DOW AGROSCIENCES LLC 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.

1. IDENTIFICATION

Product name: GOLDSKY™ Herbicide

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION
DOW AGROSCIENCES LLC
9330 ZIONSVILLE RD
INDIANAPOLIS IN  46268-1053
UNITED STATES

Customer Information Number: 800-992-5994
info@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 800-992-5994
Local Emergency Contact: 352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Serious eye damage - Category 1
Skin sensitisation - Category 1
Carcinogenicity - Category 2
Aspiration hazard - Category 1

Label elements
Hazard pictograms
Signal word: **DANGER!**

**Hazards**
May be fatal if swallowed and enters airways.
May cause an allergic skin reaction.
Causes serious eye damage.
Suspected of causing cancer.

**Precautionary statements**

**Prevention**
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear eye protection/ face protection.
- Wear protective gloves.
- Use personal protective equipment as required.

**Response**
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
- IF ON SKIN: Wash with plenty of soap and water.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
- IF exposed or concerned: Get medical advice/ attention.
- Do NOT induce vomiting.
- If skin irritation or rash occurs: Get medical advice/ attention.
- Wash contaminated clothing before reuse.

**Storage**
Store locked up.

**Disposal**
Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**
no data available

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CASRN</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyroxsulam</td>
<td>422556-08-9</td>
<td>1.2%</td>
</tr>
<tr>
<td>Florasulam</td>
<td>145701-23-1</td>
<td>0.2%</td>
</tr>
<tr>
<td>Fluroxypyr 1-methylheptyl ester</td>
<td>81406-37-3</td>
<td>11.57%</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

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.

Ingestion: Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

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.

Indication of any immediate medical attention and special treatment needed

Notes to physician: Skin contact may aggravate preexisting dermatitis. Repeated excessive exposure may aggravate preexisting lung disease. Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. 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. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.
5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray. 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.

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

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: Container may rupture from gas generation in a fire situation. Dense smoke is produced when product burns.

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. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. 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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. 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.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

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: See Section 13, Disposal Considerations, for additional information. Contact Dow AgroSciences for clean-up assistance.

### 7. HANDLING AND STORAGE

**Precautions for safe handling:** Keep out of reach of children. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Do not swallow. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe 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.

**Storage stability**
**Storage temperature:** > 10 °C (> 50 °F)

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**
Exposure limits are listed below, if they exist.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Type of listing</th>
<th>Value/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyroxsulam</td>
<td>Dow IHG</td>
<td>TWA</td>
<td>5 mg/m3</td>
</tr>
<tr>
<td></td>
<td>Dow IHG</td>
<td>TWA</td>
<td>Skin Sensitizer</td>
</tr>
<tr>
<td>Fluroxypyr 1-methylheptyl ester</td>
<td>Dow IHG</td>
<td>TWA</td>
<td>10 mg/m3</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>Dow IHG</td>
<td>TWA</td>
<td>10 ppm</td>
</tr>
<tr>
<td></td>
<td>Dow IHG</td>
<td>TWA</td>
<td>Absorbed via skin</td>
</tr>
<tr>
<td></td>
<td>Dow IHG</td>
<td>STEL</td>
<td>15 ppm</td>
</tr>
<tr>
<td></td>
<td>Dow IHG</td>
<td>STEL</td>
<td>Absorbed via skin</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>10 ppm</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>Absorbed via skin</td>
</tr>
<tr>
<td></td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>50 mg/m3 10 ppm</td>
</tr>
</tbody>
</table>

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.

**Exposure controls**
**Engineering controls:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**
**Eye/face protection:** Use safety glasses (with side shields). If exposure causes eye discomfort, use a full-face respirator.

**Skin protection**
**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Polyvinyl chloride (“PVC” or “vinyl”). 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”). 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.

