

SAFETY DATA SHEET



Date of Issue: June 7th 2012

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product name Velocity® Selective Herbicide
Other names None
UVP 79140282
Chemical group Pyrazole + hydroxybenzoxazole + pyrazoline dicarboxylate
Recommended use Agricultural Herbicide
Formulation Emulsifiable Concentrate
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
Combustible liquid. Dangerous to the aquatic environment.

Hazard classification Hazardous (National Occupational Health and Safety Commission – NOHSC)
Risk phrases R65 – Harmful: may cause lung damage if swallowed.
R63 – Possible risk of harm to the unborn child.
R36 – Irritating to eyes
R43 – May cause sensitisation by skin contact
R20 – Harmful by inhalation
Safety phrases See Sections 4, 5, 6, 7, 8, 10, 12, 13.
ADG classification See Section 14.
SUSDP classification (Poisons Schedule) Schedule 6 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Pyrasulfotole	[365400-11-9]	37.5
Bromoxynil octanoate	[1689-99-2]	153 (≡ 105 g/L bromoxynil)
Bromoxynil heptanoate	[56634-95-8]	148 (≡ 105 g/L bromoxynil)
Mefenpyr-diethyl (crop safener)	[135590-91-9]	9.4
Solvent naphtha (petroleum), heavy aromatic	[64742-94-5]	381
Other ingredients	Non-hazardous	413

SAFETY DATA SHEET



Date of Issue: June 7th 2012

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 Safety Data Sheet to the doctor.

Inhalation If inhaled, remove to fresh air and keep at rest. Seek medical advice immediately. Administer artificial respiration if breathing has stopped.

Skin contact Carefully remove contaminated clothing. Wash affected area with soap and water. Seek medical advice.

Eye contact Rinse eyes immediately with clean water for at least 15 minutes, holding eye open. Seek medical aid.

Ingestion Obtain immediate medical advice. Wash out mouth with water. Give water in small sips to drink. DO NOT induce vomiting. DO NOT attempt to give anything by mouth to a semi-conscious or unconscious person.

First Aid Facilities Provide eye wash and safety showers in the workplace.

Medical attention
Symptoms
Local: skin and eye irritation.
Systemic: headaches, dizziness, drowsiness, other central nervous system effects, fatigue, thirst, high temperature, anxiety, hyperventilation, tachycardia and muscle rigidity, typical of malignant hyperthermia.

Treatment

Local: Treat as above under First Aid Measures.

Systemic: As this product contains a **hydrocarbon solvent**, 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.

If more than a mouthful has been ingested the following measures should be considered:
Monitor respiratory and cardiac functions and body temperature.
Keep airway clear, administer artificial respiration if necessary.
Gastric lavage with charcoal administration, and if necessary further treatment.
Keep at rest.

In case of hyperthermia physical cooling is advisable. In case of muscle rigidity, relaxants and mechanical ventilation may support in counteracting hyperthermia.
Against convulsions: give diazepam
Contraindications: antipyretics

SAFETY DATA SHEET



Date of Issue: June 7th 2012

5. FIRE FIGHTING MEASURES

- Extinguishing media** Water, alcohol-resistant foam, dry powder, carbon dioxide.
- Hazards from combustion products** Nitrogen oxides, hydrogen bromide, hydrogen chloride, hydrogen fluoride, sulphur oxides, hydrogen cyanide, carbon dioxide and carbon monoxide.
- Precautions for fire fighters** The product is a Class C1 Combustible liquid. Firefighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). Toxic decomposition products may be produced in a fire. Isolate area. Keep unnecessary people away and upwind. If possible and without risk, remove intact containers from exposure to fire. Otherwise, spray unopened 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.
- Hazchem Code** -3Z

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. Extinguish all possible sources of ignition. Do not smoke, eat or drink 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. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

7. HANDLING AND STORAGE

- Handling** Harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. When opening the container and preparing the spray, wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and elbow-length chemical resistant gloves. If product in eyes, wash it out immediately with water. Wash hands after use. After each day's use wash gloves and contaminated clothing.
- 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 all ignition sources and protect from extreme heat.
- Flammability** Combustible liquid, Class C1 - flashpoint between 61° C and 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/m³ (15 ppm). For the small amount of naphthalene present in the solvent the NOHSC Occupational Exposure Limits are: TWA: 10 ppm (52 mg/m³), STEL: 15 ppm (79 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.
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.

