SAFETY PRECAUTIONS

Operator protection:
Engineering controls of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:
WEAR SUSTAINABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACE SHIELD) when handling the concentrate.
However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.
DO NOT BREATHE SPRAY.
WHEN USING DO NOT EAT, DRINK OR SMOKE.
WASH CONCENTRATE from skin and eyes immediately.
WASH HANDS AND EXPOSED SKIN before using and drinking and after work.

Environmental protection:
DO NOT CONTAMINATE WATER with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

Storage and disposal:
KEEP OUT OF REACH OF CHILDREN.
KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.
KEEP IN ORIGINAL CONTAINER, tightly closed in a safe place.
RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.
DO NOT RE-USE CONTAINER for any purpose.

IMPORTANT INFORMATION

FOR USE ONLY AS AN AGRICULTURAL HERBICIDE

Crops
Individual Dose | Maximum Dose of Application | Latest Time
Winter wheat, winter | 1.8 litres product per hectare | Before flag leaf sheath (up to Zadoks 45 inclusive)
barley | 1.8 litres product per hectare | 
Winter oats | 1.8 litres product per hectare | Before second node (up to Zadoks 31 inclusive)

Spring wheat, spring barley, | 1.5 litres product per hectare | Before flag leaf sheath (up to Zadoks 39 inclusive)
| 1.5 litres product per hectare | 
Spring oats | 1.5 litres product per hectare | Before second node (up to Zadoks 31 inclusive)

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE.

Follow the Code of Practice for Using Plant Protection Products.

Other Specific Restrictions:
For autumn planted crops a maximum total dose of 3.75 g of florasulam must be observed for applications made between crop emergence in the year of planting and February 1st in the year of harvest.
The total amount of florasulam applied to a cereal crop must not exceed 7.5 g.

This label is compliant with the CPA Voluntary Initiative Guidance.

By using this product, you are accepting the conditions of the label.

READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.

PROTECT FROM FROST
SHAKE WELL BEFORE USE

PRODUCT REGISTRATION NUMBER: MAPP 10879

A suspension emulsion formulation containing
100 g/litre fluroxypyr methyl heptyl ester and 1.0 g/litre florasulam.

A post-emergence herbicide for use on all varieties of
WINTER AND SPRING WHEAT, BARLEY AND OATS
for the control of CLEAVERS and COMMON CHICKWEED.

The (COSHH) Control of Substances Hazardous to Health Regulations
may apply to the use of this product at work.

READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.
**EU513 Leaflet Label**

**Inside pages**

**MATERIAL**

**APPLICATION**

**TANK CLEANING**

**DRUSENHEIM**

**COLOUR REFERENCES**

**QUALITY CHECK**

**Q42547A02/31433** Date: 9-OCT-14 Issue: B
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Safety Data Sheet
This Safety Data Sheet does not form part of the approved product label.

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

1.1 Product identifiers
Product name: STARANE® Gold 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
HERNHOUS STREET
HITCHIN
England
E52 7AD

Customer Information Number: 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 Regulation (EU) 1272/2008 :
Skin corrosion/irritation - Category 2 - H315
Serious eye damage/eye irritation - Category 2 - H319
Skin sensitisation - Category 1 - H317
Respiratory irritation - Category 3 - H335
Respiratory sensitisation - Category 3 - H336
Acute aquatic toxicity - Category 2 - H411

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

EU513 Leaflet Label
Inside pages

Dow AgroSciences

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All other brand names are trademarks of other manufacturers for which proprietary rights may exist.

DOW AGROSCIENCES CONDITIONS OF SUPPLY
All goods supplied by us are of high grade and we believe them to be suitable but, as we cannot exercise control over their storage, handling, mixing or use, or the weather conditions before, during or after application which may affect the performance of the goods, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose on our goods are excluded. No responsibility will be accepted by us or re-sellers for any failure in performance, damage or injury whatsoever arising from their storage, handling, application or use. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in the use of such goods.
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Classification according to EU Directives 67/548/EEC or 1999/45/EC:
Irritant - R36/37/38R43R67
Dangerous for the environment - R51/53
For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]:

Hazard pictograms

Signal word: WARNING
Hazard statements
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.
H411 Toxic to aquatic life with long lasting effects.

