SAFETY DATA SHEET
EnviroMax Halosulfuron-methyl 750WG Herbicide

Section 1: Identification
Product identifier: EnviroMax Halosulfuron-methyl 750WG Herbicide.
Other means of identification: Halosulfuron-methyl water dispersible granule; sulfonylurea herbicide
Recommended use of the chemical and restrictions on use: For the control of various weeds of turf and agricultural situations as specified on the product label
Details of manufacturer: EnviroMax Technologies Pty Ltd
Level 3, 549 Queen St., Brisbane, Queensland 4000, Australia
Emergency phone number: 61-(0) 4099 26561

Section 2: Hazard Identification
Hazard Classification: NOT a hazardous substance
Signal Word: CAUTION
Hazard statements: Nil
Precautionary statements:
Prevention: Do not swallow. Avoid contact with spray. Wash hands, arms and face after use with soap and water.
Response: If swallowed: Move affected person to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal: Dispose of contents/container in accordance with container label instructions as per local State and Council requirements.

Symbols:
Exclamation mark
Acute aquatic hazard

Section 3: Composition / Information On Ingredients
Chemical Identity of Ingredients

<table>
<thead>
<tr>
<th>Common Name</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halosulfuron-methyl</td>
<td>100784-20-1</td>
<td>75%</td>
</tr>
<tr>
<td>Other non-hazardous ingredients</td>
<td>-</td>
<td>25%</td>
</tr>
</tbody>
</table>
Section 4: First Aid Measures

**General Advice:**
For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor (at once). Have this MSDS with you when you call.

**Description of necessary first aid measures**

**Inhalation:**
Remove from exposure area to fresh air immediately, seek medical attention if symptoms develop or persist.

**Skin Contact:**
Remove contaminated clothing and shoes immediately and wash with plenty of water and soap. If symptoms persist seek medical attention.

**Eye Contact:**
If in eyes, hold eyelids apart and flush the eye continuously with large amounts of water for at least 15 minutes. Seek medical attention if symptoms persist.

**Ingestion:**
If swallowed, do not induce vomiting. Immediately rinse mouth with water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

**Symptoms caused by exposure**
Systemic toxicity is unlikely unless large amounts have been ingested.
- Many substituted ureas are irritating to eyes, skin and mucous membranes.
- Coughing and shortness of breath.
- Nausea, vomiting, diarrhoea, headache, confusion and electrolyte depletion.
- Protein metabolism disturbances, moderate emphysema, and weight loss with chronic exposure.

**Medical attention and special treatment**
Treat symptomatically. There is no specific antidote available.

Section 5: Fire Fighting Measures

**Suitable extinguishing equipment:**
Non-combustible. Use extinguishing media appropriate to the source of the fire, eg water fog or spray, foam, carbon dioxide (CO2) or dry chemical. Do not use extinguishes which may spread fire (eg solid water stream).

**Specific hazards arising from the chemical**
Oxides of nitrogen, sulphur or hydrogen chloride in a major fire only.

**Special protective equipment and precautions for fire fighters**
Wear self-contained breathing apparatus in confined areas.

Section 6: Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures**
Avoid contact with eyes and skin. Wear a class P1 dust mask. After use, wash contaminated clothing.

**Environmental precautions**
In the event of a spill, prevent spillage from entering drains or water courses with absorbent material and call emergency services.

**Methods and materials for containment and cleaning up**
Contain product spill as appropriate. Contain spill of diluted mix by absorbing with clay, sand, soil or proprietary absorbent (such as vermiculite). Cover drains if possible. Collect spilled material and waste in sealable open-top type containers for disposal.
# MATERIAL SAFETY DATA SHEET

## Section 7: Handling And Storage

**Precautions for safe handling**
Read container label before use. Use only in accordance with the instructions provided on the container label, including the Precaution and Protection sections and the Safety Directions.

**Conditions for safe storage**
Store in the closed, original container in a dry, well ventilated area, as cool as possible.

