Dow AgroSciences

Safety Data Sheet

DOW AGROSCIENCES LIMITED
Safety Data Sheet according to Reg. (EC) N. 453/2010

Product Name: SPITFIRE™ Herbicide Revision Date: 03.06.2014 Print Date: 30 Apr 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.

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

1.1 Product identifiers

Product Name

SPITFIRE™ 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

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 0031 115

694 982

Section 2. Hazards Identification

2.1 Classification of the substance or mixture Classification - REGULATION (EC) No 1272/2008

Trademark statement<02ZEHS TRDNM>

| Flammable liquids | Category 3 | H226 | Flammable liquid and vapour. |
|---|------------|------|---|
| Skin corrosion/irritation | Category 2 | H315 | Causes skin irritation. |
| Serious eye damage/eye irritation | Category 2 | H319 | Causes serious eye irritation. |
| Skin sensitization | Category 1 | H317 | May cause an allergic skin reaction. |
| Specific target organ toxicity - single exposure (Respiratory tract irritant.) | Category 3 | H335 | May cause respiratory irritation. |
| Specific target organ toxicity - single exposure (Narcotic effects.) | Category 3 | H336 | May cause drowsiness or dizziness. |
| Aspiration toxicity | Category 1 | H304 | May be fatal if swallowed and enters airways. |
| Acute aquatic toxicity | Category 1 | H400 | Very toxic to aquatic life. |
| Chronic aquatic toxicity | Category 1 | H410 | Very toxic to aquatic life with long lasting effects. |

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

| Xi | R36/37/ 38 | Irritating to eyes, respiratory system and skin. |
|----|---------------|--|
| | R43 | May cause sensitization by skin contact. |
| | R67 | Vapours may cause drowsiness and dizziness. |
| N | R50/53 | Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

2.2 Label elements

Labelling - REGULATION (EC) No 1272/2008

Hazard pictograms









Signal Word: Danger Hazard statements:

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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

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

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

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

P331 Do NOT induce vomiting.

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

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

2.3 Other Hazards

No information available.

Composition/information on ingredients Section 3.

| 3.2 | RЛ | ıvtı | ırΔ |
|-----|-----|------|------|
| J.Z | IVI | IALL | ai C |

| This product is a mixtur | e. | | | |
|-----------------------------|-------------|------------|---------------------|--|
| CAS-No. / EC-No. / Index | REACH No. | Amount | Component | Classification: REGULATION (EC) No 1272/2008 |
| CAS-No. | _ | 14.5 % | fluroxypyr-meptyl | Aquatic Acute, 1, H400 |
| 81406-37-3 | | | (ISO) | Aquatic Chronic, 1, H410 |
| EC-No. | | | | |
| 279-752-9 | | | | |
| Index | | | | |
| 607-272-00-5 | | | | |
| CAS-No. | _ | 0.5 % | Florasulam (ISO) | Aquatic Acute, 1, H400 |
| 145701-23-1 | | | | Aquatic Chronic, 1, H410 |
| EC-No. | | | | |
| Not available | | | | |
| Index | | | | |
| 613-230-00-7 | | | | |
| CAS-No. | 01- | > 30.0 - < | Hydrocarbons, | Flam. Liq., 3, H226 |
| Not available | 2119455851- | 40.0 % | C9, aromatics | Asp. Tox., 1, H304 |
| EC-No. | 35 | | | STOT SE, 3, H335 |
| 918-668-5 | | | | STOT SE, 3, H336 |
| | | | | Aquatic Chronic, 2, H411 |
| CAS-No. | 01- | < 5.0 % | Propylene glycol# | Not classified |
| 57-55-6 | 2119456809- | < 3.0 /0 | i Topylerie glycol# | Not classified |
| EC-No. | 23 | | | |
| 200-338-0 | 23 | | | |
| 200-330-0 | | | | |

| 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 | 14.5 % | fluroxypyr-meptyl (ISO) | N: R50, R53 |
| CAS-No. 145701-23-1 EC-No. Not available Index 613-230-00-7 | 0.5 % | Florasulam (ISO) | N: R50, R53 |
| CAS-No. Not available EC-No. 918-668-5 | > 30.0 - < 40.0 % | Hydrocarbons, C9, aromatics | R10; Xn: R65; Xi: R37; R66; R67; N: R51/53 |

CAS-No. < 5.0 % Propylene glycol# Not classified.