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

Precautionary statements
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P331 Do NOT induce vomiting.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301 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.

Contains
Hydrocarbons, C9, aromatics
no data available

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture
This product is a mixture.

<table>
<thead>
<tr>
<th>CASRN / EC-No. / (Index-No.</th>
<th>Concentration</th>
<th>Component</th>
<th>Classification:</th>
</tr>
</thead>
</table>
| 8406-07-3                   | 14.6%       | fluroxypyr-meptyl (ISO) | Aquatic Acute - 1 - H400  
Aquatic Chronic - 1 - H410 |
| 145701-23-1                 | 0.1%       | florasulam (ISO) | Aquatic Acute - 1 - H400  
Aquatic Chronic - 1 - H410 |
| 01-2119455585-05            | > 30.0 - < 40.0 % | hydrocarbons, C9, aromatics | Ham. Liq. - 3 - H226  
STOT SE - 3 - H336  
STOT SE - 3 - H335  
Asp. Tox. - 1 - H304  
Aquatic Chronic - 2 - H411 |

EU513 Leaflet Label
Inside pages
### 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 necessary, give mouth to mouth use resuscitation equipment (resuscitation mask etc.). Call a poison control center or doctor for treatment advice. If breathing is difficult administer oxygen by qualified personnel.

**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:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 15 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:** No emergency medical treatment necessary.

#### 4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

**Notes to physician:** Skin contact may aggravate preexisting dermatitis. Maintain adequate ventilation and oxygenation of the patient. 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.

### SECTION 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

**Suitable 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. Alcohol resistant foams (AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** No data available.
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: Carbon monoxide. Carbon dioxide.

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

5.3 Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Burning liquids may be extinguished by dilution with water. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. 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 fire fighting 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: To avoid inhaling area. Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep away from spill. Ventilate area of leak or spill. Refer to section 7. Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 7. Handling.

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: Control 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 cleanup assistance. See Section 13, Disposal Considerations, for additional information.

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

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling: Keep out of reach of children. Keep away from heat, sparks and flame. Do not smoke. Avoid contact with eyes, skin, and clothing. Avoid breathing vapour or mist. Use with adequate ventilation, which is adequately after handling. Keep container closed. Containers, even those that have been emptied, can contain vapours. Do not cut, drill, grind, weld, or perform similar operations. Dispose of completely contained. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

7.2 Conditions for safe storage, including any incompatibilities: Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

7.3 Specific end uses: Refer to product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits are listed below, if they exist.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation Type</th>
<th>Value/Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>fluroxypyr-meptyl</td>
<td>ISO</td>
<td>TWA 10 mg/m³</td>
</tr>
<tr>
<td>Florasulam</td>
<td>GB EH40</td>
<td>10 ppm</td>
</tr>
<tr>
<td>Propylene glycol</td>
<td>GB EH40</td>
<td>TWA 474 mg/m³</td>
</tr>
<tr>
<td></td>
<td>GB EH40</td>
<td>10 ppm</td>
</tr>
<tr>
<td></td>
<td>GB EH40</td>
<td>TWA 10 mg/m³</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.

8.2 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 chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator.

