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| Infosafe No™ 3NUNN | Issue Date : September 2016 | ISSUED by NUFARMNZ |
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 Product Name **EMBLEM® FLO**

## 1. Identification

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| <b>GHS Product Identifier</b>                                  | EMBLEM® FLO  |
| <b>Product Code</b>  | 00851  |
| <b>Product Type</b>  | Selective herbicide  |
| <b>Company Name</b>  | Nufarm NZ  |
| <b>Address</b>   | 6 Manu Street, Otahuhu<br>Auckland 2024 New Zealand  |
| <b>Telephone/Fax Number</b>                                    | Tel: 0-9-270 4150<br>Fax: 0-9-270-4159   |
| <b>Emergency phone number</b>                                  | 0800 651 911   |
| <b>Recommended use of the chemical and restrictions on use</b> | Fast acting contact broadleaf herbicide for use in maize, sweetcorn and popcorn.   |
| <b>Other Information</b>                                       | This SDS describes, to the best of our knowledge, the properties of the concentrated product. The physical properties and some of the assessments do not apply to the properties of the product once it has been diluted for application. Acute health effects of the diluted product are likely to be much less severe. |

## 2. Hazard Identification

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| <b>Other Information</b> | 6.1D acute toxicant, 6.5A respiratory sensitiser, 6.5B skin sensitiser, 6.8B reproductive or developmental toxicant, 6.9A target organ toxicant, 9.1A aquatic toxicant, 9.2A soil toxicant, 9.3B terrestrial vertebrate toxicant.<br><b>TOXICITY</b><br>Harmful-may be harmful if swallowed, inhaled or absorbed through the skin.<br>Warning-may cause respiratory sensitisation. May cause sensitisation from prolonged skin contact. May cause reproductive/development damage from repeated oral exposure.<br>Toxic-may cause liver damage from repeated oral exposure at high doses.<br><b>ECOTOXIC</b><br>Very toxic to aquatic organisms with long-lasting effects.<br>Toxic to terrestrial vertebrates.<br>Selective herbicide-very toxic to some plant species. |
|--------------------------|--|

## 3. Composition/information on ingredients

|                                  |   |            |                   |
|----------------------------------|---|------------|-------------------|
| <b>Chemical Characterization</b> | Liquid                                      |            |                   |
| <b>Ingredients</b>               | <u>Name</u>                                 | <u>CAS</u> | <u>Proportion</u> |
|                                  | Bromoxynil (present as butyrate ester)      | 3861-41-4  | 250-500 g/L       |
|                                  | Bromoxynil                                  | 1689-84-5  | 1-10 g/L          |
|                                  | Bromoxynil (present as the octanoate ester) | 1689-99-2  | 1-10 g/L          |
|                                  | Ingredients determined not to be hazardous  | -          | Balance           |

## 4. First-aid measures

|                           |   |
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| <b>First Aid Measures</b> | For advice contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately. Begin artificial respiration if the victim is not breathing. Use mouth-to-nose rather than mouth-to-mouth. Obtain medical attention. |
| <b>Inhalation</b>         | Remove patient to fresh air. Lay down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance immediately.   |
| <b>Ingestion</b>          | Never give anything by mouth to an unconscious person. If swallowed do NOT induce vomiting. For advice, contact the National Poisons Centre (0800 764 766). Seek medical assistance immediately.  |
| <b>Skin</b>               | Immediately flush body and clothes with large amounts of water. Remove contaminated clothing and footwear. Wash affected areas with soap and water. If a large area is affected seek medical assistance.                                |

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| <b>Eye contact</b>          | Flush eyes with plenty of water for 15 minutes holding eyelids open if necessary.<br>Remove contact lenses, if present and easy to do.<br>Seek medical assistance even if there are no immediate symptoms. |
| <b>First Aid Facilities</b> | Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.   |
| <b>Advice to Doctor</b>     | Treat symptomatically.   |

## 5. Fire-fighting measures

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| <b>Suitable extinguishing media</b>                   | Water fog, foam, carbon dioxide or dry chemical.  |
| <b>Special Protective Equipment for fire fighters</b> | Full protective clothing and self-contained breathing apparatus.  |
| <b>Specific Methods</b>                               | Keep up wind. Do not allow washings to reach sewage or effluent systems.  |
| <b>Hazchem Code</b>                                   | 2X  |
| <b>Other Information</b>                              | Location Certificate: Not applicable<br>Hazardous Atmosphere Zone: Not applicable<br>Number of Fire Extinguishers: Not applicable |