**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. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Color</td>
<td>Green to brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Aromatic</td>
</tr>
<tr>
<td>Odor Threshold</td>
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</tr>
<tr>
<td><strong>pH</strong></td>
<td>4.77 1% pH Electrode</td>
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<tr>
<td>Melting point/range</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No test data available</td>
</tr>
<tr>
<td>Boiling point (760 mmHg)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Flash point</td>
<td><strong>closed cup</strong> &gt; 100 °C ( &gt; 212 °F) <strong>Closed Cup</strong></td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>No test data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>No test data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No test data available</td>
</tr>
<tr>
<td>Relative Vapor Density (air = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Relative Density (water = 1)</td>
<td>no data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Dispersible</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>No test data available</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>no data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>no data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>no data available</td>
</tr>
</tbody>
</table>
Liquid Density 1.0498 g/cm³ at 20 °C (68 °F) Digital density meter
Molecular weight no data available

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

10. STABILITY AND REACTIVITY

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

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible materials: Avoid contact with oxidizing materials. Avoid contact with: Acids. Bases.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Hydrogen chloride. Hydrogen fluoride. Nitrogen oxides. Toxic gases are released during decomposition.

11. TOXICOLOGICAL INFORMATION

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

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

Based on information for component(s):
LD50, Rat, > 5,000 mg/kg Estimated.

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

As product: The dermal LD50 has not been determined.

Based on information for component(s):
LD50, Rabbit, > 3,100 mg/kg Estimated.

Acute inhalation toxicity
Prolonged excessive exposure to mist may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause central nervous system effects. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Signs and symptoms of excessive exposure may include: Sweating. Nausea and/or vomiting.
Skin corrosion/irritation
Prolonged contact may cause slight skin irritation with local redness.
May cause drying and flaking of the skin.

Serious eye damage/eye irritation
May cause slight eye irritation.
Corneal injury is unlikely.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization
Contains component(s) which have caused allergic skin sensitization in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For the active ingredient(s):
In animals, effects have been reported on the following organs:
Bone marrow.
Kidney.
Liver.
Thymus.
Thyroid.
Bladder.

For the solvent(s):
In animals, effects have been reported on the following organs:
Lung.
Gastrointestinal tract.
Thyroid.
Urinary tract.
Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.
Cataracts and other eye effects have been reported in humans repeatedly exposed to naphthalene vapor or dust.

Carcinogenicity
Contains naphthalene which has caused cancer in some laboratory animals. For the active ingredient(s): Did not cause cancer in laboratory animals.

Teratogenicity
For the active ingredient(s): Fluroxypyr 1-methylheptyl ester. Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Florasulam. Cloquintocet-mexyl. Pyroxsulam. Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
In animal studies, active ingredient did not interfere with reproduction.
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.

<table>
<thead>
<tr>
<th>Component</th>
<th>List</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>IARC</td>
<td>Group 2B: Possibly carcinogenic to humans</td>
</tr>
<tr>
<td></td>
<td>US NTP</td>
<td>Reasonably anticipated to be a human carcinogen</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>A3: Confirmed animal carcinogen with unknown relevance to humans</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

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

Toxicity

Pyroxsulam

**Acute toxicity to fish**
Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, > 87.0 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**
EC50, Lemna minor (duckweed), 7 d, Biomass, 0.00257 mg/l, OECD 221.

**Toxicity to bacteria**
EC50, activated sludge, 3 Hour, > 1,000 mg/l

**Chronic toxicity to fish**
NOEC, Pimephales promelas (fathead minnow), flow-through test, 40 d, survival, 3.2 - 10.1 mg/l

**Chronic toxicity to aquatic invertebrates**
NOEC, Daphnia magna (Water flea), static test, 21 d, survival, 10.4 mg/l

**Toxicity to Above Ground Organisms**
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).
LC50, Colinus virginianus (Bobwhite quail), 8 d, > 5000mg/kg diet.
LD50, Colinus virginianus (Bobwhite quail), > 2000mg/kg bodyweight.
oral LD50, Apis mellifera (bees), 48 Hour, > 107.4 micrograms/bee
contact LD50, Apis mellifera (bees), 48 Hour, > 100 micrograms/bee

Toxicity to soil-dwelling organisms
LC50, Eisenia fetida (earthworms), 14 d, > 10,000 mg/kg

Florasulam

Acute toxicity to fish
Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 < 0.1 mg/L in the most sensitive species).
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, > 292 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
ErC50, Pseudokirchneriella subcapitata (green algae), static test, 72 Hour, Growth rate inhibition, 0.00894 mg/l, OECD Test Guideline 201 or Equivalent