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. 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, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. Use the following CE approved air-purifying respirator: Organic vapour cartridge with a particulate pre-filter, type AP2.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Suspension</td>
</tr>
<tr>
<td>Colour</td>
<td>Off-white</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No test data available</td>
</tr>
<tr>
<td>Melting Point (range)</td>
<td>6.2  1%, DPAC MT 75.2 (1% aqueous suspension)</td>
</tr>
<tr>
<td>Freezing Point (76 mmHg)</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>63 °C, Pensky-Martens Closed Cup ASTM D 99</td>
</tr>
<tr>
<td>Evaporation Rate (Butyl Acetate, 99%)</td>
<td>No 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>Vapour Pressure</td>
<td>No test data available</td>
</tr>
<tr>
<td>Relative Vapour Density (air = 1)</td>
<td>No test data available</td>
</tr>
<tr>
<td>Relative Density (water = 1)</td>
<td>0.991 at 20 °C / 4 °C Pyknometer</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>No test data available</td>
</tr>
<tr>
<td>Partition coefficient in water</td>
<td>No test data available</td>
</tr>
<tr>
<td>Auto-Ignition Temperature</td>
<td>&gt; 400 °C, at 1.006 mbar 8D/H/EEC A15 none below 400 degC</td>
</tr>
<tr>
<td>Thermoplasticity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No EEC A14</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
<tr>
<td>Sustained Ignition</td>
<td>36.5 mJ/m2 40 °C 8C Method A6</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No test data available</td>
</tr>
<tr>
<td>Decomposition reaction</td>
<td>No test data available</td>
</tr>
<tr>
<td>Decomposition products</td>
<td>Decomposition products depend upon temperature, air supply and the presence of other materials.</td>
</tr>
</tbody>
</table>

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

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: no data available

10.2 Chemical stability: Stable under recommended storage conditions. See Storage, Section 7.

10.3 Possibility of hazardous reactions: Polymerization will not occur.

10.4 Conditions to avoid: Active ingredient decomposes at elevated temperatures.

10.5 Incompatible materials: Avoid contact with: Acids. Strong oxidizers.

10.6 Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials.
SECTION 11. TOXICOLOGICAL INFORMATION

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

11.1 Information on toxicological effects

Acute toxicity

- Acute oral toxicity:
  - Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
  - As product: Single dose oral LD50 has not been determined. Based on information for component(s): LD50, rat, female, > 5,000 mg/kg Estimated.
  - As product: LD50, rat, male, > 2,000 mg/kg Estimated. Based on information for component(s).

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, > 5,000 mg/kg Estimated.

Acute inhalation toxicity

- Vapor concentrations are attainable which could be hazardous on single exposure. May cause respiratory irritation and central nervous system depression. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.
- As product: The LC50 has not been determined.

Skin corrosion/irritation

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

Serious eye damage/eye irritation

- May cause moderate eye irritation. May cause slight corneal injury.
- Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitisation

- For the active ingredient(s): Has demonstrated the potential for contact allergy in mice.
- Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitisation:

No relevant data found.

Specific Target Organ Systems Toxicity (Single Exposure)

- Specific Target Organ Systems Toxicity (Repeated Exposure)

For the active ingredient(s):

- Contains component(s) which have been reported to cause effects on the following organs in animals: Blood, Eye, Kidney, Liver, Respiratory tract, Lung.
  - In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

Carcinogenicity

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

Teratogenicity

- For the active ingredient(s): Has been toxic to the foetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.
- Based on information for component(s): Has been toxic to the foetus 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

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

Mutagenicity

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

Aspiration Hazard

- Based on physical properties, not likely to be an aspiration hazard.
## COMPONENTS INFLUENCING TOXICOLOGY:

### Fluroxypyr-meptyl (ISO)
- **Acute inhalation toxicity**: Prolonged exposure is not expected to cause adverse effects. Dust may cause irritation to upper respiratory tract (nose and throat). Maximum attainable concentration. LC50, rat, male and female, 4 Hour, dust/mist, > 1.16 mg/l. No deaths occurred at this concentration.

### Florasulam (ISO)
- **Acute inhalation toxicity**: No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed. LC50, rat, 4 Hour, Aerosol, > 5.0 mg/l.

### Hydrocarbons, C9, aromatics
- **Acute inhalation toxicity**: Vapor concentrations are attainable which could be hazardous on single exposure. May cause respiratory irritation and central nervous system depression. Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. LC50, rat, 4 Hour, > 10.2 mg/l.

### Propylene glycol
- **Acute inhalation toxicity**: Mist may cause irritation of upper respiratory tract (nose and throat). LC50, rabbit, 2 Hour, Aerosol, 317.042 mg/l. No deaths occurred at this concentration.