## 6. Accidental release measures

|                                  |  |
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| <b>Spills &amp; Disposal</b>     | Wear protective clothing. Clear area of unprotected personnel. Contain spill and absorb with sand, soil or absorbent granules. If spill does enter waterways contact the local authority. Collect in an appropriate sealable container for disposal in an approved landfill. Wash area with water and absorb with further inert material and collect in sealable container for disposal. |
| <b>Personal Protection</b>       | For appropriate personal protective equipment (PPE), refer Section 8.  |
| <b>Environmental Precautions</b> | Prevent from entering drains, waterways or sewers.<br>This product is a herbicide and spills can damage crops, pastures and desirable vegetation.  |

## 7. Handling and storage

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| <b>Precautions for Safe Handling</b>                                | Avoid skin and eye contact and inhalation of spray mist.<br>APPROVED HANDLER: This product must be under the control of an approved handler when applied in a wide dispersive manner; or used by a commercial contractor.<br>TRACKING: Is not required<br>RECORD KEEPING: Records of use as described in the NZS 8409 Management of Agrichemicals must be kept.<br>BEWARE: Spray drift hazard. Apply this product carefully. Spray drift may cause serious damage to other desirable plants.<br>This product must not be applied onto or into water. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Keep out of reach of children.<br>Store in original container tightly closed and in a locked, dry, cool area away from foodstuffs, fertilisers, pesticides and seeds. Storage must be in accordance with NZS 8409 Management of Agrichemicals. Stores containing 100L of EMBLEM FLO require secondary containment and are subject to signage, and more than 100L require emergency response plans.   |
| <b>Other Information</b>  | Aggregate Storage Volume Thresholds:<br>When stored with substances of the same hazard classification the aggregate quantity must be considered. For full details refer to the current NZS8409 Management of Agrichemicals and the HSNO Regulations.   |

## 8. Exposure controls/personal protection

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|---|---|
| <b>Occupational exposure limit values</b> | No exposure limits (WES, TEL or EEL's) have been specifically assigned for this product.<br>The following ADE and PDE values have been set for bromoxynil butyrate:<br>ADE = 0.01 mg/kg bw/day<br>PDE food = 0.007 mg/kg bw/day<br>PDE water = 0.002 mg/kg bw/day<br>PDE other = 0.001 mg/kg bw/day |
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| <b>Appropriate engineering controls</b> | Handle in well ventilated areas, generally natural ventilation is adequate.   |
| <b>Personal Protective Equipment</b>    | When opening the container, preparing spray and using the prepared spray wear PVC or rubber apron, elbow length PVC gloves, faceshield or safety goggles, a NIOSH approved half face mask with organic vapour cartridge + dust/mist prefilter, cotton overalls buttoned to the neck and wrist, and boots. |
| <b>Hygiene Measures</b>                 | Do not eat, drink or smoke while using.<br>Remove protective clothing and wash hands and face thoroughly before meals and after work. Wash protective clothing daily after work.  |

## 9. Physical and chemical properties

|                            |                             |
|----------------------------|-----------------------------|
| <b>Form</b>                | Liquid                      |
| <b>Appearance</b>          | Beige                       |
| <b>Solubility in Water</b> | Disperses in water.         |
| <b>Specific Gravity</b>    | 1.245                       |
| <b>pH</b>                  | 3.5 - 4.5 (1% in water)     |
| <b>Other Information</b>   | (SC) Suspension Concentrate |

## 10. Stability and reactivity

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|---|---|
| <b>Chemical Stability</b>               | Stable under normal conditions of handling and storage.<br>Not an oxidiser.         |
| <b>Hazardous Decomposition Products</b> | Thermal decomposition may yield oxides of carbon and nitrogen, and bromhydric acid. |
| <b>Hazardous Polymerization</b>         | Not known to occur.   |

