

MATERIAL SAFETY DATA SHEET



Bayer CropScience

Date of Issue: December 11, 2008

1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name **Hero® Selective Herbicide**
Other names None
Product codes and pack sizes 6171168 (1 kg), 6320139 (500 g)
Chemical group Sulfonylurea
Recommended use Agricultural herbicide
Formulation Water dispersible granule (WG)
Supplier Bayer CropScience Pty Ltd ABN 87 000 226 022
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Victoria 3123, Australia
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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
HAZARDOUS SUBSTANCE - NON-DANGEROUS GOOD (road/rail)
Very toxic to certain aquatic organisms.

Hazard classification Hazardous (National Occupational Health and Safety Commission - NOHSC)
Risk phrases R36 – Irritating to eyes
Safety phrases See Sections 4, 5, 6, 7, 8, 9, 13
ADG classification Not "dangerous goods" for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. For transport by sea, Hero Selective Herbicide is a Marine Pollutant. See Section 14.
SUSDP classification (Poison Schedule) Schedule 5 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/kg)
Ethoxysulfuron	[126801-58-9]	600
Kaolin	[1332-58-7]	100 - < 300
Alkyl naphthalene sulfonate, sodium salt	[26264-58-4]	< 100
Sodium dioctyl sulphosuccinate	[577-11-7]	< 100
Other ingredients	(non hazardous)	100 - <300

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4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Material Safety Data Sheet to the doctor.

Inhalation	If inhaled, remove to fresh air and keep at rest. Obtain medical advice if symptoms are experienced. If breathing stops or shows signs of failing, start artificial respiration. Call for prompt medical attention.
Skin contact	Carefully remove contaminated clothing and wash affected areas with plenty of water and soap. Seek medical aid if at all worried.
Eye contact	Rinse eyes immediately with clean water for at least 15 minutes. Obtain medical advice if irritation develops and persists.
Ingestion	Wash out mouth with water. Do not induce vomiting. Obtain medical advice as above.
First Aid Facilities	Provide eyewash and safety shower facilities in the workplace.
Medical attention	Ethoxysulfuron is a sulfonylurea herbicide of relatively low toxicity. <i>Symptoms:</i> There are no reports of poisonings in humans. Animal experiments with high doses of other sulfonylureas showed non-specific symptoms with decreased activity, irregular breathing and laboured breathing. Although ethoxysulfuron is a sulfonylurea compound, it does not influence glucose metabolism. <i>Treatment:</i> As there is no antidote, treatment has to be symptomatic and supportive. Gastric lavage may not be necessary due to the low toxicity of the compound. However, administration of activated charcoal and sodium sulphate is advisable with significant ingestions.

5. FIRE FIGHTING MEASURES

Extinguishing media	Water spray, foam. Do not use dry agent, carbon dioxide or high volume water jet.
Hazards from combustion products	Carbon dioxide, carbon monoxide, nitrogen oxides, sulphur oxides and hydrogen cyanide may be released in a fire.
Precautions for fire fighters	Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). If possible and without risk, remove intact containers from exposure to fire. Contain fire-fighting water by bunding area with sand or earth to prevent it entering any bodies of water. Dispose of fire control water or other extinguishing agent and spillage safely later.
Hazchem code	Not applicable

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled material or contaminated surfaces. Extinguish possible sources of ignition. Do not smoke, eat or drink during the clean up process. Wear personal protective clothing and equipment as detailed in Section 8 PERSONAL PROTECTION. Keep people and animals away. Prevent spilled material from entering drains or watercourses. Avoid creation of dust, damping down if necessary. Sweep up and collect and store in properly labelled drums for safe disposal. Clean floor with a small amount of water and detergent. Absorb this and place contaminated absorbent in the drum. Seal drums and label ready for safe disposal. Deal with all spillages immediately. If contamination of drains, streams, watercourses etc. is unavoidable, warn the local water authority.

7. HANDLING AND STORAGE

Handling Keep out of reach of children. Will irritate the eyes. Avoid contact with eyes. If product in eyes, wash it out immediately with water. When opening the container and preparing spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing), elbow-length PVC gloves and face shield or goggles. Wash hands after use. After each day's use, wash gloves, face shield or goggles and contaminated clothing. Avoid dust formation.

Storage Store in the closed, original container in a dry, cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Protect from moisture.

Flammability Not flammable or explosive. Classified as a not readily combustible solid. The product is not dusty, but if dust is created it can form an explosive mixture with air.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards The NOHSC Exposure Standard for kaolin is: TWA: 10 mg/m³

Definitions:

Exposure standard – Time Weighted Average (TWA) means the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.

Biological limit values None allocated

Engineering controls Control process conditions to avoid contact. Use in a well-ventilated area only.

