

# MATERIAL SAFETY DATA SHEET



Date of Issue: February 20, 2007

## 1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name **Hussar<sup>®</sup> Selective Herbicide**

Other names None

Product codes and pack sizes 4249673 (3 Kg)

Chemical group Sulfonylurea + pyrazoline dicarboxylate safener

Recommended use Agricultural herbicide

Formulation Water dispersible granule (WG)

Supplier Bayer CropScience Pty Ltd ABN 87 000 226 022

Address 391 - 393 Tooronga Road, East Hawthorn  
Victoria 3123, Australia

Telephone (03) 9248 6888

Facsimile (03) 9248 6800

Website [www.bayercropscience.com.au](http://www.bayercropscience.com.au)

Contact Development Manager (03) 9248 6888

Emergency

Telephone Number 1800 033 111 – Orica SH&E Shared Services

## 2. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**  
**HAZARDOUS SUBSTANCE (see Risk phrases below) - NON-DANGEROUS GOOD (road/rail)**  
**Very toxic to aquatic organisms.**

Hazard classification Hazardous (National Occupational Health and Safety Commission - NOHSC)

Risk phrases R41 – Risk of serious damage to eyes.  
R65 – Harmful: May cause lung damage if swallowed.

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 this product is a Class 9, 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)
Iodosulfuron-methyl-sodium	[144550-36-7]	50
Mefenpyr-diethyl (crop safener)	[135590-91-9]	150
Hydrocarbon solvent	[64742-94-5]	150
Naphthalene (in hydrocarbon solvent)	[91-20-3]	(15-21)
Precipitated silica	[112926-00-8]	120
Aluminium silicate (Perlite)	[93763-70-3]	50
Other ingredients	(non hazardous)	480

# MATERIAL SAFETY DATA SHEET



Date of Issue: February 20, 2007

## 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.**

<b>Inhalation</b>	If inhaled, remove to fresh air and keep patient warm and at rest. Obtain medical advice if symptoms persist.
<b>Skin contact</b>	Carefully remove contaminated clothing immediately. Wash affected areas with soap and water. Seek medical aid if symptoms persist.
<b>Eye contact</b>	Rinse eyes immediately with plenty of water and obtain urgent medical aid. Seek eye treatment from an ophthalmologist.
<b>Ingestion</b>	Wash out mouth with water. Do NOT induce vomiting. Drink water in small sips. Seek medical advice as above.
<b>First Aid Facilities</b>	Provide eyewash and safety shower facilities in the workplace.
<b>Medical attention</b>	<p><i>Symptoms</i></p> <p><i>Local:</i> Severe eye irritation, irreversible eye damage.</p> <p><i>Systemic:</i> Headaches, dizziness, could be anesthetic and may have other central nervous system effects. May cause lung damage if swallowed.</p> <p><i>Treatment</i> - should be symptomatic and supportive after decontamination. Consult an ophthalmologist if eyes are affected. If a large amount (more than one mouthful) was ingested, the following measures should be considered: -</p> <p>Carry out gastric lavage followed by charcoal (<i>carbo medicinalis</i>) and sodium sulphate administration.</p> <p>Monitor kidney function, liver function and red blood cell count.</p> <p>This product contains a relatively small amount of a hydrocarbon solvent, so care should be taken to prevent pulmonary aspiration. Small amounts aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.</p> <p>Elimination by dialysis (forced alkaline diuresis).</p>

## 5. FIRE FIGHTING MEASURES

<b>Extinguishing media</b>	Foam, water spray
<b>Hazards from combustion products</b>	Oxides of carbon, nitrogen and sulphur, hydrogen chloride, hydrogen iodide and hydrogen fluoride may be released in a fire.
<b>Precautions for fire fighters</b>	Avoid generation of dust clouds. Firefighters 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. Otherwise, spray containers with water to keep cool. 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.
<b>Hazchem code</b>	2Z

# MATERIAL SAFETY DATA SHEET



Date of Issue: February 20, 2007

## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. When dealing with spills do not eat, drink or smoke and wear personal protective clothing and equipment as described in Section 8 - PERSONAL PROTECTION. Prevent spilled material from entering drains or watercourses. Sweep up spilled material, collect and store in properly labelled, sealed drums for safe disposal. Avoid creating dust. 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. Product will damage the eyes and will irritate the skin. Avoid contact with eyes and skin. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use wash gloves, goggles and contaminated clothing. Avoid handling in a manner that will create dust.

