

MATERIAL SAFETY DATA SHEET



Date of Issue: 20th December 2011

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product name **Betanal[®] Flow Herbicide**

Other names None

Product codes and pack sizes 79736347 (5 L)

Chemical group Phenyl carbamate

Recommended use Agricultural herbicide

Formulation Suspo-emulsion (SE)

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 NON - HAZARDOUS SUBSTANCE – DANGEROUS GOOD

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

Risk phrases None

Safety phrases See Sections 4, 5, 6, 7, 8, 10, 12, 13

ADG classification See Section 14.

SUSMP classification (Poison Schedule) Non-Scheduled (Standard for the Uniform Scheduling of Medicines and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Phenmedipham	[13684-63-4]	160
Isotridecanol, ethoxylated	[9043-30-5]	<250
1,2-Propanediol	57-55-6	31.5
Other ingredients	Non-hazardous	≤ 600

MATERIAL SAFETY DATA SHEET



Date of Issue: 20th December 2011

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. Support respiration if necessary.
Skin contact	Carefully remove contaminated clothing at once. Wash affected areas with soap and water and rinse well. Seek medical aid if symptoms persist.
Eye contact	Hold eyes open and flood with water for at least 15 minutes and obtain medical aid, preferably from an ophthalmologist.
Ingestion	Wash out mouth with water. Do NOT induce vomiting. Give a glass of water to drink. Keep patient at rest and 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	Initial treatment should be symptomatic and supportive. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. Forced alkaline diuresis and hemodialysis may be considered. There is no specific antidote.

5. FIRE FIGHTING MEASURES

Extinguishing media	Water spray, carbon dioxide, alcohol-resistant foam, dry chemical
Hazards from combustion products	In a fire hazardous decomposition products may be produced, such as carbon monoxide and oxides of nitrogen.
Precautions for fire fighters	Combustible liquid. There is a possibility of re-ignition of vapours from a distance. Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). Toxic decomposition products may be produced in a fire. If it can be done safely, remove intact containers from exposure to fire. Otherwise, use water spray to cool them. Keep unnecessary people away. Bund area to prevent contamination of water sources. Dispose of fire control water and spillage safely later.
Hazchem code	•3Z

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled material or contaminated surfaces. Extinguish or remove possible sources of ignition. Do not smoke. Do not eat or drink, and wear protective clothing and equipment as described in Section 8 – PERSONAL PROTECTION. Keep people and animals away and upwind. 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. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

MATERIAL SAFETY DATA SHEET



Date of Issue: 20th December 2011

7. HANDLING AND STORAGE

- Handling** May irritate the skin. Avoid contact with skin. When opening the container, mixing and loading and using the prepared spray, wear cotton overalls (or equivalent clothing) buttoned to the neck and wrists and elbow-length chemical resistant gloves. Wash hands after use. After each day's use, wash gloves and contaminated clothing.
- Storage** Store in the closed, original container in a cool, dry, well-ventilated area. Do not store for prolonged periods in direct sunlight. Protect from freezing.
- Flammability** Combustible liquid, Class C1 – flashpoint between 61° C and 150° C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards

Components	CAS-No.	Control parameters	Update	Basis
1,2-Propanediol (Total vapour and particulates.)	57-55-6	474 mg/m ³ / 150 ppm (TWA)	08 2005	AU OEL
1,2-Propanediol (Particulate.)	57-55-6	10 mg/m ³ (TWA)	08 2005	AU OEL

Definitions:

AU OEL – Australian Occupational Exposure Limit

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.

Peak limitation – A maximum or peak airborne concentration determined over the shortest analytically practicable period of time which does not exceed 15 minutes.

Biological limit values

None allocated

Engineering controls

Control process conditions to avoid contact and to comply with exposure standards above. Ensure adequate ventilation, especially in confined areas. Use local exhaust ventilation during manufacturing operations. Use in a well-ventilated area only.

Personal Protective Equipment

No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice.

MATERIAL SAFETY DATA SHEET



Date of Issue: 20th December 2011

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White to beige liquid
Odour:	Weak, aromatic
pH:	3.0 – 7.0 at 23° C (10%)
Vapour pressure:	Not available
Vapour density:	Not available
Boiling point:	Not available
Freezing/melting point:	Not available
Solubility:	Dispersible in water
Specific Gravity:	ca. 1.01g/cm ³ at 20° C
Flash Point:	>100° C
Flammability (explosive) limits:	Not available
Ignition temperature:	450° C
Partition coefficient (octanol/water):	Not available
Viscosity, dynamic:	150 - 250 mPa.s at 20 °C Velocity gradient 20 /s Shear rate of 20/sec
	80 - 130 mPa.s at 20 °C Velocity gradient 100 /s Shear rate of 100/sec
Surface tension:	
Explosivity:	34.0 mN/m at 40 °C Not explosive

10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Incompatible materials	Oxidising agents.
Hazardous decomposition products	In a fire hazardous decomposition products may be produced, such as carbon monoxide and oxides of nitrogen.
Hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Skin contact	May cause skin irritation
Eye contact	May cause eye irritation
Ingestion	The product has low oral toxicity

MATERIAL SAFETY DATA SHEET



Date of Issue: 20th December 2011

ANIMAL TOXICITY DATA – SIMILAR PRODUCT

Acute:

Oral toxicity	LD ₅₀ rat: >2000 mg/kg
Dermal toxicity	LD ₅₀ rat: >2000 mg/kg
Skin irritation	Slightly irritating (rabbit)
Eye irritation	Slightly irritating (rabbit)
Sensitisation	Non-sensitising (guinea pig) OECD Test Guideline 406, Buehler test

Chronic:

In animal studies, phenmedipham was not mutagenic, carcinogenic, teratogenic, embryotoxic or neurotoxic, and did not affect reproduction.

12. ECOLOGICAL INFORMATION

Very toxic to aquatic organisms. Low toxicity to birds, bees and earthworms.
DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

Ecotoxicity

Phenmedipham:

Fish toxicity: LC₅₀ (96 h) rainbow trout 1.3 mg/L

Daphnia toxicity: EC₅₀ (48 h) water flea (*Daphnia magna*) 0.5 mg/L

Algal toxicity: IC₅₀ (96 h) algae (*Scenedesmus subspicatus*) 0.086 mg/L

Environmental fate, persistence and degradability, mobility

Phenmedipham is not readily biodegradable. In bluegill sunfish the bioconcentration factor (BCF) is 165. In rainbow trout the BCF is 321. The DT₅₀ in soil is approximately 25 days; DT₉₀ approximately 108 days. Phenmedipham does not accumulate in soil. No risk of groundwater contamination is expected. K_{oc} is 2400.

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 500mm 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 via a licensed disposal contractor to an approved landfill.

14. TRANSPORT INFORMATION

UN number	UN 3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (contains phenmedipham solution)
Class and Subsidiary Risk	Class 9
Packing Group	Packing Group III
Hazchem code	•3Z

MATERIAL SAFETY DATA SHEET



Date of Issue: 20th December 2011

Marine Pollutant	Yes
Note for Road and Rail Transport	According to AU01, Environmentally Hazardous Substances in packagings, IBC 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 Code Act 1994.
Australian Pesticides and Veterinary Medicines Authority approval number: 64522
See also Section 2.

16. OTHER INFORMATION

Trademark information	Betanal® is a Registered Trademark of Bayer.
Preparation Information	New MSDS

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