SAFETY DATA SHEET



Date of Issue: June 7th 2012

8. EXPOSURE CONTROLS / PERSONAL PROTECTION - continued

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	Product is irritating to eyes and skin. <ul style="list-style-type: none">• Wear a face shield or goggles if exposure is possible.• Wear cotton overalls buttoned to the neck and wrist.• Wear 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear amber liquid
Odour:	Aromatic solvent odour
pH:	3.9 (10% solution)
Vapour pressure:	0.006 kPa (at 20 °C) (hydrocarbon solvent)
Vapour density:	> 1.00 (hydrocarbon solvent)
Boiling point:	220 to 290° C (boiling point range of solvent)
Freezing/melting point:	Not available
Solubility:	Emulsifies in water
Specific Gravity:	1.142
Flash Point:	91 °C (Pensky-Martens Closed Cup)
Flammability (explosive) limits:	LEL: 0.6; UEL: 7.0 Vol. % in air (hydrocarbon solvent)
Auto-ignition temperature:	395 °C
Viscosity	19.8 mPa.s at 25 °C
Partition coefficient (octanol/water):	Pyrasulfotole: Log P _{OW} = -1.362 at 23 °C (pH 7) Bromoxynil octanoate: Log P _{OW} = 5.9 (pH 7) Bromoxynil heptanoate: Log P _{OW} = 5.4 (pH 7) Mefenpyr-diethyl: Log P _{OW} = 3.83 at 21 °C (pH 6.3)

10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use and storage.
Conditions to avoid	Avoid sources of ignition and extreme heat.
Incompatible materials	Avoid strong oxidising agents, acids and bases.
Hazardous decomposition products	Nitrogen oxides, hydrogen bromide, hydrogen chloride, hydrogen fluoride, sulphur oxides, hydrogen cyanide, carbon dioxide and carbon monoxide may be released in a fire.
Hazardous reactions	None.

SAFETY DATA SHEET



Date of Issue: June 7th 2012

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation	Product has low inhalation toxicity. Inhalation of 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 irritate 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 ₅₀ rat: 500 mg/kg
Dermal toxicity	LD ₅₀ rat: > 4000 mg/kg
Inhalation toxicity	LC ₅₀ (4 h) rat: > 5mg/L (aerosol) - highest attainable concentration
Skin irritation	Mild skin irritation (rabbit)
Eye irritation	Moderate eye irritation (rabbit)
Sensitisation	Non-sensitising (guinea pig)

Chronic:

Pyrasulfotole is not mutagenic, and gave no indication of toxic effects in reproduction studies and was not teratogenic in animal studies. A possible carcinogenic effect is indicated at high doses in animal studies. The mechanism that triggers tumours in rodents is not relevant to humans.

Bromoxynil is classified by NOHSC as a Category 3 reproductive toxin.

Mefenpyr-diethyl shows no mutagenicity, reproductive toxicity or carcinogenicity in animal studies.

The solvent in this product contains small amounts of naphthalene, which is classified as a Category 3 carcinogen by NOHSC. Frequent or prolonged contact with the hydrocarbon solvent in this product may defat and dry the skin, leading to discomfort and dermatitis.

12. ECOLOGICAL INFORMATION

DO NOT contaminate streams, rivers or waterways with this product or used containers.

