

# MATERIAL SAFETY DATA SHEET



Date of Issue: August 7<sup>th</sup>, 2008

## 1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name **Atlantis<sup>®</sup> OD Selective Herbicide**

Other names None

Product code and pack sizes 79054815 (5 L)

Chemical group Sulfonylurea + pyrazoline dicarboxylate safener

Recommended use Agricultural herbicide

Formulation Oil dispersion (OD)

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).  
Combustible liquid. Will damage eyes. Very toxic to aquatic plants and algae.

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

Risk phrases R38 – Irritating to skin.  
R41 – Risk of serious damage to eyes.  
R43 – May cause sensitisation by skin contact.  
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 (Poisons schedule) Schedule 5 (Standard for the Uniform Scheduling of Drugs and Poisons)

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Mesosulfuron-methyl	[208465-21-8]	30
Mefenpyr-diethyl (crop safener)	[135590-91-9]	90
Solvent naphtha (petroleum), heavy aromatic	[64742-94-5]	624
Fatty alcohol ethoxylate alkyl ether	[345642-79-7]	104
Calcium dodecylbenzene sulfonate	[70528-83-5]	12
Sodium dioctyl sulfosuccinate	[577-11-7]	64
1-Octanol	[111-87-5]	8
Solvent naphtha, light	[64742-95-6]	36
Other ingredients (non-hazardous)	-	72

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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. Wash affected areas with soap and water. Seek medical aid if at all worried.
Eye contact	Rinse eyes immediately with clean water for at least 15 minutes and obtain medical aid. Seek eye treatment from an ophthalmologist.
Ingestion	Wash out mouth with water. Do NOT induce vomiting. Give a glass of water. Keep patient at rest and seek medical advice as above. DO NOT attempt to give anything by mouth to a semi-conscious or unconscious person.
First Aid Facilities	Provide eyewash and safety shower facilities in the workplace.
Medical attention	<p><i>Local:</i> Irritation of eyes and respiratory tract. Skin dryness or cracking from repeated exposure. Potential skin sensitisation.</p> <p><i>Systemic:</i> Headache, dizziness, drowsiness, nausea, confusion, anaesthesia and other central nervous system effects. May cause lung damage if swallowed, with symptoms including cough, tachypnoea (rapid breathing), breathlessness, cyanosis (blueness of the skin) and fever.</p> <p><u>Treatment</u> For <i>local contamination</i> treatment should be symptomatic after decontamination. In case of skin or eye contamination, treat as above under First Aid Measures.</p> <p><u>Note for physicians</u> As this product contains a hydrocarbon liquid, care should be taken to prevent pulmonary aspiration. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.</p> <p>Due to the low oral toxicity, and the risk of aspiration into the lung, gastric lavage is not recommended. In case of ingestion of large amounts, it may be considered after adequate airway protection (intubation with block), as the risk of spontaneous vomiting with aspiration might be higher. Activated charcoal and cathartics (magnesium or sodium) should be given. Treatment should be supportive and symptomatic. In case of acute respiratory distress syndrome, the use of PEEP-ventilation has been suggested. Monitor kidney, liver and pancreas function.</p> <p>Contraindications: Catecholamines should be avoided due to an increased risk of ventricular fibrillation.</p>

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## 5. FIRE FIGHTING MEASURES

Extinguishing media	Water spray, foam, carbon dioxide, dry agent.
Hazards from combustion products	In a fire, formation of hydrogen chloride, cyanides, and oxides of carbon, nitrogen and sulphur can be expected.
Precautions for fire fighters	The product is a Class 1 Combustible Liquid. 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 unopened containers with water to keep cool. Avoid spraying directly into containers due to danger of boilover. 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 the spilled material or contaminated surfaces. Extinguish all possible sources of ignition. 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. Contain spill and absorb with earth, sand, clay, or other absorbent material. Collect and store in properly labelled, sealed drums for safe disposal. Thoroughly ventilate the area after cleanup. 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 damage the eyes. Will irritate the skin. Avoid contact with eyes and skin. Do not inhale vapour. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. After handling and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, goggles or face-shield and contaminated clothing. Keep product away from sources of ignition.
Storage	Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Keep away from ignition sources and protect from extreme heat.
Flammability	Combustible liquid, Class C1 – flashpoint greater than 60°C and less than 150°C.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure standards** 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>).

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.

**Biological limit values** None allocated

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

**Personal Protective Equipment**

<b>Eyes:</b>	Goggles or face-shield
<b>Clothing:</b>	Cotton overalls buttoned to the neck and wrist (or equivalent clothing).
<b>Gloves:</b>	Elbow-length PVC or nitrile gloves.
<b>Respiratory:</b>	If airborne concentrations are likely to exceed the exposure standards above or if inhalation of vapour is likely, an AS/NZS 1715/1716 approved respirator should be worn.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Brown liquid
<b>Odour:</b>	Aromatic
<b>pH:</b>	6.2 (1% dilution)
<b>Vapour pressure:</b>	0.005 kPa (20 °C) – (solvent)
<b>Vapour density:</b>	> 1.00 (101.3 kPa/air=1) (solvent)
<b>Boiling point:</b>	220 to 290° C (boiling point range of solvent)
<b>Freezing/melting point:</b>	- 13° C (solvent)
<b>Solubility:</b>	Disperses in water.
<b>Specific Gravity:</b>	1.040 at 20° C
<b>Flash Point:</b>	> 100° C (Setaflash Closed Cup) 94 – 95 ° C (Pensky –Martens Closed Cup)
<b>Flammability (explosive) limits:</b>	LEL: 0.6; UEL: 7.0 Vol. % in air (solvent)
<b>Auto-ignition temperature:</b>	435° C
<b>Partition coefficient (octanol/water):</b>	Mesosulfuron-methyl: Log P <sub>ow</sub> = 1.9 (25°C); Mefenpyr-diethyl: Log P <sub>ow</sub> = 3.83 (21° C)