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

**Flammability** Combustible. Avoid build up of dust as a dust/air mixture can be explosive.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure standards** The applicable NOHSC Exposure Standards are:  
Precipitated silica TWA 10 mg/m<sup>3</sup>  
Perlite dust TWA 10 mg/m<sup>3</sup>  
The manufacturer of the solvent recommends an Occupational Exposure Limit for solvent naphtha (petroleum), heavy aromatic:  
TWA: 100 mg/m<sup>3</sup> (15 ppm).  
For the small amount of naphthalene present in the solvent the NOHSC Occupational Exposure Limits are:  
TWA: 10 ppm (52 mg/m<sup>3</sup>), STEL: 15 ppm (79 mg/m<sup>3</sup>). Skin notation.

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.

*Exposure standard – Short term exposure limit (STEL)* means a 15 minute TWA exposure which should not be exceeded at any time during the working day.

*Skin notation* – Absorption through the skin may be a significant source of exposure.

**Biological limit values** None allocated

**Engineering controls** Control process conditions to avoid contact. Use local exhaust ventilation during manufacture. 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 or nitrile gloves
- Hussar has a low potential for forming dust. However, when working in a poorly ventilated area, or if airborne concentrations are likely to exceed the exposure standards above, an AS/NZS 1715/1716 approved respirator should be worn.

# MATERIAL SAFETY DATA SHEET



Date of Issue: February 20, 2007

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Yellow to brown free flowing granules
Odour:	Aromatic
pH:	Approximately 9 (1% in water)
Vapour pressure:	$6.7 \times 10^{-6}$ mPa at 25° C (iodosulfuron-methyl-sodium)
Vapour density:	Not available
Boiling point:	Not applicable
Freezing/melting point:	Not available
Solubility:	Disperses in water
Bulk Density:	710 – 820 g/L
Flash Point:	Not applicable
Flammability (explosive) limits:	Not applicable
Auto-ignition temperature:	378° C
Partition coefficient (octanol/water):	<i>Iodosulfuron-methyl-sodium</i> : $\text{Log } P_{ow} = -0.70$ (pH 7)

## 10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Conditions to avoid	Avoid sources of ignition and extreme heat.
Incompatible materials	Avoid strong oxidising agents.
Hazardous decomposition products	Oxides of carbon, nitrogen and sulphur, hydrogen chloride, hydrogen iodide and hydrogen fluoride may be released in a fire.
Hazardous reactions	None known

## 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

Inhalation	The active ingredient has low inhalation toxicity. No data are available for the product, which is expected to have a low inhalation hazard, unless respirable dust is formed. Inhalation of the solvent vapour may be irritating to respiratory tract, may cause headaches and dizziness, could be anaesthetic, and may have other central nervous system effects.
Skin contact	Will irritate the skin. The product had low acute dermal toxicity in the rat, and was not sensitising in the test with guinea pigs. Repeated exposure may cause skin dryness or cracking.
Eye contact	Will damage the eyes. Severely irritating. Damage may be irreversible.
Ingestion	May be harmful if swallowed.

