

MATERIAL SAFETY DATA SHEET



Date of Issue: May 2, 2007

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product name Precept® Selective Herbicide
(Experimental product)

Other names None

Product codes AE 0317309 05 EC15 A1

Chemical group Phenoxy + pyrazolone + pyrazole crop safener

Recommended use Agricultural herbicide

Formulation Emulsifiable concentrate

Supplier Bayer CropScience Pty Ltd ABN 87 000 226 022

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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HAZARDOUS SUBSTANCE (see Risk phrases below) – **NON DANGEROUS GOOD** (road/rail)
Combustible liquid. Harmful to aquatic organisms.

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

Risk phrases R38 – Irritating to skin.
R41 – Risk of serious eye damage.
R65 - Harmful: May cause lung damage if swallowed.

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

ADG classification Not a "Dangerous good" for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

SUSDP classification (Poison Schedule) Not assessed (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
MCPA ethyl hexyl ester	[29450-45-1]	~ 200 (≡ 125 MCPA)
Pyrasulfotole (ISO provisionally approved)	[365400-11-9]	25
Mefenpyr-diethyl	[135590-91-9]	6.25
Hydrocarbon solvent	[64742-94-5]	~ 300
Naphthalene (in hydrocarbon solvent)	[91-20-3]	(~ 30 – 42)
Other ingredients, including solvents and emulsifiers	(non hazardous)	~ 520

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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 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. Wash affected areas with soap and water. Seek medical aid if symptoms persist.
Eye contact	Rinse eyes immediately with clean water for at least 15 minutes and obtain urgent medical aid.
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>Note:</i> The ester form of MCPA is generally less toxic and irritating to mammals than MCPA (acid form).</p> <p><u>Symptoms</u></p> <p><i>Local:</i> Risk of serious eye damage. Irritation of skin and respiratory tract. Skin dryness or cracking from repeated exposure.</p> <p><i>Systemic poisoning due to MCPA:</i> Headache, vomiting, lethargy, muscular twitching, liver and kidney function disturbance, hypotension/hypertension. Ingestion of large amounts may cause central nervous system depression, stupor, coma and respiratory failure.</p> <p><i>Systemic poisoning due to the hydrocarbon solvent:</i> Headache, dizziness, anaesthesia and other central nervous system effects, lung damage if swallowed.</p> <p><u>Treatment</u></p> <p>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>For <i>systemic poisoning</i>, the following measures are recommended for poisoning due to MCPA: Monitor respiratory, cardiac, kidney and liver function, and central nervous system. Observe blood pressure, MCPA plasma level, urinary MCPA level and pH. Gastric lavage and administration of charcoal. Endotracheal intubation and artificial respiration as necessary. Elimination by dialysis – forced alkaline diuresis. Anticonvulsant therapy as necessary – Diazepam 5-10 mg i.v. for adults (<i>pro rata</i> for children) as necessary until fully sedated. There is no specific antidote and no contraindications. Recovery is expected to be spontaneous. 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>

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5. FIRE FIGHTING MEASURES

Extinguishing media	Foam, carbon dioxide, dry agent or water spray.
Hazards from combustion products	In a fire, irritant and toxic fumes containing carbon monoxide, hydrogen chloride, chlorine, hydrogen fluoride, nitrogen oxides, sulphur oxides and hydrogen cyanide may be released.
Precautions for fire fighters	The product is a Class C1 Combustible liquid. Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). Keep unnecessary people away. If it can be done safely, remove intact containers from the fire. Otherwise, use water spray to cool them. 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 code	Not applicable

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled material or contaminated surfaces. Extinguish or remove possible sources of ignition. When dealing with spills do not eat, drink or smoke and wear protective clothing and equipment as described in Section 8 - PERSONAL PROTECTION. Keep people and animals away. 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	Keep out of reach of children. Will irritate skin. Will damage eyes. Avoid contact with eyes and skin. Do not inhale vapour. If product in eyes, wash it out immediately with water. If product on skin, immediately wash area with soap and water. 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, face shield or goggles, 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. Keep away from ignition sources.
Flammability	Combustible liquid, Class C1 - flashpoint between 61° C and 150° C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards	<p>There are no applicable NOHSC Exposure Standards.</p> <p>The manufacturer of the solvent recommends an Occupational Exposure Limit for solvent naphtha (petroleum), heavy aromatic: TWA: 100 mg/m³ (15 ppm).</p> <p>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).</p> <p><u>Definitions</u></p> <p><i>Exposure standard – Time Weighted Average (TWA)</i> means the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.</p> <p><i>Exposure standard – Short term exposure limit (STEL)</i> means a 15 minute TWA exposure which should not be exceeded at any time during the working day.</p>
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8. EXPOSURE CONTROLS / PERSONAL PROTECTION - continued

Biological limit values	None allocated
Engineering controls	Control process conditions to avoid contact. Use in a well-ventilated area only.
Personal Protective Equipment	<ul style="list-style-type: none">Wear face shield or goggles to protect eyes.Wear cotton overalls buttoned to the neck and wrist and a washable hat.Wear elbow-length PVC or nitrile gloves.Wear a mask or respirator, AS/NZS 1715/1716 approved, suitable for organic vapours if inhalation is likely.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear dark red-brown liquid
Odour:	Slight naphtha
pH:	3.0 to 5.0 (1% emulsion)
Vapour pressure:	0.03 kPa (at 38° C) – hydrocarbon solvent
Vapour density:	> 1.00 – solvent
Boiling point:	220 - 290° C (boiling point range of hydrocarbon solvent)
Freezing/melting point:	Not available
Solubility:	Emulsifiable in water
Density:	Approximately 1.05 g/mL at 20° C
Flash Point:	96° C
Flammability (explosive) limits:	LEL: 0.6; UEL: 7.0 Vol. % in air (hydrocarbon solvent)
Auto-ignition temperature:	> 450° C (hydrocarbon solvent)
Partition coefficient (octanol/water):	<i>MCPA</i> : Log P_{ow} = - 0.71 (pH 7, 25° C) <i>Pyrasulfotole</i> : Log P_{ow} = - 1.36 (pH 7, 23° C)