## 11. Toxicological Information

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|--------------------------------------|--|
| <b>Acute Toxicity - Oral</b>         | LD50 (rat): 116.4mg/kg bw for bromoxynil butyrate          |
| <b>Acute Toxicity - Dermal</b>       | LD50 (rat): >2,000mg/kg bw for bromoxynil butyrate         |
| <b>Acute Toxicity - Inhalation</b>   | LC50 (rat): 1.216mg/L for bromoxynil butyrate              |
| <b>Skin Sensitisation</b>            | Contact sensitiser<br>Respiratory sensitiser               |
| <b>Reproductive Toxicity</b>         | Possible risk of harm to the unborn child.                 |
| <b>Chronic Effects</b>               | May cause damage to the liver from repeated oral exposure. |
| <b>Serious eye damage/irritation</b> | Mild irritant  |

## 12. Ecological information

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| <b>Persistence and degradability</b>    | Bromoxynil butyrate is not persistent in water or soil. Hydrolysis: DT50 = 13d, pH7. Photolysis: DT50 = 0.25d, pH4. Soil: DT50 = 8d, field.  |
| <b>Acute Toxicity - Fish</b>            | LC50 (96h) = 0.032mg/L for bromoxynil butyrate   |
| <b>Acute Toxicity - Daphnia</b>         | EC50 (48h) = 0.208mg/L for bromoxynil butyrate<br>NOEC (21d) = >0.026mg/L bromoxynil butyrate (long term)  |
| <b>Acute Toxicity - Algae</b>           | EC50 (72h) = 0.75mg/L for bromoxynil butyrate  |
| <b>Acute Toxicity - Other Organisms</b> | Aquatic plants: EC50 (7d) = 0.13mg/L for bromoxynil butyrate<br>Bobwhite Quail: LD50 = 420mg/kg bw for bromoxynil butyrate<br>Mallard Duck: LD50 = 1,230mg/kg bw for bromoxynil butyrate |

## 13. Disposal considerations

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|---------------------------|---|
| <b>Product Disposal</b>   | Dispose of product only by using according to the label, or at an approved landfill.  |
| <b>Container Disposal</b> | Triple rinse empty container and add rinsate to the spray tank. Recycle empty container. Otherwise crush and bury in a suitable landfill. |

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## 14. Transport information

|                                   |  |
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| <b>Transport Information</b>      | It is good practice not to transport agricultural chemical products with food, food related materials and animal feedstuffs.   |
| <b>U.N. Number</b>                | 3082   |
| <b>UN proper shipping name</b>    | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. - (bromoxynil, 40.2%)  |
| <b>Transport hazard class(es)</b> | 9  |
| <b>Hazchem Code</b>               | 2X   |
| <b>Packaging Method</b>           | -  |
| <b>Packing Group</b>              | III  |
| <b>EPG Number</b>                 | -  |
| <b>IERG Number</b>                | 47   |
| <b>IMO Marine Pollutant</b>       | Yes. Environmentally Hazardous Substance mark required.  |
| <b>IMDG EMS</b>                   | F-A, S-F   |
| <b>Other Information</b>          | Do not carry this product on a passenger service vehicle.<br>Segregation: Check the latest Land Transport Rule Dangerous Goods Rule 45001 for additional information. Sea transport may require additional segregation. Refer NZS5433 sea segregation for details. |

## 15. Regulatory information

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| <b>National and or International Regulatory Information</b> | Registered pursuant to the ACVM Act 1997, No. P8362<br>See <a href="http://www.foodsafety.govt.nz">www.foodsafety.govt.nz</a> for registration conditions |
| <b>Packaging &amp; Labelling</b>                            | Approved pursuant to the HSNO Act 1996, Approval Code HSR100575<br>See <a href="http://www.epa.govt.nz">www.epa.govt.nz</a> for approval controls.        |
| <b>Hazard Rating Systems</b>                                | TOXIC * ECOTOXIC - keep out of reach of children<br>NFPA/HMIS: 1-1-0  |

## 16. Other Information

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|--|---|
| <b>Date of preparation or last revision of SDS</b> | September 2011  |
| <b>Contact Person/Point</b>                        | IN AN EMERGENCY, DIAL 111 - FIRE OR POLICE<br>24Hr Tollfree Emergency No: 0800 651 911<br>24Hr Emergency No: National Poisons Centre Phone: 0800 764 766<br>5 Yearly review carried out. Minor changes made in the SDS. |
| <b>Revisions Highlighted</b>                       |   |
| <b>Other Information</b>                           | Supersedes SDS issued September 2011<br>...End Of MSDS...   |

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