

Product Name: SYNERO (TM) Herbicide**Revision Date:** 2013/08/07**Print Date:** 07 Aug 2013

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.

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

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

SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

0031 115 694 982

Local Emergency Contact:

00 31 115 69 4982

Section 2. Hazards Identification

2.1 Classification of the substance or mixture

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

Xi	R38	Irritating to skin.
Xi	R41	Risk of serious damage to eyes.
	R67	Vapours may cause drowsiness and dizziness.
N	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:

Xi - Irritant.
N - Dangerous for the environment.

Risk Phrases :

R38 - Irritating to skin.
R41 - Risk of serious damage to eyes.
R67 - Vapours may cause drowsiness and dizziness.
R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases :

S2 - Keep out of the reach of children.
S13 - Keep away from food, drink and animal feeding stuffs.
S24 - Avoid contact with skin.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S35 - This material and its container must be disposed of in a safe way.
S37/39 - Wear suitable gloves and eye/face protection.
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. 81406-37-3 EC-No. 279-752-9 Index 607-272-00-5	—	14.2 %	fluroxypyr-meptyl (ISO)	Aquatic Acute, 1, H400 Aquatic Chronic, 1, H410
CAS-No. 566191-87-5 EC-No. Not available	—	3.5 %	Aminopyralid Potassium##	Not classified
CAS-No. Not available EC-No. 918-811-1	01- 2119463583- 34	> 30.0 - < 40.0 %	Hydrocarbons, C10, aromatics, <1% naphthalene	Asp. Tox., 1, H304 STOT SE, 3, H336 Aquatic Chronic, 2, H411
CAS-No. 34590-94-8 EC-No. 252-104-2	—	> 20.0 - < 30.0 %	Dipropylene glycol monomethyl ether#	Not classified
CAS-No. 32612-48-9 EC-No. 608-760-0	—	< 5.0 %	Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-	Skin cor/irr, 2, H315 Eye cor/irr, 2, H319

CAS-No. 107-41-5 EC-No. 203-489-0 Index 603-053-00-3	01- 2119539582- 35	< 5.0 %	(dodecyloxy)-, ammonium salt 2-methylpentane- 2,4-diol	Eye cor/irr, 2, H319 Skin Irrit., 2, H315
CAS-No. 91-20-3 EC-No. 202-049-5 Index 601-052-00-2	—	< 1.0 %	Naphthalene	Carc., 2, H351 Acute Tox., 4, H302 Aquatic Acute, 1, H400 Aquatic Chronic, 1, H410

CAS-No. / EC-No. / Index	Amount	Component	Classification: 67/548/EEC
CAS-No. 81406-37-3 EC-No. 279-752-9 Index 607-272-00-5	14.2 %	fluroxypyr-meptyl (ISO)	N: R50, R53
CAS-No. 566191-87-5 EC-No. Not available	3.5 %	Aminopyralid Potassium##	Not classified.
CAS-No. Not available EC-No. 918-811-1	> 30.0 - < 40.0 %	Hydrocarbons, C10, aromatics, <1% naphthalene	Xn: R65; R66, R67; N: R51/53
CAS-No. 34590-94-8 EC-No. 252-104-2	> 20.0 - < 30.0 %	Dipropylene glycol monomethyl ether#	Not classified.
CAS-No. 32612-48-9 EC-No. 608-760-0	< 5.0 %	Poly(oxy-1,2- ethanediyl), .alpha.- sulfo-.omega.- (dodecyloxy)-, ammonium salt	Xi: R36/38
CAS-No. 107-41-5 EC-No. 203-489-0 Index 603-053-00-3	< 5.0 %	2-methylpentane-2,4- diol	Xi: R36/38
CAS-No. 91-20-3 EC-No. 202-049-5 Index 601-052-00-2	< 1.0 %	Naphthalene	Carc. 3: R40; Xn: R22; N: R50, R53

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: 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), no additional symptoms and effects are anticipated.

4.3 Indication of immediate medical attention and special treatment needed

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.

Repeated excessive exposure may aggravate preexisting liver and kidney disease.

Section 5. Fire Fighting Measures

5.1 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.

Extinguishing Media to Avoid: 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.

Section 6. Accidental Release Measures

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.

Section 7. Handling and Storage

7.1 Precautions for safe handling

Handling

General 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.

Other Precautions: 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

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

Exposure Limits

Component	List	Type	Value
fluroxypyr-meptyl (ISO)	Dow IHG	TWA	10 mg/m ³
Hydrocarbons, C10, aromatics, <1% naphthalene	DNEL-Worker:	Dermal - Systemic Long Term.	12.5 mg/kg bw/day
	DNEL-Worker:	Inhalation - Systemic Long Term.	150 mg/m ³

	DNEL-Consumer:	Dermal - Systemic Long Term.	7.5 mg/kg bw/day	
	DNEL-Consumer:	Inhalation - Systemic Long Term.	32 mg/m ³	
	DNEL-Consumer:	Oral - Systemic Long Term.	7.5 mg/kg bw/day	
Dipropylene glycol monomethyl ether	Ireland OELV	TWA	308 mg/m ³ 50 ppm	SKIN
			Indicative OELV	
	EU IOELV	TWA	308 mg/m ³ 50 ppm	SKIN
	UK WEL	TWA	308 mg/m ³ 50 ppm	SKIN
	ACGIH	TWA	100 ppm	SKIN
	ACGIH	STEL	150 ppm	SKIN
2-methylpentane-2,4-diol	Ireland OELV	TWA	125 mg/m ³ 25 ppm	
	Ireland OELV	STEL	125 mg/m ³ 25 ppm	
	ACGIH	Ceiling	25 ppm	
	UK WEL	TWA	123 mg/m ³ 25 ppm	
	UK WEL	STEL	123 mg/m ³ 25 ppm	
Naphthalene	Ireland OELV	TWA	50 mg/m ³ 10 ppm	
	Ireland OELV	STEL	75 mg/m ³ 15 ppm	
	ACGIH	TWA	10 ppm	SKIN
	ACGIH	STEL	15 ppm	SKIN
	EU IOELV	TWA	50 mg/m ³ 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.