Ecotoxicity	<u>Pyrasulfotole:</u>	
	<i>Fish toxicity:</i>	LC ₅₀ (96 h) for rainbow trout > 100 mg/L LC ₅₀ (96 h) for bluegill sunfish > 100 mg/L LC ₅₀ (96 h) for sheepshead minnow > 100 mg/L
	<i>Daphnia toxicity:</i>	EC ₅₀ (48 h) for <i>Daphnia magna</i> > 100 mg/L
	<i>Algae toxicity:</i>	EC ₅₀ (96 h) for algae 29.8 mg/L (<i>Pseudokirchneriella subcapitata</i>)
	<i>Bird toxicity:</i>	LD ₅₀ bobwhite quail > 2000 mg/kg

SAFETY DATA SHEET



Date of Issue: June 7th 2012

12. ECOLOGICAL INFORMATION - continued

Ecotoxicity

Bromoxynil octanoate:

Fish toxicity: LC₅₀ (96 h) for bluegill sunfish 0.06 mg/L
Daphnia toxicity: EC₅₀ (48 h) for *Daphnia magna* 0.046 mg/L
Algae toxicity: EC₅₀ (96 h) for algae 1 mg/L (*Desmodesmus subspicatus*)
Bird toxicity: LD₅₀ bobwhite quail 170 mg/kg
LD₅₀ mallard duck 2350 mg/kg

Bromoxynil heptanoate:

Fish toxicity: LC₅₀ (96 h) for bluegill sunfish 0.029 mg/L
Daphnia toxicity: EC₅₀ (48 h) for *Daphnia magna* 0.031 mg/L
Algae toxicity: EC₅₀ (120 h) for algae 0.083 mg/L (*Selenastrum capricornutum*)
Bird toxicity: LD₅₀ bobwhite quail 379 mg/kg

Mefenpyr-diethyl:

Fish toxicity: LC₅₀ (96 h) for rainbow trout 4.2 mg/L
LC₅₀ (96 h) for carp 2.4 mg/L
Daphnia toxicity: LC₅₀ (48 h) for *Daphnia magna* 53 mg/L
Algae toxicity: E_bC₅₀ (72 h) for algae 5.8 mg/L (*Desmodesmus subspicatus*)
Bird toxicity: LD₅₀ Japanese quail > 2000 mg/kg

Environmental fate, persistence and degradability, mobility

Pyrasulfotole is not readily biodegradable. Pyrasulfotole is expected to be persistent under certain conditions and mobile in the environment.
Bromoxynil is degraded in soil by hydrolysis and debromination to less toxic substances such as hydroxybenzoic acid. DT₅₀ < 1 d (laboratory studies).
Mefenpyr-diethyl is completely mineralised in soil by hydrolysis, microbial and photolytic degradation processes; DT₅₀ < 10d.

13. DISPOSAL CONSIDERATIONS

(10, 15 and 20 L containers)

Triple rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace caps and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and deliver empty packaging to an approved waste management facility. DO NOT burn empty containers or product. DO NOT re-use empty containers for any other purpose.

(110 L returnable containers)

If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. Empty container by pumping through dry-break connection system. Do not attempt to breach the valve system or the filling point, or contaminate the container with water or other products. Ensure that the coupler, pump, meter and hoses are disconnected, triple rinsed and drained after each use. When empty, or contents no longer required, return the container to the point of purchase. This container remains the property of Bayer CropScience Pty Ltd.

1000 L minibulk container

If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. Empty product as required into application equipment. Do not attempt to breach the valve system or filling point, or contaminate the container with water or other products. Ensure that equipment used in transfer of the product is disconnected, triple rinsed and drained after each use. When the container is empty, close all caps and valves and return the container to the point of purchase.

SAFETY DATA SHEET



Date of Issue: June 7th 2012

14. TRANSPORT INFORMATION

UN number	UN 3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (contains bromoxynil)
Class and Subsidiary Risk	Class 9
Packing Group	Packing Group III
Hazchem code	•3Z
Marine Pollutant	Yes – Bromoxynil is a Marine Pollutant, Class "P" (on IMDG list).
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: 62444

See Section 2.

16. OTHER INFORMATION

Trademark information	Velocity® is a Registered Trademark of Bayer
Preparation information	Replaces September 6 th , 2010 edition. Reasons for revision: MSDS wording, Product Code to UVP and Ingredients.

This SDS 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 SDS 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 SDS