57-55-6 **EC-No.** 200-338-0

Substance(s) with an Occupational Exposure Limit.

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. If breathing is difficult, oxygen should be administered by qualified personnel.

Skin Contact: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be available in work area.

Eye Contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

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 immediate medical attention and special treatment neededSkin contact may aggravate preexisting dermatitis. Repeated excessive exposure may aggravate preexisting lung disease.

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. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

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. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen fluoride. Hydrogen chloride. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: This material will not burn until the water has evaporated. Residue can burn. May produce flash fire. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes. Dense smoke is produced when product burns.

5.3 Advice for firefighters

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

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

Section 6. Accidental Release Measures

- 6.1 Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
- **6.2 Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.
- **6.3 Methods and materials for containment and cleaning up:** Contain spilled material if possible. Pump with explosion-proof equipment. If available, use foam to smother or suppress. 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 Handling

General Handling: Keep out of reach of children. Keep away from heat, sparks and flame. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or mist. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other Precautions: Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

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. Minimize sources of ignition, such as static build-up, heat, spark or flame.

7.3 Specific end uses

Refer to product label.

Section 8. Exposure Controls / Personal Protection

8.1 Control parameters Exposure Limits

| Component | List | Туре | Value |
|-----------------------------|--------------------|--|-------------------|
| fluroxypyr-meptyl (ISO) | Dow IHG | TWA | 10 mg/m3 |
| Hydrocarbons, C9, aromatics | DNEL-Worker: | Dermal - Systemic Long Term. | 25 mg/kg bw/day |
| | DNEL-Worker: | Inhalation - Systemic Long Term. | 100 mg/m3 |
| | DNEL- Consumer: | Dermal - Systemic Long Term. | 11 mg/kg bw/day |
| | DNEL- Consumer: | Inhalation - Systemic Long Term. | 32 mg/m3 |
| | DNEL- Consumer: | Oral - Systemic Long Term. | 11 mg/kg bw/day |
| Propylene glycol | Ireland OELV | TWA Particulate. | 10 mg/m3 |
| | UK WEL | TWA Particulate. | 10 mg/m3 |
| | UK WEL | TWA Total vapour and | 474 mg/m3 150 ppm |
| | WEEL | particulates. 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 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. Natural rubber ("latex"). Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Chlorinated polyethylene. Neoprene. When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to

Product Name: SPITFIRE™ Herbicide

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.

Revision Date: 03.06.2014

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 White
Odor Gasoline-like

pH 4.5 (@ 1 %) *pH Electrode*

Melting Point Not applicable

Freezing Point

Boiling Point (760 mmHg)

Flash Point - Closed Cup
Flammability (solid, gas)

Flammable Limits In Air

No test data available

Upper: No test data available

Vapor Pressure

Vapor Density (air = 1)

Specific Gravity (H2O = 1)

Solubility in water (by

No test data available

No test data available

Emulsion

weight)

Partition coefficient, n- No data available for this product. See Section 12 for individual

octanol/water (log Pow) component data.

Autoignition Temperature
Decomposition component data.

No test data available
No test data available

Temperature

Kinematic Viscosity No test data available

Explosive properties No **Oxidizing properties** No

9.2 Other information

Liquid Density 0.9861 g/cm3 @ 20 °C *OECD* 109

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: Can coagulate if frozen. Active ingredient decomposes at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

10.5 Incompatible Materials: Avoid contact with: Strong oxidizers. Addition of chemicals may cause phase separation.

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

Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

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

Prolonged exposure is not expected to cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

As product: LC50, 4 h, Aerosol, rat > 5.52 mg/l

No deaths occurred at this concentration.

Eye damage/eye irritation

May cause moderate eye irritation which may be slow to heal. May cause slight corneal injury.

Skin corrosion/irritation

Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin. Effects may be slow to heal.

Sensitization

Skin

Has demonstrated the potential for contact allergy in mice.

Respiratory

No relevant data found.

Repeated Dose Toxicity

For the active ingredient(s): Florasulam. In animals, effects have been reported on the following organs: Kidney. For the solvent(s): In animals, effects have been reported on the following organs: Liver. Kidney. Respiratory tract. Blood. Eye. Lung.

