

# SAFETY DATA SHEET

DOW AGROSCIENCES LIMITED

Safety Data Sheet according to Reg. (EU) No 453/2010

**Product name:** SYNERO™ Herbicide

**Revision Date:** 27.11.2014

**Version:** 4.1

**Print Date:** 09.04.2015

DOW AGROSCIENCES LIMITED encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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

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### 1.1 Product identifiers

**Product name:** SYNERO™ 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:** 0031 115 694 982

**Local Emergency Contact:** 00 31 115 69 4982

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## SECTION 2. HAZARDS IDENTIFICATION

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### 2.1 Classification of the substance or mixture

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

Aspiration hazard - Category 1 - Aspiration hazard - H304

Serious eye damage - Category 1 - H318

Specific target organ toxicity - single exposure - Category 3 - Narcotic effects. - H336

Chronic aquatic toxicity - Category 2 - H411

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

**Classification according to EU Directives 67/548/EEC or 1999/45/EC:**

Irritant - R38

Irritant - R41

R67

Dangerous for the environment - R51/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

## 2.2 Label elements

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

### Hazard pictograms



Signal word: DANGER

### Hazard statements

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H336 May cause drowsiness or dizziness.

H411 Toxic to aquatic life with long lasting effects.

### Supplemental Hazard Statements

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

### Precautionary statements

P261 Avoid breathing vapours.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P404 Store in a closed container.

P501 Dispose of contents/container to a licensed waste disposal contractor or collection site except for empty clean triple rinsed containers which can be disposed of as non-hazardous waste.

### Supplemental information

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

## 2.3 Other hazards

no data available

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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### 3.2 Mixture

This product is a mixture.

<b>CASRN / EC-No. / Index-No.</b>	<b>REACH Registration Number</b>	<b>Concentration</b>	<b>Component</b>	<b>Classification: REGULATION (EC) No 1272/2008</b>
<b>CASRN</b> 81406-37-3 <b>EC-No.</b> 279-752-9 <b>Index-No.</b> 607-272-00-5	–	14.2%	fluroxypyr-meptyl (ISO)	Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
<b>CASRN</b> 566191-87-5 <b>EC-No.</b> Not available <b>Index-No.</b> –	–	3.5%	Aminopyralid Potassium	Not classified
<b>CASRN</b> Not Available <b>EC-No.</b> 918-811-1 <b>Index-No.</b> –	01-2119463583-34	> 30.0 - < 40.0 %	Hydrocarbons, C10, aromatics, <1% naphthalene	STOT SE - 3 - H336 Asp. Tox. - 1 - H304 Aquatic Chronic - 2 - H411
<b>CASRN</b> 34590-94-8 <b>EC-No.</b> 252-104-2 <b>Index-No.</b> –	01-2119450011-60	> 20.0 - < 30.0 %	Dipropylene glycol monomethyl ether	Not classified
<b>CASRN</b> 32612-48-9 <b>EC-No.</b> 608-760-0 <b>Index-No.</b> –	–	< 5.0 %	Poly(oxy-1,2- ethanediyl), .alpha.- sulfo-.omega.- (dodecyloxy)-, ammonium salt	Skin Irrit. - 2 - H315 Eye Irrit. - 2 - H319
<b>CASRN</b> 107-41-5 <b>EC-No.</b> 203-489-0 <b>Index-No.</b> 603-053-00-3	01-2119539582-35	< 5.0 %	2-methylpentane- 2,4-diol	Skin Irrit. - 2 - H315 Eye Irrit. - 2 - H319

<b>CASRN</b> 91-20-3 <b>EC-No.</b> 202-049-5 <b>Index-No.</b> 601-052-00-2	–	< 1.0 %	Naphthalene	Acute Tox. - 4 - H302 Carc. - 2 - H351 Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
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For the full text of the H-Statements mentioned in this Section, see Section 16.