Chronic toxicity to fish
NOEC, Oncorhynchus mykiss (rainbow trout), flow-through test, 28 d, mortality, 119 mg/l
NOEC, Pimephales promelas (fathead minnow), flow-through test, 33 d, Other, > 2.9 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, growth, 38.90 mg/l

Toxicity to Above Ground Organisms
Material is slightly toxic to birds on an acute basis (LD50 between 501 and 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).
oral LD50, Coturnix japonica (Japanese quail), 1047 mg/kg bodyweight.
dietary LC50, Anas platyrhynchos (Mallard duck), 8 d, > 5,000 ppm
oral LD50, Apis mellifera (bees), 48 Hour, > 100 micrograms/bee
contact LD50, Apis mellifera (bees), 48 Hour, > 100 micrograms/bee

Toxicity to soil-dwelling organisms
LC50, Eisenia fetida (earthworms), 14 d, > 1,320 mg/kg

Fluroxypyr 1-methylheptyl ester

Acute toxicity to fish
Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 < 0.1 mg/L in the most sensitive species).
LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 Hour, > 0.225 mg/l, OECD Test Guideline 203 or Equivalent
Toxicity to aquatic species occurs at concentrations above material’s water solubility.

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), semi-static test, 48 Hour, > 0.183 mg/l, OECD Test Guideline 202 or Equivalent
Toxicity to aquatic species occurs at concentrations above material’s water solubility.

Acute toxicity to algae/aquatic plants
ErC50, diatom Navicula sp., static test, 72 Hour, 0.24 mg/l, OECD Test Guideline 201 or Equivalent
EbC50, alga Scenedesmus sp., 72 Hour, > 0.47 mg/l
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1.410 mg/l
EC50, Lemna gibba, 14 d, > 2.31 mg/l

**Chronic toxicity to fish**
NOEC, Rainbow trout (Oncorhynchus mykiss), 0.32 mg/l

**Toxicity to Above Ground Organisms**
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).
oral LD50, Colinus virginianus (Bobwhite quail), 5 d, > 2000mg/kg bodyweight.
dietary LC50, Colinus virginianus (Bobwhite quail), > 5000mg/kg diet.
oral LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee
contact LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

**Toxicity to soil-dwelling organisms**
LC50, Eisenia fetida (earthworms), > 1,000 mg/kg

**Cloquintocet-mexyl**

**Acute toxicity to fish**
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
As the ester active substance.
LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, > 0.97 mg/l, Method Not Specified.

**Acute toxicity to aquatic invertebrates**
As the ester active substance.
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 0.82 mg/l, Method Not Specified.

**Acute toxicity to algae/aquatic plants**
As the ester active substance.
EbC50, alga Scenedesmus sp., 96 Hour, Biomass, 0.63 mg/l, Method Not Specified.
As the ester active substance.
EbC50, Lemna minor (duckweed), 14 d, Biomass, > 0.42 mg/l, Method Not Specified.

**Toxicity to Above Ground Organisms**
Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).
Material is practically non-toxic to birds on a dietary basis (LC50 > 5000 ppm).
oral LD50, Anas platyrhynchos (Mallard duck), > 2000mg/kg bodyweight.
dietary LC50, Anas platyrhynchos (Mallard duck), > 5200mg/kg diet.
oral LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee
contact LD50, Apis mellifera (bees), 48 Hour, > 100micrograms/bee

**Toxicity to soil-dwelling organisms**
LC50, Eisenia fetida (earthworms), > 1,000 mg/kg

**Naphthalene**

**Acute toxicity to fish**
Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 0.11 mg/l

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), static test, 48 Hour, 1.6 - 24.1 mg/l

**Chronic toxicity to fish**
NOEC, Other, flow-through, 40 d, mortality, 0.37 mg/l

**Balance**
Acute toxicity to fish
No relevant data found.

**Persistence and degradability**

**Pyroxsulam**

**Biodegradability:** 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:** 20 - 30 %
- **Exposure time:** 28 d
- **Method:** OECD Test Guideline 301B or Equivalent

