1. IDENTIFICATION OF MATERIAL AND SUPPLIER

Product name	**Eclipse® 100 SC Herbicide**
Other names	None
Product codes and pack sizes	79654154 (3 L), 79640056 (5 L)
Chemical group	Triazolopyrimidine
Recommended use	Agricultural Herbicide
Formulation	Suspension Concentrate (SC)
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
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) – DANGEROUS GOOD

Very toxic to aquatic plants and toxic to aquatic algae.

Hazard classification	Hazardous (National Occupational Health and Safety Commission - NOHSC)
Risk phrases	R23 – Toxic by inhalation R40 – Limited evidence of a carcinogenic effect. R48/22 – Harmful: danger of serious damage to health by prolonged exposure if swallowed.
Safety phrases	See Sections 4, 5, 6, 7, 8, 10, 12, 13
ADG classification	See Section 14.
SUSDP classification (Poison Schedule)	Schedule 6 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Metosulam	[139528-85-1]	100
Propane-1,2-diol	[57-55-6]	80
Other ingredients	non hazardous	870

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, keep warm and at rest. Seek medical advice if at all worried. If breathing stops or shows signs of failing, start artificial respiration. Call for prompt medical attention.
Skin contact	Carefully remove contaminated clothing and footwear. 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.
Ingestion	Wash out mouth with water. Do NOT induce vomiting. Give a glass of water. Seek immediate 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	Treatment Treatment should be symptomatic and supportive after decontamination. There is no specific antidote. Gastric lavage is not normally required. If a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate.

5. FIRE FIGHTING MEASURES

Extinguishing media	Water spray, foam, carbon dioxide, sand.
Hazards from combustion products	In a fire, formation of hydrogen chloride, hydrogen cyanide, and oxides of carbon, sulphur and nitrogen can be expected.
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. Otherwise, spray containers with water to keep cool. Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire control water or other extinguishing agent and spillage safely later.
Hazchem	Not relevant.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. When dealing with spills, do not smoke, eat or drink and wear personal protective clothing and equipment as described in Section 8 – PERSONAL PROTECTION. Clear area of unnecessary people. 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 labeled, sealed drums 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	Poisonous if inhaled. Avoid contact with skin. Do not inhale vapour or spray mist. When opening the container and preparing the product for use, wear elbow-length PVC gloves and a half facepiece respirator. When using the product wear a half facepiece respirator. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves.
Storage	Store in the closed, original container in a cool, dry, well-ventilated area. Do not store for prolonged periods in direct sunlight.
Flammability	Not flammable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards	The National Occupational Health and Safety Commission (NOHSC) Exposure Standards are: Propane-1,2-diol total: (vapour & particulate): TWA 150 ppm (474 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 only in well-ventilated areas.

Personal Protective Equipment	Eyes:	Goggles if exposure is possible.
	Clothing:	Cotton overalls buttoned to the neck and wrist and a washable hat.
	Gloves:	Elbow-length PVC or nitrile gloves.
	Respiratory:	Half facepiece respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White to beige liquid
Odour:	Weak, characteristic
pH:	5.0 – 8.0 (undiluted)
Vapour pressure:	Not available
Vapour density:	Not available
Boiling point:	Not available
Freezing/melting point:	Not available
Solubility:	Disperses in water
Specific Gravity:	1.054 at 20 ˚C
Flash Point:	No flash point – Determination conducted up to the boiling point.
Flammability (explosive) limits:	Not available
Auto-ignition temperature:	505 °C
Partition coefficient (octanol/water):	Metosulam: Log P_{ow} = 2.46 (pH 7, 20 °C)

10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Conditions to avoid	Extreme heat. Do not store for prolonged periods in direct sunlight.
Incompatible materials	Avoid contact with strong oxidizing agents, acids and reducing agents.
Hazardous decomposition products	In a fire, formation of hydrogen chloride, hydrogen cyanide (hydrocyanic acid), and oxides of carbon, sulphur and nitrogen can be expected.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation	Toxicological testing on the formulated product suggests that it is harmful if inhaled.
Skin contact	The product had low acute dermal toxicity, is non-irritating and non-sensitising.
Eye contact	May irritate the eyes.
Ingestion	Low acute oral toxicity. Danger of serious damage to health by prolonged exposure if swallowed.

ANIMAL TOXICITY DATA – PRODUCT

Acute:

Oral toxicity	LD_{50} rat: > 5000 mg/kg
Dermal toxicity	LD_{50} rat: > 2000 mg/kg
Inhalation toxicity	LC_{50} rat: > 4.08 mg/L aerosol (4h) Highest attainable concentration.
Skin irritation	Not irritating (rabbit)
Eye irritation	Slightly irritating (rabbit).
Sensitisation	Not sensitising (guinea pig)

Chronic:

The active ingredient metosulam has shown to be carcinogenic in a feeding study in rats. Metosulam showed severe effects on the retina and loss of sight were observed in dogs after repeated administration. Metosulam showed no evidence of potential to cause birth defects or cause damage to genetic material.

12. ECOLOGICAL INFORMATION

Eclipse 100 SC Herbicide is very toxic to aquatic plants, toxic to aquatic algae and harmful to aquatic invertebrates. The product is practically non-toxic to fish, honey bees and earthworms. Metosulam was practically non-toxic to birds.
DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

Ecotoxicity	Eclipse 100 SC Herbicide	
	Fish toxicity:	LC_{50} (96 h) rainbow trout (*Oncorhynchus mykiss)* >800 mg/L
	Daphnia toxicity:	EC_{50} (48 h) water flea (*Daphnia magma)* 64 mg/L
	Algal toxicity:	E_rC_{50} (24-48 h) green algae (*Desmodesmus subspicatus)* 1.9 mg/L
	Aquatic plant toxicity:	E_rC_{50} (7 d) duck weed (*Lemna gibba*): 0.00085 mg/L
	Metosulam	
	Bird toxicity:	LD_{50} bobwhite quail > 2250 mg/kg
		LD_{50} mallard duck > 2000 mg/kg
Environmental fate, persistence and degradability, mobility	DT_{50} = 6 d (laboratory, 4 soils, 20 ˚C). DT_{50} = 25 d (field, top 10 cm of soil). Mean K_{OC} (9 soils) < 500.	

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. Do not re-use empty container for any other purpose. Dispose of waste product via a reputable disposal contractor.

14. TRANSPORT INFORMATION

UN number	UN 3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (contains metosulam)
Class and Subsidiary Risk	Class 9
Packing Group	Packing Group III
Hazchem code	▪3Z
Marine Pollutant	Yes
Note for Road and Rail Transport	According to AU01, Environmentally Hazardous Substances in packagings, IBCs or any other receptacle not exceeding 500 kg or 500 L are not subject to the ADG Code

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988.

Australian Pesticides and Veterinary Medicines Authority product number: 63231 See also Section 2.

16. OTHER INFORMATION

Trademark information	Eclipse® is a Registered Trademark of Bayer.
Preparation information	Replaces 18 March, 2008 experimental product MSDS. Reasons for change: Risk phrases, formulation composition, medical attention, extinguishing media, handling, exposure standards, PPE, potential health effects, aquatic plant toxicity, environmental fate, transport 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