<b>CASRN / EC-No. / Index-No.</b>	<b>Concentration</b>	<b>Component</b>	<b>Classification: 67/548/EEC</b>
<b>CASRN</b> 81406-37-3 <b>EC-No.</b> 279-752-9 <b>Index-No.</b> 607-272-00-5	14.2%	fluroxypyr-meptyl (ISO)	N - R50 - R53
<b>CASRN</b> 566191-87-5 <b>EC-No.</b> Not available <b>Index-No.</b> –	3.5%	Aminopyralid Potassium	Not classified
<b>CASRN</b> Not Available <b>EC-No.</b> 918-811-1 <b>Index-No.</b> –	> 30.0 - < 40.0 %	Hydrocarbons, C10, aromatics, <1% naphthalene	Xn - R65 N - R51/53 R66 R67
<b>CASRN</b> 34590-94-8 <b>EC-No.</b> 252-104-2 <b>Index-No.</b> –	> 20.0 - < 30.0 %	Dipropylene glycol monomethyl ether	Not classified
<b>CASRN</b> 32612-48-9 <b>EC-No.</b> 608-760-0 <b>Index-No.</b> –	< 5.0 %	Poly(oxy-1,2- ethanediyl), .alpha.- sulfo-.omega.- (dodecyloxy)-, ammonium salt	Xi - R36/38
<b>CASRN</b> 107-41-5 <b>EC-No.</b> 203-489-0 <b>Index-No.</b> 603-053-00-3	< 5.0 %	2-methylpentane-2,4- diol	Xi - R36/38
<b>CASRN</b> 91-20-3	< 1.0 %	Naphthalene	Carc.Cat.3 - R40 Xn - R22

<b>EC-No.</b> 202-049-5 <b>Index-No.</b> 601-052-00-2			N - R50 - R53
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For the full text of the R-phrases mentioned in this Section, see Section 16.

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## SECTION 4. FIRST AID MEASURES

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### 4.1 Description of first aid measures

**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). 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 center 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 center or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

**Ingestion:** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

**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:** Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting liver and kidney disease.

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## SECTION 5. FIREFIGHTING MEASURES

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### 5.1 Extinguishing media

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective. Water fog, applied gently may be used as a blanket for fire extinguishment.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

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

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.

**Unusual Fire and Explosion Hazards:** Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

### 5.3 Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment. 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.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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**6.1 Personal precautions, protective equipment and emergency procedures:** Evacuate area. Refer to section 7, Handling, for additional precautionary measures. Only trained and properly protected personnel must be involved in clean-up operations. Keep upwind of spill. Ventilate area of leak or spill. 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.

**6.4 Reference to other sections:** References to other sections, if applicable, have been provided in the previous sub-sections.

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## SECTION 7. HANDLING AND STORAGE

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**7.1 Precautions for safe handling:** Keep out of reach of children. Do not get in eyes. Wash thoroughly after handling. Do not swallow. Avoid breathing vapor. Use with adequate ventilation. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

**7.2 Conditions for safe storage, including any incompatibilities:** 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 use(s):** Refer to product label.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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### 8.1 Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
fluroxypyr-meptyl (ISO)	Dow IHG	TWA	10 mg/m <sup>3</sup>
Dipropylene glycol monomethyl ether	ACGIH	TWA	100 ppm
	ACGIH	STEL	150 ppm
	ACGIH	TWA	Absorbed via skin
	ACGIH	STEL	Absorbed via skin
	2000/39/EC	TWA	308 mg/m <sup>3</sup> 50 ppm
	2000/39/EC	TWA	Absorbed via skin
	IE OEL	OELV - 8 hrs (TWA)	Absorbed via skin
	IE OEL	OELV - 8 hrs (TWA)	308 mg/m <sup>3</sup> 50 ppm
2-methylpentane-2,4-diol	ACGIH	C	25 ppm
	IE OEL	OELV - 8 hrs (TWA)	125 mg/m <sup>3</sup> 25 ppm
	IE OEL	OELV - 15 min (STEL)	125 mg/m <sup>3</sup> 25 ppm
Naphthalene	ACGIH	TWA	10 ppm
	ACGIH	TWA	Absorbed via skin
	91/322/EEC	TWA	50 mg/m <sup>3</sup> 10 ppm
	IE OEL	OELV - 15 min (STEL)	75 mg/m <sup>3</sup> 15 ppm
	IE OEL	OELV - 8 hrs (TWA)	50 mg/m <sup>3</sup> 10 ppm

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

**Engineering controls:** 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. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent.

**Skin protection**

**Hand protection:** Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). 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.