## Section 8: Exposure Controls / Personal Protection

**Exposure control measures**
No exposure standards have been set for this product or its ingredients.

**Biological monitoring**
No biological limit allocated for the product or any of its ingredients. No biological monitoring is required.

**Control Banding**
No control banding level allocated.

**Engineering controls**
Use only in a well ventilated area.

**Individual protection measures**
Avoid contact with eyes and skin. Wear a dust mask. After each day’s use, wash contaminated clothing.
After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

## Section 9: Physical and Chemical Properties

**Appearance:** Beige granules

**Odour:** Scorched vanilla

**pH:** 7.5-8.5 (1% w/v dilution)

**Vapour pressure:** $3.50 \times 10^2 \text{ mPa @ 25}^\circ \text{C (Halosulfuron-methyl)}$

**Octanol-Water Partition Coefficient ($K_{ow}$):** $9.55 \times 10^{-1}$ (Halosulfuron-methyl)

**Henry's constant:** $6.13 \times 10^{-1}$ @20°C (Dimensionless) (Halosulfuron-methyl)

**Bulk Density**
1.62 (Halosulfuron-methyl)

**Solubility (water)**
10.2 mg/L (Halosulfuron-methyl)

EnviroMax Halosulfuron-methyl 750WG Herbicide is a dispersion in water.

**Ignition temperature:** No data available. Halosulfuron-methyl is not highly flammable

## Section 10: Stability And Reactivity

**Reactivity:**

**Chemical stability:** Stable under normal storage conditions and use.

**Possibility of hazardous reactions:** None when stored and used as directed. Hazardous polymerisation is not possible.

**Conditions to avoid:** None known. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

**Incompatible materials:** No particular incompatibilities. Store and use as directed. Avoid strong acids, strong bases and strong oxidising agents

**Hazardous decomposition products**
None known. Store and use as directed.

## Section 11: Toxicological Information

**Acute Oral (LD$_{50}$):** 5561 mg/kg (rat, calculated from ingredients) Category 5

**Acute Dermal (LD$_{50}$):** $>2000$ mg/kg (rabbit, calculated from ingredients) Category 5

**Acute Inhalation (LC$_{50}$):** No data for the product. Halosulfuron-methyl is low in toxicity by inhalation as a spray mist. The 4-hour LC50 is $>6.0$ mg/L in rats

**Skin irritation:** Not considered a skin irritant (rabbit)

**Eye irritation:** Mild eye irritant (rabbit)

**Skin sensitisation:** Not a sensitizer (Magnusson & Kligman test)

**Genotoxicity (mutagenicity):** No data for the product. Halosulfuron-methyl is not considered to be genotoxic via in-vitro and in-vivo studies.

**Carcinogenicity:** No data for the product. Halosulfuron-methyl is not considered to be
carcinogenic (24 month rat study).

**Reproductive toxicity:** No data for the product. Halosulfuron-methyl is not considered to have reproductive toxicity (2 generation rat study @ 274 mg/kg/day).

No foetal toxicity without dam toxicity at doses up to 300 mg/kg/day.

**Specific Target Organ: Toxicity – single exposure:** No data for the product. For Halosulfuron-methyl no primary target organ for toxicity was identified from acute dose studies in mice, rats, rabbits and guinea pigs.

**Specific Target Organ Toxicity – repeat exposure:** No data for the product. For Halosulfuron-methyl no primary target organ for toxicity was identified from repeat dose studies in mice, rats and dogs.

**Aspiration hazard:** No data for the product or Halosulfuron-methyl.

**Inhalation**
Halosulfuron-methyl has sufficiently low vapour pressure so that Halosulfuron-methyl does not readily volatilize. Use as per label instructions (low pressure spray) is unlikely to result in significant inhalation exposure. Breathing in very high concentrations of spray mist through use of this product may cause respiratory irritation.