Personal Protective Equipment

- Face-shield or goggles
- Cotton overalls buttoned to the neck and wrist (or equivalent clothing) and a washable hat
- Elbow-length PVC gloves
- If airborne concentrations are likely to exceed the exposure standards above, an AS/NZS 1715/1716 approved respirator should be worn.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Fine brown granules
Odour:	Slight characteristic acidic odour
pH:	8.2 (1% suspension in water)
Vapour pressure:	6.6×10^{-2} mPa (<i>ethoxysulfuron</i>)
Vapour density:	Not available
Boiling point:	Not applicable
Freezing/melting point:	Melting point (<i>ethoxysulfuron</i>) 144 – 147 °C
Solubility:	Disperses in water
Bulk Density:	0.57 g/mL
Flash Point:	Not applicable
Flammability (explosive) limits:	Not applicable
Auto-ignition temperature:	363 °C
Partition coefficient (octanol/water):	<i>Ethoxysulfuron</i> : Log P _{ow} : 2.59

10. STABILITY AND REACTIVITY

Chemical stability	Stable under recommended conditions of storage and use.
Conditions to avoid	Avoid sources of ignition and formation of dust.
Incompatible materials	None known
Hazardous decomposition products	Carbon dioxide, carbon monoxide, nitrogen oxides, sulphur oxides and hydrogen cyanide may be released in a fire.
Hazardous reactions	None known

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation	Low toxicity by inhalation.
Skin contact	The product is not expected to irritate the skin and it is not a skin sensitiser.
Eye contact	Will irritate eyes.
Ingestion	Low toxicity by ingestion.

11. TOXICOLOGICAL INFORMATION - continued

ANIMAL TOXICITY DATA – PRODUCT

Acute:

Oral toxicity	LD ₅₀ rat: 2811 mg/kg
Dermal toxicity	LD ₅₀ rat: > 2000 mg/kg
Inhalation toxicity	LC ₅₀ rat (4 hour): >3260 mg/m ³
Skin irritation	Not irritating – rabbit
Eye irritation	Moderately irritating – rabbit
Sensitisation	Not a sensitiser – Guinea pig

Chronic:

Animal studies have shown ethoxysulfuron was not carcinogenic, mutagenic or teratogenic, and did not affect reproduction. In animal studies, target organs are the kidney, liver and thyroid.

12. ECOLOGICAL INFORMATION

Very toxic to certain aquatic plants and algae. Moderately toxic to fish and aquatic invertebrates. Low toxicity to bees, birds, and earthworms. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

Ecotoxicity

Hero (similar formulation):

<i>Fish toxicity:</i>	LC ₅₀ (96 h): 72.4 mg/L rainbow trout
<i>Daphnia toxicity:</i>	EC ₅₀ (48 h): 115 mg/L <i>Daphnia magna</i>
<i>Algal toxicity:</i>	EC ₅₀ (72 h): 0.33 mg/L <i>Desmodesmus subspicatus</i>

Ethoxysulfuron:

<i>Fish toxicity:</i>	LC ₅₀ (96 h): > 80 mg/L rainbow trout
<i>Daphnia toxicity:</i>	EC ₅₀ : 307 mg/L
<i>Algal toxicity:</i>	E _b C ₅₀ (72 h) for <i>Desmodesmus subspicatus</i> 0.19 mg/L
<i>Aquatic plants:</i>	EC ₅₀ <i>Lemna gibba</i> 0.24 µg/L
<i>Bird toxicity:</i>	LD ₅₀ : > 2000 mg/kg bobwhite quail

Environmental fate, persistence, degradability and mobility

Ethoxysulfuron is stable in water but is degraded by sunlight in natural waters with a half life of about 31 days. Adsorption studies showed weak to moderate binding to soils. In laboratory tests the DT₅₀ in biologically active soil was 18 – 20 days.

13. DISPOSAL CONSIDERATIONS

Rinse containers before disposal. Add rinsing to spray tank. Do not dispose of undiluted chemicals on site. Dispose of at a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt. Dispose of waste product through a reputable waste contractor.

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14. TRANSPORT INFORMATION

UN number	Not applicable (road/rail)
Proper shipping name	Not applicable (road/rail)
Class and Subsidiary Risk	Not applicable (road/rail)
Packing Group	Not applicable (road/rail)
EPG	Not applicable (road/rail)
Hazchem code	Not applicable (road/rail)
Marine Pollutant	Yes. If shipped by sea this product is classified as a Class 9 Dangerous Good, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ethoxysulfuron mixture), UN 3077, Packing Group III, Marine Pollutant, Hazchem Code 2Z.

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 56831
See also Section 2.

16. OTHER INFORMATION

Trademark information Hero® is a registered trademark of Bayer.

Preparation information Replaces August 15, 2006 Experimental Product MSDS.
Reasons for revision: Hazard classification, Risk phrases, Formulation composition, Ethoxysulfuron CAS No., Hazards from combustion products, Handling, Physical and chemical properties, Chronic toxicological information, Ecological information, Regulatory information.

This MSDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

END OF MSDS