**Other 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.

**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 vapor cartridge with a particulate pre-filter, type AP2.

**Environmental exposure controls**

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

**Appearance**

<b>Physical state</b>	Liquid.
<b>Color</b>	Brown
<b>Odor</b>	Mild
<b>Odor Threshold</b>	No test data available
<b>pH</b>	5.8 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>	No test data available
<b>Flash point</b>	<b>closed cup</b> > 100 °C CIPAC MT 12.3
<b>Evaporation Rate (Butyl Acetate = 1)</b>	No test data available
<b>Flammability (solid, gas)</b>	Not Applicable
<b>Lower explosion limit</b>	No test data available
<b>Upper explosion limit</b>	No test data available
<b>Vapor Pressure</b>	No test data available



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<b>Relative Vapor Density (air = 1)</b>	No test data available
<b>Relative Density (water = 1)</b>	1.012 at 20 °C / 4 °C <i>EC Method A3</i>
<b>Water solubility</b>	emulsifiable
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Auto-ignition temperature</b>	> 400 °C <i>EC Method A15</i>
<b>Decomposition temperature</b>	No test data available
<b>Dynamic Viscosity</b>	No test data available
<b>Kinematic Viscosity</b>	13.1 mm <sup>2</sup> /s
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	No

#### 9.2 Other information

<b>Liquid Density</b>	1.012 g/cm <sup>3</sup> at 20 °C <i>Digital density meter</i>
<b>Molecular weight</b>	no data available
<b>Surface tension</b>	31.6 mN/m at 25 °C <i>EC Method A5</i>

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

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## SECTION 10. STABILITY AND REACTIVITY

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**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. Toxic gases are released during decomposition.

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## SECTION 11. TOXICOLOGICAL INFORMATION

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*Toxicological information on this product or its components appear 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, female, > 5,000 mg/kg

**Acute dermal toxicity**

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

As product:

LD50, rat, male and female, > 5,000 mg/kg

**Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to mist. May cause dizziness and drowsiness. Based on the available data, respiratory irritation was not observed.

As product: The LC50 has not been determined. For similar material(s):

LC50, rat, 4 Hour, Aerosol, > 5.3 mg/l

**Skin corrosion/irritation**

Brief contact may cause slight skin irritation with local redness.

May cause drying and flaking of the skin.

**Serious eye damage/eye irritation**

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

**Sensitization**

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

For respiratory sensitization:

No relevant data found.

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

May cause drowsiness or dizziness.

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

For the active ingredient(s):

Fluroxypyr-meptyl.

Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

For similar active ingredient(s).

Aminopyralid.

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

Gastrointestinal tract.

For the minor component(s):

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

Kidney.

Respiratory tract.

Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

**Carcinogenicity**

Contains naphthalene which has caused cancer in some laboratory animals. In humans, there is limited evidence of cancer in workers involved in naphthalene production. Limited oral studies in rats were negative.

For similar active ingredient(s). Did not cause cancer in laboratory animals.

**Teratogenicity**

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

For similar active ingredient(s). Aminopyralid. Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

**Reproductive toxicity**

For the active ingredient(s): In animal studies, did not interfere with reproduction.

For the major component(s): In laboratory animal studies, effects on reproduction 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 negative.

**Aspiration Hazard**

May be fatal if swallowed and enters airways.

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## **SECTION 12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information on this product or its components appear in this section when such data is available.*

**12.1 Toxicity**

**Acute toxicity to fish**

Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 Hour, 6.42 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, *Daphnia magna* (Water flea), static test, 48 Hour, 28.7 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

ErC50, diatom *Navicula* sp., Growth inhibition, 72 Hour, 7.7 mg/l, OECD Test Guideline 201 or Equivalent

**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, *Colinus virginianus* (Bobwhite quail), > 2,250 mg/kg

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

contact LD50, Apis mellifera (bees), > 200micrograms/bee

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

LC50, Eisenia fetida (earthworms), 14 d, 710 mg/kg

#### **12.2 Persistence and degradability**

##### **fluroxypyr-meptyl (ISO)**

**Biodegradability:** Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail

**Biodegradation:** 32 %

**Exposure time:** 28 d

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

**Theoretical Oxygen Demand:** 2.2 mg/mg

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

, half-life, 454 d

##### **Aminopyralid Potassium**

**Biodegradability:** 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.

10-day Window: Fail

**Biodegradation:** 0 %

**Exposure time:** 28 d

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

##### **Hydrocarbons, C10, aromatics, <1% naphthalene**

**Biodegradability:** Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

##### **Dipropylene glycol monomethyl ether**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Pass

**Biodegradation:** 75 %

**Exposure time:** 28 d

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

##### **Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt**

**Biodegradability:** No relevant information found.

##### **2-methylpentane-2,4-diol**

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

10-day Window: Pass

**Biodegradation:** 81 %

**Exposure time:** 28 d

Method: OECD Test Guideline 301F or Equivalent

**Naphthalene**

**Biodegradability:** Material is expected to be readily biodegradable.

**12.3 Bioaccumulative potential**

**fluroxypyr-meptyl (ISO)**

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

**Partition coefficient: n-octanol/water(log Pow):** 5.04 Measured

**Bioconcentration factor (BCF):** 26 Oncorhynchus mykiss (rainbow trout) Measured

**Aminopyralid Potassium**

**Bioaccumulation:** For similar active ingredient(s). Aminopyralid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Hydrocarbons, C10, aromatics, <1% naphthalene**