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

8.2 Exposure controls

Personal Protection

Eye/Face Protection: Use chemical goggles. Chemical goggles 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: 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.

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.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face 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. Local exhaust ventilation may be necessary for some operations.

Section 9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical State	Liquid.
Color	Brown
Odor	Mild
Odor Threshold	No test data available
pH	5.8 (@ 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>CIPAC MT 12.3</i>
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammable Limits In Air	Lower: No test data available Upper: No test data available
Vapor Pressure	No test data available
Vapor Density (air = 1)	No test data available
Specific Gravity (H ₂ O = 1)	1.012 20 °C/4 °C <i>EC Method A3</i>
Solubility in water (by weight)	emulsifiable
Partition coefficient, n-octanol/water (log Pow)	No data available for this product. See Section 12 for individual component data.
Autoignition Temperature	> 400 °C <i>EC Method A15</i>
Decomposition Temperature	No test data available
Dynamic Viscosity	No test data available
Kinematic Viscosity	13.1 mm ² /s
Explosive properties	Not explosive
Oxidizing properties	No

9.2 Other information

Surface tension 31.6 mN/m @ 25 °C *EC Method A5*

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. Toxic gases are released during decomposition.

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: LD50, rat, female > 5,000 mg/kg

Aspiration hazard

May be harmful if swallowed and enters airways.

Dermal

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

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

Inhalation

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, 4 h, Aerosol, rat > 5.3 mg/l

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.

Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin.

Sensitization

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): 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.

Chronic Toxicity and Carcinogenicity

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

Developmental Toxicity

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.

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 (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species). Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

Fish Acute & Prolonged Toxicity

LC50, *Oncorhynchus mykiss* (rainbow trout), static test, 96 h: 6.42 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, *Daphnia magna* (Water flea), static test, 48 h, immobilization: 28.7 mg/l

Aquatic Plant Toxicity

ErC50, diatom *Navicula* sp., Growth inhibition, 72 h: 7.77 mg/l

Toxicity to Above Ground Organisms

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

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

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

Toxicity to Soil Dwelling Organisms

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

12.2 Persistence and Degradability

Data for Component: **fluroxypyr-meptyl (ISO)**

|| Material is not readily biodegradable according to OECD/EEC guidelines.

Stability in Water (1/2-life):

|| 454 d

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
32 %	28 d	OECD 301D Test	fail

|| Theoretical Oxygen Demand: 2.2 mg/mg

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

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

Data for Component: **Dipropylene glycol monomethyl ether**

|| Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% biodegradation in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
75 %	28 d	OECD 301F Test	pass

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

|| No relevant information found.

Data for Component: **2-methylpentane-2,4-diol**

|| Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
76 %	28 d	OECD 301C Test	Not applicable

Data for Component: **Naphthalene**

|| Material is expected to be readily biodegradable.

12.3 Bioaccumulative potential

Data for Component: **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

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

Bioaccumulation: For similar material(s): Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

Data for Component: **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

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

Bioaccumulation: No test data available

Data for Component: **2-methylpentane-2,4-diol**

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

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

Data for Component: **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; Measured

12.4 Mobility in soil

Data for Component: **fluroxypyr-meptyl (ISO)**

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

Partition coefficient, soil organic carbon/water (Koc): 6,200 - 43,000 Henry's Law

Constant (H): 5.5E+00 Pa*m³/mole. Measured

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

Mobility in soil: No relevant data found.

Data for Component: **Dipropylene glycol monomethyl ether**

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): 0.28 Estimated.

Henry's Law Constant (H): 1.6E-07 atm*m³/mole; 25 °C Estimated.

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

Mobility in soil: No data available.

Data for Component: **2-methylpentane-2,4-diol**

Mobility in soil: 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): 2.02E-09 atm*m³/mole; 25 °C Estimated.

Data for Component: **Naphthalene**

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

Partition coefficient, soil organic carbon/water (Koc): 240 - 1,300 Measured

Henry's Law Constant (H): 2.92E-04 - 5.53E-04 atm*m³/mole; 25 °C Measured

12.5 Results of PBT and vPvB assessment

Data for Component: **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).

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: 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).

Data for Component: 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).

Data for Component: Poly(oxy-1,2-ethanediyl), .alpha.-sulfo-omega.-(dodecyloxy)-, ammonium salt

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

Data for Component: 2-methylpentane-2,4-diol

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

Data for Component: Naphthalene

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

12.6 Other adverse effects**Data for Component: fluroxypyr-meptyl (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: 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.

Data for Component: Dipropylene glycol monomethyl ether

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

Data for Component: Naphthalene

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: Aromatic Hydrocarbon

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: Aromatic Hydrocarbon

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: Aromatic Hydrocarbon

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: Aromatic Hydrocarbon

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

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 14701/14702/14708; PCS No. 02793/04326/02058

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

Hazard statement in the composition section

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
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.

Risk-phrases in the Composition section

R22	Harmful if swallowed.
R36/38	Irritating to eyes and skin.
R40	Limited evidence of a carcinogenic effect.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, 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.

Revision

Identification Number: 82643 / 3027 / Issue Date 2013/08/07 / Version: 4.0

DAS Code: GF-839

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

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