## SECTION 12. ECOLOGICAL INFORMATION

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

### Acute toxicity to fish
- **Based on information for component(s):**
  - LC50, Rainbow trout (Oncorhynchus mykiss), 96 Hour, 13.5 mg/l. Material is toxic to aquatic organisms (LC50/EC50/IC50 between 1 and 10 mg/L in the most sensitive species).

### Acute toxicity to aquatic invertebrates
- **Based on information for component(s):**
  - EC50, water flea Daphnia magna, 48 Hour, > 317 mg/l.

### Acute toxicity to algae/aquatic plants
- **ErC50, Lemna minor (duckweed), 14 d, Biomass, > 2.248 mg/l.**
- **ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 24.8 mg/l.**

### Toxicity to Above Ground Organisms
- **For the active ingredient(s):**
  - **oral LD50, Colinus virginianus (Bobwhite quail), > 2,000 mg/kg.**
  - **oral LD50, Apis mellifera (bees), 48 Hour, 359 micrograms/bee.**
  - **contact LD50, Apis mellifera (bees), 48 Hour, 959 micrograms/bee.**

### Toxicity to soil-dwelling organisms
- **LC50, Eisenia fetida (earthworms), 14 d, 608 mg/kg.**

### Fluroxypyr-meptyl (ISO)
- **Biodegradability:** Material is not readily biodegradable according to OECD/EEC guidelines. Method: 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):** 454 d.

### Florasulam (ISO)
- **Biodegradability:** Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Method: 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)**

- **Incubation Time BOD**
  - 0.012 mg/mg

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

**Hydrocarbons, C9, aromatics**
- Biodegradability: For the major component(s): Material is expected to biodegrade 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.

**Propylene glycol**
- Biodegradability: Material is readily biodegradable. Passed OECD test(s) for ready biodegradability. Biodegradation may occur under anaerobic conditions (in the absence of oxygen).
  - 10-day Window: Pass
  - Biodegradation: 81%
  - Exposure time: 28 d

**Propionic acid**
- Biodegradability: Material is readily biodegradable. Passed OECD test(s) for ready biodegradability.
  - Biodegradation: 96%
  - Exposure time: 64 d

**12.3 Bioaccumulative potential**
- **Bioaccumulation**: No data available.

**12.4 Mobility in soil**
- **Fluroxypyr-meptyl (ISO)**
  - Expected to be relatively immobile in soil (Koc > 5000).
  - Partition coefficient(Koc): 6200 - 43000

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

**Hydrocarbons, C9, aromatics**
- No relevant data found.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Package MID**: 11091046 1409
**Trade Name**: STARANE GOLD
**Country**: UK
**Region**: UK (INCLUDING IRL)
**Size**: 245x127 mm
**Artwork Type**: SL LEAFLET LABEL
**Label Support**: N/A
**Specification**: EU S13
**Standardisation Level**: 2
**Printer**: PAGO
**Packing Location**: DRUSENHEIM
**Level 70 Code**: N/A
**Operator Initials**: KY
**COLOUR REFERENCES**: Number of Colours used: 1

**EU513 Leaflet Label Inside pages**
presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws. The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

SECTION 14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):
14.1 UN number
UN 3082
14.2 Proper shipping name
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluroxypyr, Florasulam)
14.3 Class
9
14.4 Packing group
III
14.5 Environmental hazards
Fluroxypyr, Florasulam
14.6 Special precautions for user
Hazard identification No: 90

Classification for SEA transport (IMO-IMDG):
14.1 UN number
UN 3082
14.2 Proper shipping name
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Fluroxypyr, Florasulam)
14.3 Class
9
14.4 Packing group
III
14.5 Environmental hazards
Fluroxypyr, Florasulam
14.6 Special precautions for user
EmS: F-A, S-F
14.7 Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code Consult IMO regulations before transporting ocean bulk. 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 country or local regulations. Additional transportation system information can be obtained through an authorized Sales or customer service representative. It is the responsibility of the buyer/user or organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This product contains only components that have been either pre-registered, registered, are exempt from registration, or are prepared as registered according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and the information as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer/user’s responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