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## 10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Conditions to avoid	Avoid ignition sources and extreme heat. Do not store for prolonged periods in direct sunlight.
Incompatible materials	Avoid strong oxidising agents, reducing agents, acids and bases.
Hazardous decomposition products	In a fire, formation of hydrogen chloride, cyanides, and oxides of carbon, nitrogen and sulphur can be expected.
Hazardous reactions	None

## 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

Inhalation	Product is expected to have low toxicity by the inhalation route. High vapour concentrations may be irritating to the respiratory tract, may cause headaches, drowsiness and dizziness, could be anaesthetic and may have other central nervous system effects.
Skin contact	Will irritate the skin. May cause sensitisation by skin contact. The product is expected to have low acute dermal toxicity. Repeated exposure may cause skin dryness or cracking.
Eye contact	Will damage the eyes.
Ingestion	May be harmful if swallowed. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

### ANIMAL TOXICITY DATA – PRODUCT

Acute:	
Oral toxicity	LD <sub>50</sub> rat: ≥ 5000 mg/kg
Dermal toxicity	LD <sub>50</sub> rat: > 2000 mg/kg
Inhalation toxicity	LC <sub>50</sub> rat: > 1.33 mg/L (4h) - <i>Mesosulfuron-methyl</i> Highest attainable concentration
Skin irritation	Irritating to skin - rabbit
Eye irritation	Severe eye irritation - rabbit
Sensitisation	Non-sensitising

### Chronic:

Mesosulfuron-methyl and mefenpyr-diethyl showed no mutagenicity, reproductive toxicity or carcinogenicity in animal studies. Prolonged or repeated skin contact with the 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).

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## 12. ECOLOGICAL INFORMATION

Atlantis OD is highly toxic to the aquatic plant, *Lemna gibba* and moderately toxic to freshwater green algae, rainbow trout and *Daphnia*. It has low toxicity to bees, birds, 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

Atlantis: (Similar Formulation)

Fish toxicity: LC<sub>50</sub> (96 h) rainbow trout (*Oncorhynchus mykiss*) 3.2 mg/L

Daphnia toxicity: EC<sub>50</sub> (48 h) water flea (*Daphnia magna*) 3.4 mg/L

Algal toxicity: EC<sub>50</sub> (72 h) green algae (*Pseudokirchneriella subcapitata*) 2.96 mg/L

Aquatic plant toxicity: EC<sub>50</sub> (7 d) duck weed (*Lemna gibba*): 50.7 µg/L

Mesosulfuron-methyl:

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

Daphnia toxicity: EC<sub>50</sub> (48 h) water flea (*Daphnia magna*) > 100 mg/L

Algal toxicity: EC<sub>50</sub> (72 h) green algae (*Pseudokirchneriella subcapitata*) 0.18 mg/L

Aquatic plant toxicity: EC<sub>50</sub> (7 d) duck weed (*Lemna gibba*): 0.6 µg/L

Bird toxicity: LD<sub>50</sub> bobwhite quail and mallard duck > 2000 mg/kg

### Environmental fate, persistence, degradability and mobility

Mesosulfuron-methyl is readily to slightly degradable in water. It is fairly degradable in soil with a low potential for accumulation or persistence in the environment. Mesosulfuron-methyl and its metabolites do not have significant leaching potential in soil. DT<sub>50</sub> in field studies: 44 to 76 days (mesosulfuron-methyl).

## 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. If unwanted product cannot be used, dispose of it through a reputable disposal contractor.

## 14. TRANSPORT INFORMATION

UN number	Not relevant (road/rail)
Proper shipping name	Not relevant (road/rail)
Class and Subsidiary Risk	Not relevant (road/rail)
Packing Group	Not relevant (road/rail)
EPG	Not relevant (road/rail)
Hazchem code	Not relevant (road/rail)
Marine Pollutant	Yes. If Atlantis OD Selective Herbicide is shipped by sea, it is classified as a Class 9, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains mesosulfuron-methyl), UN 3082, Packing Group III, Hazchem 3Z, Marine Pollutant.

## 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988

Australian Pesticides and Veterinary Medicines Authority approval number: 62551

See also Section 2.

<b>16. OTHER INFORMATION</b>
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**Trademark information**                      Atlantis® is a registered trademark of Bayer.

**Preparation information**                      Replaces February 14<sup>th</sup>, 2008 edition.  
Reasons for update: Product codes, Formulation composition, Medical attention, Acute toxicity data.

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