10. STABILITY AND REACTIVITY

Chemical stability	Stable under normal conditions of use.
Conditions to avoid	Avoid sources of ignition and extreme heat.
Incompatible materials	Incompatible with strong oxidising agents, strong acids and bases, peroxides.
Hazardous decomposition products	In a fire, irritant and toxic fumes containing carbon monoxide, hydrogen chloride, chlorine, hydrogen fluoride, nitrogen oxides, sulphur oxides and hydrogen cyanide may be released.
Hazardous reactions	This product is mildly corrosive to steel.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Note: The ester form of MCPA is generally less toxic and irritating to mammals than MCPA (acid form).

Inhalation	Harmful if inhaled. High vapour concentrations may be irritating to the respiratory tract, may cause headaches, dizziness, could be anaesthetic and may have other central nervous system effects.
Skin contact	Will irritate the skin. Repeated exposure may cause skin dryness or cracking.
Eye contact	Risk of serious damage to eyes.
Ingestion	Harmful if swallowed. Possible symptoms: headache, vomiting, dizziness. 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 (female): > 5000 mg/kg
Dermal toxicity	LD ₅₀ rat: > 2000 mg/kg
Inhalation toxicity	LC ₅₀ rat (4 h): > 4345 mg/m ³ air
Skin irritation	Irritating
Eye irritation	Severely irritating
Sensitisation	Not a skin sensitiser (mouse).

Chronic:

MCPA (acid) is not mutagenic, carcinogenic, teratogenic or toxic for reproduction.

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.

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). Frequent or prolonged contact with the hydrocarbon solvent in this product may defat and dry the skin, leading to discomfort and dermatitis.

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12. ECOLOGICAL INFORMATION

Harmful to aquatic organisms. Low toxicity to bees.
DO NOT contaminate streams, rivers or waterways with this material or the used containers.

Ecotoxicity

MCPA ethyl hexyl ester:

Fish toxicity: LC₅₀ (96 h) for rainbow trout *Onchorhynchus mykiss* 3.2 mg/L

Daphnia toxicity: EC₅₀ (48 h) for *Daphnia magna* > 190 mg/L (MCPA)

Algal toxicity: EC₅₀ (72 h) for algae 57 mg/L

Bird toxicity: Acute oral LD₅₀ for bobwhite quail 270 mg/kg (MCPA)

Note: The ester form of MCPA is generally less toxic to birds and mammals than the MCPA (acid form), but the ester form is more toxic to fish.

Pyrasulfotole:

Fish toxicity:

LC₅₀ (96 h) for bluegill sunfish *Lepomis macrochirus* > 100 mg/L

LC₅₀ (96 h) for rainbow trout *Onchorhynchus mykiss* > 100 mg/L

Daphnia toxicity: EC₅₀ (48 h) for *Daphnia magna* > 100 mg/L

Algal toxicity: EC₅₀ (96 h) for *Pseudokirchneriella subcapitata* 29.8 mg/L

Bird toxicity:

LD₅₀ for *bobwhite quail* > 2000 mg/kg feed

Environmental fate, persistence and degradability, mobility

MCPA ethyl hexyl ester is fairly mobile, but rapidly degraded in aerobic soils. It will biodegrade in water and has a low potential for bioaccumulation.

Pyrasulfotole is relatively stable to hydrolysis and photolytic conditions. It is not readily biodegradable. Pyrasulfotole is primarily degraded by microbial processes under aerobic conditions. DT_{50S} established to date in field dissipation studies are 4-31 days. There is some movement of residues in the soil profile.

The hydrocarbon solvent is "readily" biodegradable.

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 via a reputable disposal contractor to an approved landfill.

14. TRANSPORT INFORMATION

UN number	Not applicable
Proper shipping name	Not applicable
Class and Subsidiary Risk	Not applicable
Packing Group	Not applicable
EPG	Not applicable
Hazchem code	Not applicable
Marine Pollutant	No

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15. REGULATORY INFORMATION

Not registered according to the Agricultural and Veterinary Chemicals Act 1988.
Australian Pesticides and Veterinary Medicines Authority approval number: None

See also Section 2.

16. OTHER INFORMATION

Trademark information Precept® is a Registered Trademark of Bayer.

Preparation information Replaces March 2, 2006 MSDS. Reasons for revision: Hazards from combustion products, Exposure Standards, Partition co-efficient, Chronic toxicity, Ecological Information, not a Marine Pollutant.

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.

WARNING

This pesticide sample is an experimental compound/formulation which has not been fully evaluated by the Australian Pesticides and Veterinary Medicines Authority. Strictly adhere to all warnings and instructions when using the product.

The sample is to be used only by the person to whom it has been supplied, his employee, or a person under his direct supervision. This Material Safety Data Sheet must be made available to the person(s) responsible for the storage, handling and/or use of the sample. Under no circumstances should the sample or part thereof, be provided, or made available, to a third party without the written consent of Bayer CropScience Pty Ltd.

END OF MSDS