**Bioaccumulation:** No data available for this product. For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

**Dipropylene glycol monomethyl ether**

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

**Partition coefficient: n-octanol/water(log Pow):** 1.01 Measured

**Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt**

**Bioaccumulation:** No relevant information found.

**2-methylpentane-2,4-diol**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3). No test data available

**Partition coefficient: n-octanol/water(log Pow):** 0.58 Estimated.

**Bioconcentration factor (BCF):** 3 Calculated.

**Naphthalene**

**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient: n-octanol/water(log Pow):** 3.3 Measured

**Bioconcentration factor (BCF):** 40 - 300 Fish. 28 d Measured

**12.4 Mobility in soil**

**fluroxypyr-meptyl (ISO)**

Expected to be relatively immobile in soil (Koc > 5000).

**Partition coefficient(Koc):** 6200 - 43000

**Aminopyralid Potassium**

For similar active ingredient(s).

Aminopyralid.

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

**Hydrocarbons, C10, aromatics, <1% naphthalene**

No relevant data found.

**Dipropylene glycol monomethyl ether**

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):** 0.28 Estimated.

**Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-(dodecyloxy)-, ammonium salt**

No data available.

**2-methylpentane-2,4-diol**

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

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

**Naphthalene**

Potential for mobility in soil is medium (Koc between 150 and 500).

**Partition coefficient(Koc):** 240 - 1300 Measured

**12.5 Results of PBT and vPvB assessment**

**fluroxypyr-meptyl (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).

**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).

**Hydrocarbons, C10, aromatics, <1% naphthalene**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

**Dipropylene glycol monomethyl ether**

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).

**2-methylpentane-2,4-diol**

This substance is not considered to be very persistent and very bioaccumulating (vPvB).

**Naphthalene**

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**12.6 Other adverse effects**

**fluroxypyr-meptyl (ISO)**

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

**Aminopyralid Potassium**

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

**Hydrocarbons, C10, aromatics, <1% naphthalene**

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

**Dipropylene glycol monomethyl ether**

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

**2-methylpentane-2,4-diol**

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

**Naphthalene**

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 UN number</b>	UN 3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Aromatic hydrocarbon)
<b>14.3 Class</b>	9
<b>14.4 Packing group</b>	III
<b>14.5 Environmental hazards</b>	Aromatic hydrocarbon
<b>14.6 Special precautions for user</b>	Hazard identification No: 90

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

<b>14.1 UN number</b>	UN 3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Aromatic hydrocarbon)
<b>14.3 Class</b>	9
<b>14.4 Packing group</b>	III
<b>14.5 Environmental hazards</b>	Aromatic hydrocarbon

- 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.(Aromatic hydrocarbon)
- 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.

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**SECTION 15. REGULATORY INFORMATION**

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**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.

**Other regulations**

Registration Number: PCS NO. 04058

**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**


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

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

**Full text of R-phrases referred to under sections 2 and 3**

R22	Harmful if swallowed.
R36/38	Irritating to eyes and skin.
R38	Irritating to skin.
R40	Limited evidence of a carcinogenic effect.
R41	Risk of serious damage to eyes.
R50	Very toxic to aquatic organisms.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	May cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

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

Asp. Tox. - 1 - H304 - On basis of test data.  
 Eye Dam. - 1 - H318 - On basis of test data.  
 STOT SE - 3 - H336 - Calculation method  
 Aquatic Chronic - 2 - H411 - Calculation method

**Revision**

Identification Number: 101209379 / A293 / Issue Date: 27.11.2014 / Version: 4.1

DAS Code: GF-839

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

**Legend**

2000/39/EC	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
91/322/EEC	Europe. Commission Directive 91/322/EEC on establishing indicative limit values
Absorbed via skin	Absorbed via skin
ACGIH	USA. ACGIH Threshold Limit Values (TLV)
C	Ceiling limit
Dow IHG	Dow Industrial Hygiene Guideline
IE OEL	Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1

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OELV - 15 min (STEL)	Occupational exposure limit value (15-minute reference period)
OELV - 8 hrs (TWA)	Occupational exposure limit value (8-hour reference period)
STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

**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.