**Florasulam**

**Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Fail
- **Biodegradation:** 2 %
- **Exposure time:** 28 d
- **Method:** OECD Test Guideline 301B or Equivalent

**Theoretical Oxygen Demand:** 0.85 mg/mg

**Biological oxygen demand (BOD)**

<table>
<thead>
<tr>
<th>Incubation Time</th>
<th>BOD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.012 mg/mg</td>
</tr>
</tbody>
</table>

**Stability in Water (1/2-life)**
> 30 d

**Photodegradation**

**Atmospheric half-life:** 1.82 Hour
**Method:** Estimated.

**Fluroxypyr 1-methylheptyl ester**

**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

**Cloquintocet-mexyl**
**Biodegradability:** No relevant data found.

**Naphthalene**
**Biodegradability:** Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

**Theoretical Oxygen Demand:** 3.00 mg/mg

**Biological oxygen demand (BOD)**

<table>
<thead>
<tr>
<th>Incubation Time</th>
<th>BOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 d</td>
<td>57.000 %</td>
</tr>
<tr>
<td>10 d</td>
<td>71.000 %</td>
</tr>
<tr>
<td>20 d</td>
<td>71.000 %</td>
</tr>
</tbody>
</table>

**Photodegradation**
**Test Type:** Half-life (indirect photolysis)
**Sensitizer:** OH radicals
**Atmospheric half-life:** 5.9 Hour
**Method:** Estimated.

**Balance**
**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Pyroxsulam**
**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient:** n-octanol/water(log Pow): -1.01 Measured

**Florasulam**
**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.  28 d  Measured

**Fluroxypyr 1-methylheptyl ester**
**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

**Cloquintocet-mexyl**
**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).
**Partition coefficient:** n-octanol/water(log Pow): 5.3 Estimated.
**Bioconcentration factor (BCF):** 122 - 621  Fish.

**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

Balance
Bioaccumulation: No relevant data found.

Mobility in soil

Pyroxsulam
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): \(\leq 42\) Estimated.

Florasulam
Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 4 - 54

Fluroxypyr 1-methylheptyl ester
Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient (Koc): 6200 - 43000

Cloquintocet-mexyl
Expected to be relatively immobile in soil (Koc > 5000).
Partition coefficient (Koc): 38070 Estimated.

Naphthalene
Potential for mobility in soil is medium (Koc between 150 and 500).
Partition coefficient (Koc): 240 - 1300 Measured

Balance
No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal 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.

14. TRANSPORT INFORMATION

DOT

Proper shipping name
Environmentally hazardous substance, liquid, n.o.s. (Naphthalene)

UN number
UN 3082
Class 9
Packing group III
Reportable Quantity Naphthalene

Classification for SEA transport (IMO-IMDG):
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Fluroxypyr 1-methylheptyl ester)
UN number UN 3082
Class 9
Packing group III
Marine pollutant Fluroxypyr 1-methylheptyl ester
Transport in bulk Consult IMO regulations before transporting ocean bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code

Classification for AIR transport (IATA/ICAO):
Proper shipping name Environmentally hazardous substance, liquid, n.o.s.(Fluroxypyr 1-methylheptyl ester)
UN number UN 3082
Class 9
Packing group III

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.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard
This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Acute Health Hazard
Chronic Health Hazard

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:**
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

**United States TSCA Inventory (TSCA)**
This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

**Federal Insecticide, Fungicide and Rodenticide Act**
EPA Registration Number: 62719-582
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

**WARNING**
Causes substantial but temporary eye injury
Harmful if swallowed
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

### 16. OTHER INFORMATION

**Hazard Rating System**
**NFPA**

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**Revision**
Identification Number: 101206502 / A211 / Issue Date: 05/14/2015 / Version: 3.0
DAS Code: GF-2669
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

<table>
<thead>
<tr>
<th>Absorbed via skin</th>
<th>Absorbed via skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Dow IHG</td>
<td>Dow Industrial Hygiene Guideline</td>
</tr>
<tr>
<td>OSHA Z-1</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td>STEL</td>
<td>Short term exposure limit</td>
</tr>
<tr>
<td>TWA</td>
<td>Time weighted average</td>
</tr>
</tbody>
</table>

**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 LLC 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.