

# MATERIAL SAFETY DATA SHEET



Date of Issue: August 26<sup>th</sup> 2010

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product name** Saturn<sup>®</sup> EC Rice Herbicide

**Other names** None

**Product codes and pack sizes** 4210831 (20 L), 4209337 (100 L), 4210858 (1000 L)

**Chemical group** Thiocarbamate

**Recommended use** Agricultural herbicide

**Formulation** Emulsifiable concentrate (EC)

**Supplier** Bayer CropScience Pty Ltd ABN 87 000 226 022

**Address** 391 - 393 Toorong 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) – DANGEROUS GOOD**  
**Combustible liquid. Very toxic to aquatic organisms.**

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

**Risk phrases** R22 – Harmful if swallowed.  
R36/38 – Irritating to eyes and skin.  
R65 – Harmful: May cause lung damage if swallowed.

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

**ADG classification** See Section 14.

**SUSDP classification (Poison Schedule)** Schedule 5 (Standard for the Uniform Scheduling of Drugs and Poisons)

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Concentration (g/L)
Thiobencarb	[28249-77-6]	800
Aromatic hydrocarbon solvent	[64742-94-5]	180
Naphthalene (in hydrocarbon solvent)	[91-20-3]	(< 18)
Other ingredients, including emulsifiers	Non-hazardous	120

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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.**

<b>Inhalation</b>	If inhaled, remove to fresh air and keep at rest. Obtain medical advice. Support respiration if necessary.
<b>Skin contact</b>	Carefully remove contaminated clothing at once. Wash affected areas with soap and water and rinse well. Seek medical aid if symptoms persist.
<b>Eye contact</b>	Hold eyes open and flood with water for at least 15 minutes and obtain medical aid, preferably from an ophthalmologist.
<b>Ingestion</b>	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.
<b>First Aid facilities</b>	Provide eyewash and safety shower facilities in the workplace.
<b>Medical attention</b>	Although this product is a carbamate, it is NOT a cholinesterase inhibitor. <i>Symptoms of poisoning:</i> In animal studies very large doses of thiobencarb caused hypoactivity, abnormal walking and prostration. <i>Treatment:</i> For local contamination, treatment should be symptomatic after decontamination. For systemic poisoning, treatment should be symptomatic and supportive.  This product also contains a hydrocarbon solvent. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause bronchopneumonia or pulmonary oedema.

## 5. FIRE FIGHTING MEASURES

<b>Extinguishing media</b>	Dry chemical, foam, carbon dioxide, sand.
<b>Hazards from combustion products</b>	If burnt, oxides of carbon, nitrogen and sulphur may be produced.
<b>Precautions for fire fighters</b>	Combustible liquid. 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 extinguishing agent and spillage safely later.
<b>Hazchem code</b>	3Z

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## 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.

## 7. HANDLING AND STORAGE

<b>Handling</b>	Keep out of reach of children. Product is harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. Do NOT inhale spray mist. If clothing becomes contaminated with product or wet with spray, remove clothing immediately. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with 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 and contaminated clothing. Do not smoke while handling and keep product away from any ignition sources.
<b>Storage</b>	Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Do not store near heat, open flame or hot surfaces.
<b>Flammability</b>	Combustible liquid, Class C1 – flashpoint between 61° C and 150° C.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Exposure standards</b>	The manufacturer of the solvent recommends an Occupational Exposure Limit for solvent naphtha (petroleum), heavy aromatic: TWA: 100 mg/m <sup>3</sup> (17 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> ). Skin notation.
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### 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.

*Skin notation* – Absorption through the skin may be a significant source of exposure.

<b>Biological limit values</b>	None allocated
<b>Engineering controls</b>	Control process conditions to avoid contact. Use local exhaust ventilation during manufacturing operations. Use in a well-ventilated area only.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION - continued

- |                                      |   |
|--------------------------------------|---|
| <b>Personal Protective Equipment</b> | <ul style="list-style-type: none"><li>▪ Face-shield.</li><li>▪ Cotton overalls buttoned to the neck and wrist and a washable hat.</li><li>▪ Elbow-length PVC gloves.</li><li>▪ If inhalation exposure is likely to exceed the exposure levels above, an AS/NZS 1715/1716 approved respirator suitable for organic vapours should be worn.</li></ul> |
|--------------------------------------|---|

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Clear amber liquid
<b>Odour:</b>	Aromatic hydrocarbon
<b>pH:</b>	6.5 to 9.0 (1% emulsion in water)
<b>Vapour pressure:</b>	2.93 mPa at 23° C (thiobencarb)
<b>Vapour density:</b>	Not available
<b>Boiling point:</b>	Not available
<b>Freezing/melting point:</b>	Not available
<b>Solubility:</b>	Emulsifies in water
<b>Density:</b>	1.10 g/mL at 20° C
<b>Flash Point:</b>	> 65° C – Pensky Martens Closed Cup
<b>Flammability (explosive) limits:</b>	LEL: 0.6; UEL: 7.0 Vol. % in air (hydrocarbon solvent)
<b>Auto-ignition temperature:</b>	> 400° C (hydrocarbon solvent)
<b>Partition coefficient (octanol/water):</b>	<i>Thiobencarb</i> : Log $P_{ow}$ = 4.23 at pH 7.4 and 20° C

