerosol, rat > 5.5 mg/l

No deaths occurred at this concentration.

##### Eye damage/eye irritation

Essentially nonirritating to eyes.

##### Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness.

##### Sensitisation

##### Skin

Did not cause allergic skin reactions when tested in guinea pigs.

##### Respiratory

No relevant data found.

##### Repeated Dose Toxicity

For the active ingredient(s): In animals, effects have been reported on the following organs: Adrenal gland. Gastrointestinal tract. Kidney. Liver. Ovaries. Pancreas. Thyroid. In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

##### Chronic Toxicity and Carcinogenicity

For the active ingredient(s): Propylzamide. Has caused cancer in laboratory animals.

##### Developmental Toxicity

For the active ingredient(s): Propylzamide. Has been toxic to the foetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

##### Reproductive Toxicity

For the active ingredient(s): Propylzamide. In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

##### Genetic Toxicology

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



## Section 12. Ecological Information

### 12.1 Toxicity

Material is toxic to aquatic organisms (LC<sub>50</sub>/EC<sub>50</sub>/IC<sub>50</sub> between 1 and 10 mg/L in the most sensitive species).

#### Fish Acute & Prolonged Toxicity

LC<sub>50</sub>, rainbow trout (*Oncorhynchus mykiss*), static test, 96 h: > 30.4 mg/l

#### Aquatic Invertebrate Acute Toxicity

EC<sub>50</sub>, water flea *Daphnia magna*, static test, 48 h: > 34.5 mg/l

#### Aquatic Plant Toxicity

ErC<sub>50</sub>, *Pseudokirchneriella subcapitata* (green algae), Growth inhibition, 72 h: 6.4 mg/l

ErC<sub>50</sub>, Lemna gibba, Growth inhibition, 7 d: 5.5 mg/l

#### Toxicity to Above Ground Organisms

oral LD<sub>50</sub>, *Apis mellifera* (bees): > 330.25 micrograms/bee

contact LD<sub>50</sub>, *Apis mellifera* (bees): > 300 micrograms/bee

### 12.2 Persistence and Degradability

Data for Component: **propyzamide (ISO)**:

Biodegradation may occur under aerobic conditions (in the presence of oxygen).

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

; pH 5 - 9: Stable

Data for Component: **Aminopyralid Potassium**

For similar active ingredient(s), Aminopyralid. Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

Data for Component: **Propylene glycol**

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

#### OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
81 %	28 d	OECD 301F Test	pass
96 %	64 d	OECD 306 Test	Not applicable

### 12.3 Bioaccumulative potential

Data for Component: **propyzamide (ISO)**:

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

**Partition coefficient, n-octanol/water (log Pow):** 3

**Bioconcentration Factor (BCF):** 49; *Lepomis macrochirus* (Bluegill sunfish)

Data for Component: **Aminopyralid Potassium**

**Bioaccumulation:** For similar active ingredient(s), Aminopyralid.

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

Data for Component: **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

Data for Component: **propyzamide (ISO)**:

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

**Partition coefficient, soil organic carbon/water (Koc):** 840 Measured

**Henry's Law Constant (H):** 7.6E-04 Pa\*m<sup>3</sup>/mole.

Data for Component: **Aminopyralid Potassium**

**Mobility in soil:** For similar active ingredient(s), Aminopyralid., Potential for mobility in soil is very high (Koc between 0 and 50).

Data for Component: **Propylene glycol**

**Mobility in soil:** 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, soil organic carbon/water (Koc):** < 1 Estimated.

**Henry's Law Constant (H):** 1.2E-08 atm\*m<sup>3</sup>/mole Measured

### 12.5 Results of PBT and vPvB assessment

Data for Component: **propyzamide (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).

Data for Component: **Aminopyralid Potassium**

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).

Data for Component: **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

Data for Component: **propyzamide (ISO)**:

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

Data for Component: **Aminopyralid Potassium**

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

Data for Component: **Propylene glycol**

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

## Section 13. Disposal Considerations

### 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.

## Section 14. Transport Information

### ADR/RID

#### 14.1 UN number

UN3082

#### 14.2 UN proper shipping name

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
Technical Name: Propyzamide

**14.3 Transport hazard class(es)**

Hazard Class: 9

**14.4 Packing Group**

PG III

**14.5 Environmental hazards**

Environmentally hazardous

**14.6 Special precautions for user**

Special Provisions: no data available

Hazard identification No:90

**ADNR / ADN****14.1 UN number**

UN3082

**14.2 UN proper shipping name**

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name: Propyzamide

**14.3 Transport hazard class(es)**

Hazard Class: 9

**14.4 Packing Group**

PG III

**14.5 Environmental hazards**

Environmentally hazardous

**14.6 Special precautions for user**

no data available

**IMDG****14.1 UN number**

UN3082

**14.2 UN proper shipping name**

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name: Propyzamide

**14.3 Transport hazard class(es)**

Hazard Class: 9

**14.4 Packing Group**

PG III

**14.5 Environmental hazards**

Marine pollutant

**14.6 Special precautions for user**

EMS Number: F-A,S-F

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**ICAO/IATA****14.1 UN number**

UN3082

**14.2 UN proper shipping name**

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name: Propyzamide

**14.3 Transport hazard class(es)**

Hazard Class: 9

**14.4 Packing Group**

PG III

**14.5 Environmental hazards**

Environmentally hazardous

**14.6 Special precautions for user**

no data available

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**Section 15. Regulatory Information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****European Inventory of Existing Commercial Chemical Substances (EINECS)**

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

Product Registration Number: MAPP 16184

**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.

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**Section 16. Other Information****Hazard statement in the composition section**

H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Risk-phrases in the Composition section**

R40	Limited evidence of a carcinogenic effect.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Revision**

Identification Number: 1027459 / 3027 / Issue Date 2013/05/21 / Version: 0

DAS Code: GF-2540

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

*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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# ASTROKERB

## HERBICIDE

Product Registration Number: MAPP 16184

A suspension concentrate containing 500 g/ litre propyzamide and 5.3 g/ litre aminopyralid (present as 6.3 g/litre aminopyralid potassium salt).

A foliar and residual herbicide for the control of a wide range of weeds in WINTER OILSEED RAPE.

### 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 GLOVES when handling the concentrate 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.

WASH HANDS before meals and after work.

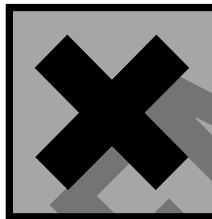
#### Environmental protection:

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.

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

#### Storage and disposal:

STORE IN ORIGINAL CONTAINER, tightly closed, in a safe place. EMPTY CONTAINER COMPLETELY and dispose of safely.



**HARMFUL**



**DANGEROUS  
FOR THE  
ENVIRONMENT**

LIMITED EVIDENCE OF CARCINOGENIC EFFECT.

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

WEAR SUITABLE PROTECTIVE CLOTHING AND GLOVES.

THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY.

USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION.

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.

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

### IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

<b>Crops/Situations:</b>	Oilseed rape (winter)
<b>Maximum Individual Dose:</b>	}
<b>Maximum Number of Treatments:</b>	} Full details are given in the Important Information
<b>Latest Time of Application:</b>	} Area on the attached leaflet
<b>Other Specific Restrictions:</b>	}

**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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