Chronic Toxicity and Carcinogenicity

For the minor component(s): Has caused cancer in laboratory animals. However, the relevance of this to humans is unknown. For the active ingredient(s): Florasulam. For similar active ingredient(s): Fluroxypyr. Did not cause cancer in laboratory animals.

Developmental Toxicity

For the active ingredient(s): Fluroxypyr 1-methylheptyl ester. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. For the solvent(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Has caused birth defects in lab animals only at doses producing severe toxicity in the mother.

Reproductive Toxicity

For the solvent(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. For the active ingredient(s): In animal studies, did not interfere with reproduction.

Genetic Toxicology

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

Section 12. Ecological Information

12.1 Toxicity

Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 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), flow-through test, 96 h: 18.6 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), semi-static test, 48 h, immobilization: 27 - 35 mg/l

Aquatic Plant Toxicity

ErC50, Lemna minor (duckweed), Growth rate inhibition, 7 d: 0.156 mg/l

ErC50, Pseudokirchneriella subcapitata (green algae), Growth rate inhibition, 72 h: 1.730 mg/l

Toxicity to Above Ground Organisms

oral LD50, Colinus virginianus (Bobwhite quail): 2,000 mg/kg

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

oral LD50, Apis mellifera (bees): > 215.8 micrograms/bee

Toxicity to Soil Dwelling Organisms

LC50, Eisenia fetida (earthworms), 14 d: 320 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: Florasulam (ISO)

Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

Stability in Water (1/2-life):

> 30 d

OECD Biodegradation Tests:

| Biodegradation | Exposure Time | Method | 10 Day Window | | |
|--|---------------|----------------|---------------|--|--|
| 2 % | 28 d | OECD 301B Test | fail | | |
| Indirect Photodegradation with OH Radicals | | | | | |
| Rate Constant | Atmosphe | ric Half-life | Method | | |
| 7.04E-11 cm3/s | 1.8 | 2 h | Estimated. | | |

Theoretical Oxygen Demand: 0.85 mg/mg

Data for Component: Hydrocarbons, C9, aromatics

For the major component(s): Material is expected to biodegrade only very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. For some component(s): 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: 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: Florasulam (ISO)

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

Partition coefficient, n-octanol/water (log Pow): -1.22 Bioconcentration Factor (BCF): 0.8; Fish; Measured

Data for Component: Hydrocarbons, C9, aromatics

Bioaccumulation: For the major component(s): Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). For the minor component(s):

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: fluroxypyr-meptyl (ISO)

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

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

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

Data for Component: Florasulam (ISO)

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

Partition coefficient, soil organic carbon/water (Koc): 4 - 54Henry's Law Constant (H):

4.35E-07 Pa*m3/mole.; 20 °C

Data for Component: Hydrocarbons, C9, aromatics

Mobility in soil: For the major component(s):, Potential for mobility in soil is low (Koc between 500 and 2000).

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*m3/mole 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: Florasulam (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: Hydrocarbons, C9, aromatics

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: 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: Florasulam (ISO)

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

Data for Component: Hydrocarbons, C9, aromatics

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

UN1993

14.2 UN proper shipping name

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.

Technical Name: PETROLEUM NAPHTHA, 1,2,4-TRIMETHYLBENZENE

14.3 Transport hazard class(es)

Hazard Class: 3
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:30

ADNR / ADN

14.1 UN number

UN1993

14.2 UN proper shipping name

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.

Technical Name: PETROLEUM NAPHTHA, 1,2,4-TRIMETHYLBENZENE

14.3 Transport hazard class(es)

Hazard Class: 3

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

UN1993

14.2 UN proper shipping name

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.

Technical Name: PETROLEUM NAPHTHA, 1,2,4-TRIMETHYLBENZENE

14.3 Transport hazard class(es)

Hazard Class: 3
14.4 Packing Group

PG III

14.5 Environmental hazards

Marine pollutant

14.6 Special precautions for user

EMS Number: F-E,S-E

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

UN1993

14.2 UN proper shipping name

Proper Shipping Name: FLAMMABLE LIQUID, N.O.S.

Technical Name: PETROLEUM NAPHTHA, 1,2,4-TRIMETHYLBENZENE

14.3 Transport hazard class(es)

Hazard Class: 3
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 15101

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

H226 Flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

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

R10 Flammable.

R37 Irritating to respiratory system.

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: 1018110 / A293 / Issue Date 03.06.2014 / Version: 5.0

DAS Code: GF-2257

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

document.

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