**Skin Contact**
The product is not considered a skin irritant.

**Eye Contact**
Product may irritate the eyes.

**Ingestion**
Amounts swallowed incidental to normal handling procedures and use are not expected to cause injury.

**Exposure levels and health effects**
The acceptable daily intake (ADI) for Halosulfuron-methyl is 0.01 mg/kg body weight based on a NOEL of 1 mg/kg bw/day from male dogs in a 1-year daily oral dosing study and a safety factor of 100.

**Section 12: Ecological Information**

**ENVIRONMENTAL TOXICITY**

**Ecotoxicity:** Information on Halosulfuron-methyl, the primary environmental toxicant.

<table>
<thead>
<tr>
<th>Fish:</th>
<th>LC50 (96 h) &gt;131 mg/L, Oncorhynchus mykiss</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NOEC (21 d) 34 mg/l, Colinus virginianus</td>
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<tr>
<td>Aquatic invertebrates:</td>
<td>EC50 (48 h) &gt;1.07 mg/l, Daphnia magna</td>
</tr>
<tr>
<td></td>
<td>NOEC (21 d) &gt;6.9 mg/l, Daphnia magna</td>
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<tr>
<td></td>
<td>EC50 (96 h) 72.0 mg/L Mysid shrimp (Americaamysis bahia)</td>
</tr>
<tr>
<td></td>
<td>NOEC (28 d) 5.0 mg/kg sediment Chironomus riparius</td>
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<tr>
<td>Aquatic plants:</td>
<td>EC50 (7 day) 0.0002 mg/l (biomass), Lemna gibba</td>
</tr>
<tr>
<td></td>
<td>EC50 (72 h) 0.0053 mg/l (growth), Pseudokirchneriella subcapitata</td>
</tr>
<tr>
<td>Birds:</td>
<td>Acute oral LD50 &gt;2250 mg/kg Colinus virginianus (bobwhite quail)</td>
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<tr>
<td></td>
<td>Short-term dietary LC50 &gt;5620 mg/kg Colinus virginianus (bobwhite quail)</td>
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<tr>
<td>Terrestrial insects:</td>
<td>Aphidius rhopalosiphi LR50 300 g/ha (moderate)</td>
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<tr>
<td></td>
<td>Typhlodromus pyri LR50 300 g/ha (moderate)</td>
</tr>
</tbody>
</table>
Persistence and degradability
Half-life of Halosulfuron-methyl is 14-119 days in aerobic soils (non-persistent).
No evidence of volatility
Halosulfuron-methyl is stable to hydrolysis at pH 7 and is not pH sensitive.

Bioaccumulative potential
Halosulfuron-methyl bioaccumulation potential is considered to be low

Mobility in soil
Slightly to moderately mobile
Koc = 109 (Linear)
Kd = 1.67 (Linear)
Kf = 1.51 (Freundlich)

Section 13: Disposal Considerations
Product Disposal:
Product Disposal On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals.

Container Disposal
Do not use this container for any other purpose. Triple or preferably pressure rinse empty containers before disposal or recycling. Add rinsings to spray tank. Contact licensed industrial waste collector for proper disposal.

Section 14: Transport Information
UN Number: 3077 (Halosulfuron-methyl)
UN Proper Shipping Name: For bulk shipments as Class 9, use UN 3077, HazChem code 2Z.
Transport hazard class 9 (bulk shipments)
Packing Group: Considered non dangerous for road and rail transport (in packaging) by the Australian Code for the Transport of Dangerous Goods by Road and Rail.
Environmental hazards for Transport Purposes Marine Pollutant
Special precautions for user: None
Hazchem 2Z (bulk shipments)
ADG Code: NOT considered dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Section 15: Regulatory Information
POISON Schedule: 5 – CAUTION

Section 16: Other Information
References:
1. APVMA Public Release Summary HALOSULFURON-METHYL. 1994
2. IUPAC Agrochemical Information http://sitem.herts.ac.uk/aeru/iupac/1117.htm

Acronyms
LD50 or LC50 – Estimated lethal dose / concentration to kill 50% of the population/sample.
MATERIAL SAFETY DATA SHEET

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