Product Registration Number: MAPP 10879

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

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

H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H333 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.
Full text of R-phrases referred to under sections 2 and 3

R10 Flammable.
R36/37/38 Irritating to eyes, respiratory system and skin.
R37 Irritating to respiratory system.
R43 May cause sensitisation by skin contact.
R50 Very toxic to aquatic organisms.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53 May cause long-term adverse effects in the aquatic environment.
R65 Harmful, may cause lung damage if swallowed.
R66 Repeated exposure may cause skin dryness or cracking.
R67 Vapours may cause drowsiness and dizziness.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 (CLP):

- H315 - On basis of test data.
- H319 - On basis of test data.
- Skin Sens. - 1 - H317 - On basis of test data.
- STOT SE - 3 - H335 - Calculation method
- STOT RE - 3 - H336 - Calculation method
- Aquatic Chronic - 2 - H411 - Calculation method

Revision
Identification Number: 101194172 / A293 / Issue Date: 01.08.2014 / Version: 6.2
DAS Code: GF-185

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

Legend
Dow IHG Dow Industrial Hygiene Guideline
GB EH40 UK. EH40 WEL - Workplace Exposure Limits
TWA Long-term exposure limit (8-hour TWA reference period)
US WEEL USA. Workplace Environmental Exposure Levels (WEEL)

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.
SAFETY PRECAUTIONS

Operator protection:
Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment.
WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACE SHIELD) when handling the concentrate.
However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.
DO NOT PUT ON OR WEAR CLOTHING WHICH CAN BE SCRATCHED OR TEAR EASILY.
WASH CONCENTRATE from skin and eyes immediately. WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.

Engineering control:
DO NOT CONTAMINATE WATER with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

Environmental protection:
DO NOT APPLY TO CROPS PLANTED WITHIN 15 METRES OF WATERSIDE REGIONS.

Health effects:
IF INGESTED: Induce vomiting. DO NOT INDUCE VOMITING IN CONSCIOUS PERSONS. DO NOT INGEST WASHINGS. DO NOT INDUCE SLEEP. DO NOT GIVE anything by mouth to an unconscious person. DO NOT INGEST WASHINGS. DO NOT GIVE anything by mouth to an unconscious person.

Disposal of equipment:
DO NOT RE-USE CONTAINER for any purpose. Dispose of contaminated clothing in a licensed hazardous waste disposal operation or collect for industrial disposal. 

Important information:
READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.

READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.

EU513 Leaflet Label
Base label

Product Registration Number: MAPP 10679

A suspension emulsion formulation containing 100 g/litre fluroxypyr methyl heptyl ester and 1.0 g/litre florasulam.

A post-emergence herbicide for use on all varieties of WINTER AND SPRING WHEAT, BARLEY AND OATS for the control of CLEAVERS and COMMON CHICKWEED.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.

PROTECT FROM FROST
SHAKE WELL BEFORE USE

5 Litres

WARNING
CAUSES SKIN IRRITATION
MAY CAUSE AN ALLERGIC SKIN REACTION
CAUSES SERIOUS EYE IRRITATION
MAY CAUSE RESPIRATORY IRRITATION
MAY CAUSE DROWSINESS OR DIZZINESS
TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS

Wear protective gloves/clothing/eye/face protection.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Remove contact lens, if present and easy to do so. Rinse eyes for at least 15 minutes. Get medical advice/attention.
IF INHALED: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical advice/attention.
IF SWALLOWED: DO NOT INDUCE VOMITING. DO NOT inducE SLEEP. Drink plenty of water. Get medical advice/attention.

Dow AgroSciences Limited
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Package MID: 11091046 1409
Trade Name: STARANE GOLD
Country: UK
Region: UK (INCLUDING IRL)
Size: 231x127mm
Artwork Type: SL LEAFLET LABEL
Label Support: N/A

COLOUR REFERENCES
Number of Colours used: 4

QUALITY CHECK
☐ MANUAL
☐ DIGITAL PAGE
☐ DOCU PAGE