## 11. TOXICOLOGICAL INFORMATION - continued

### ANIMAL TOXICITY DATA – PRODUCT

#### Acute:

<b>Oral toxicity</b>	LD <sub>50</sub> rat: > 2000 mg/kg
<b>Dermal toxicity</b>	LD <sub>50</sub> rat: > 5000 mg/kg ( <i>similar formulation</i> )
<b>Inhalation toxicity</b>	Not considered relevant because of low dust formation.
<b>Skin irritation</b>	Slightly irritating – rabbit
<b>Eye irritation</b>	Irreversible damage to eyes – rabbit
<b>Sensitisation</b>	Not a sensitiser - guinea pig ( <i>similar formulation</i> )

#### Chronic:

Iodosulfuron-methyl-sodium and mefenpyr-diethyl showed no mutagenicity, reproductive toxicity or carcinogenicity in animal studies. Prolonged or repeated skin contact with the hydrocarbon solvent in this product may result in irritation and dermatitis. This product contains naphthalene. The International Agency for Research on Cancer evaluated naphthalene and concluded that there was sufficient evidence for carcinogenicity in experimental animals, but inadequate evidence for cancer in exposed humans. Accordingly, IARC classified naphthalene as a possible human carcinogen (Group 2B).

## 12. ECOLOGICAL INFORMATION

Hussar is very toxic to aquatic plants and certain algae. It has low toxicity to birds, bees and earthworms. Small amounts or very low concentrations can damage non-target vegetation. DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

#### **Ecotoxicity**

##### Hussar (similar formulation):

*Fish toxicity:* LC<sub>50</sub> (96 h) rainbow trout (*Oncorhynchus mykiss*) 10 mg/L

*Toxicity to Daphnia:* EC<sub>50</sub> (48 h) *Daphnia magna* 7.8 mg/L

*Algal toxicity:* EC<sub>50</sub> (72 h) for *Pseudokirchneriella subcapitata* 0.87 mg/L

##### Iodosulfuron-methyl-sodium:

*Fish toxicity:* LC<sub>50</sub> (96 h) rainbow trout (*Oncorhynchus mykiss*) > 100 mg/L

*Toxicity to Daphnia:* EC<sub>50</sub> (48 h) *Daphnia magna* > 100 mg/L

*Algal toxicity:* EC<sub>50</sub> (72 h) for *Selenastrum capricornutum* 0.07 mg/L

*Toxicity to aquatic plants:* EC<sub>50</sub> (14 days) for *Lemna gibba* 0.08 µg/L

*Toxicity to bacteria:* EC<sub>50</sub> (72 h) for *Pseudomonas putida* > 1000 mg/L

*Bird toxicity:* Acute oral LD<sub>50</sub>: > 2000 mg/kg bobwhite quail

#### **Environmental fate, persistence, degradability and mobility**

Photodegradation DT<sub>50</sub> is about 50 days. Abiotic hydrolysis DT<sub>50</sub> 31 days, (pH 5), >365 days (pH 7), 362 days (pH 9) (20° C). Soil DT<sub>50</sub> 1-5 days (7-10 days with low soil moisture); degradation is mainly microbial. K<sub>oc</sub> 0.8-152. Iodosulfuron-methyl-sodium and its metabolites have almost no vertical movement in soil; lysimeter and computer simulation studies indicate that neither iodosulfuron-methyl-sodium nor its metabolites would be transported to soil layers deeper than 1 m.

# MATERIAL SAFETY DATA SHEET



Date of Issue: February 20, 2007

## 13. DISPOSAL CONSIDERATIONS

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in 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.

## 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	2Z
Marine Pollutant	Yes. If Hussar is shipped by sea, it is classified as a Class 9, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (iodosulfuron-methyl-sodium mixture), Packing Group III, UN 3077, Marine Pollutant.

## 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988  
Australian Pesticides and Veterinary Medicines Authority approval number: 52171  
See also Section 2.

## 16. OTHER INFORMATION

Trademark information	Hussar® is a registered trademark of Bayer.
Preparation information	Replaces August 1, 2002 MSDS. Reasons for revision: 16 heading format, product codes and pack sizes, Risk Phrases, Composition/Information on Ingredients, Extinguishing media, Exposure Standards, Physical and Chemical Properties, Toxicological Information, Ecological Information, Marine Pollutant for sea transport.

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