## 10. STABILITY AND REACTIVITY

<b>Chemical stability</b>	Stable under normal conditions of use.
<b>Conditions to avoid</b>	Avoid sources of ignition and extreme heat.
<b>Incompatible materials</b>	Oxidising agents, strong acids, strong bases.
<b>Hazardous decomposition products</b>	If burnt, oxides of carbon, nitrogen and sulphur may be produced.
<b>Hazardous reactions</b>	None known

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## 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

<b>Inhalation</b>	Product is expected to have low toxicity by the inhalation route. However, 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.
<b>Skin contact</b>	Will irritate the skin. The product has low dermal toxicity.
<b>Eye contact</b>	Will irritate the eyes.
<b>Ingestion</b>	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 – SIMILAR PRODUCT

#### **Acute:**

<b>Oral toxicity</b>	LD <sub>50</sub> rat: > 1414 mg/kg (male) LD <sub>50</sub> rat: 1231 mg/kg (female)
<b>Dermal toxicity</b>	LD <sub>50</sub> rat: > 2000 mg/kg
<b>Inhalation toxicity</b>	Inhalation LC <sub>50</sub> rat: 5.7 mg/L (male) (4 h) Inhalation LC <sub>50</sub> rat: 5.2 mg/L (female) (4 h)
<b>Skin irritation</b>	Mildly to moderately irritating (rabbit)
<b>Eye irritation</b>	Moderately irritating (rabbit)
<b>Sensitisation</b>	Not sensitising (guinea pig)

#### **Chronic:**

Thiobencarb is non-mutagenic, non-teratogenic and non-oncogenic.

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

This product contains naphthalene (in the hydrocarbon solvent). 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).

## 12. ECOLOGICAL INFORMATION

Very toxic to aquatic organisms. Low toxicity to birds and bees.

DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

DO NOT drain rice water into regional drains within the withholding period after Saturn application as defined by the NSW Environment Protection Authority (EPA) or the local irrigation authority – refer to product label.

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## 12. ECOLOGICAL INFORMATION - continued

### Ecotoxicity

#### Thiobencarb:

*Fish toxicity:* LC<sub>50</sub> (96 h) rainbow trout 1.1 mg/L

LC<sub>50</sub> (96 h) carp 0.98 mg/L

*Daphnia toxicity:* LC<sub>50</sub> (48 h) water flea (*Daphnia magna*) 1.1 mg/L

*Algal toxicity:* E<sub>b</sub>C<sub>50</sub> (72 h) algae (*Pseudokirchneriella subcapitata*) 0.038 mg/L

*Bird toxicity:* Acute oral LD<sub>50</sub> bobwhite quail > 7800 mg/kg

Acute oral LD<sub>50</sub> mallard ducks > 10000 mg/kg

Acute oral LD<sub>50</sub> hens 2629 mg/kg

### Environmental fate, persistence and degradability, mobility

Thiobencarb is rapidly adsorbed by soil, and not readily leached. Degradation is primarily by microbial breakdown, with little loss from volatilisation and photodegradation. Half-life in soil varies from 2-3 weeks under aerobic conditions to 6-8 months under anaerobic conditions. K<sub>oc</sub> is 3170.

The solvent is expected to degrade at a moderate rate and be "inherently" biodegradable.

## 13. DISPOSAL CONSIDERATIONS

### 20 L

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.

### 100 L

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

If tamper evident seals are broken prior to initial use then the integrity of the contents cannot be assured. The container must be vented before discharging contents. To empty connect a camlock fitted hose to the bottom valve. Remove top cap when discharging for venting purposes. When the container is empty, close all caps and valves and return the container to the point of purchase.

Dispose of waste product via a reputable disposal contractor to an approved landfill.

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## 14. TRANSPORT INFORMATION

<b>UN number</b>	UN 3082
<b>Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (contains thiobencarb)
<b>Class and Subsidiary Risk</b>	Class 9
<b>Packing Group</b>	Packing Group III
<b>Hazchem code</b>	•3Z
<b>Marine Pollutant</b>	Yes
<b>Note for Road and Rail Transport</b>	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 Code Act 1994.  
Australian Pesticides and Veterinary Medicines Authority approval number: 41729  
See also Section 2.

## 16. OTHER INFORMATION

**Trademark information** Saturn® is a Registered Trademark of Kumiai Chemical Industry Co. Ltd., Japan.

**Preparation information** Replaces November 27<sup>th</sup> 2009 edition.  
Reasons for revision: Hazard identification, Fire fighting measures.

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