

MATERIAL SAFETY DATA SHEET

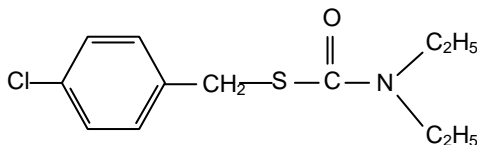
Introductory Details

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Date of preparation : 27 April 2004
Date revised : 12 June 2008

SECTION 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Details

Product Name : Thiobencarb 50% EC
Trade Name : SATURN 50 EC
Chemical Name : S-4-chlorobenzyl diethylthiocarbamate
Chemical Formula : $C_{12}H_{16}ClNOS$
Molar Mass : 257.5
Chemical Family : Thiocarbamate
Manufacturer's Code : -
Use : Herbicide
Structural Formula :



Thiobencarb

1.2 Company Identification

Manufacturer

Name and Address : Agricultural Chemicals (M) Sdn. Bhd.
962, Lorong Perusahaan 8, Taman Perindustrian Perai,
13600 Perai, Pulau Pinang, Malaysia.
Telephone Number : 604-390 7988
Emergency Telephone Number : 604-390 7988

1.3 Contact Point

Designation : Ms. Cheong Wai Ching, Product Support Manager /
En. Ahmad Labib bin Yusof, Administrative Assistant
Tel. No. : 604-390 7988

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SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENT

Chemical Name	CAS No.	Proportion	Exposure Limit	Toxicity Data
S-4-chlorobenzyl diethylthiocarbamate	28249-77-6	50%	Refer to Section 9	Refer to Section 11
Surfactant	-	< 15%		
Solvent	-	Balance		

SECTION 3 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Yellowish brown liquid
Odour	: Pungent odour
Solubility	: Miscible with water
Boiling Point (Pure thiobencarb)	: 126 - 129°C at 0.008 mmHg
Melting Point (Pure thiobencarb)	: 3.3°C
Vapour Pressure (Pure thiobencarb)	: Approx. 2.2×10^{-5} mmHg at 23°C
Percentage Volatiles	: No data available
Evaporation Rate	: No data available
Vapour Density	: No data available
Specific Gravity	: No data available
Flash Point	: 35°C
Autoignition temperature	: No data available
Flammable Limit (%)	: No data available
Flammability (Technical)	: 205°C

SECTION 4 : HAZARD IDENTIFICATION

Flammable.

Harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes, respiratory system and skin.

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SECTION 5 : FIRST AID MEASURES

- Ingestion : Induce vomiting. Get medical attention. General medical treatment for chemical toxication should be followed. Never give fluids or induce vomiting if patient is unconscious or having convulsions.
- Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, get medical attention.
- Skin contact : Wash affected skin with plenty of water and soap.
- Inhalation : Remove to fresh air. Get medical attention.
- Notes to physician :
- Medical treatment : The active ingredient in this product is a cholinesterase inhibitor. Inject atropine sulphate 2 - 4 mg subcutaneously or intravenously; repeat every 30 minutes until patient is fully atropinised.

SECTION 6 : FIRE FIGHTING MEASURES

- Extinguishing Media : Foam, CO₂, dry chemical.
- Fire fighting instruction : Fire fighters should wear full-faced self-contained breathing apparatus and protective clothing.
- Special hazards : No data available

SECTION 7 : ACCIDENTAL RELEASE MEASURE

Leak and/or Spill :

Wear protective clothing. Eliminate ignition source. Ventilate area. Absorb spills with inert material such as clay, sand, earth, sawdust etc. and collect in a drum. Cover up the contaminated area with household detergent and small amount of water. Brush the slurry and spread inert absorbents on the slurry liquid and collect the absorbed material in a drum. Seal drum and dispose of. Do not contaminate water resources.

SECTION 8 : HANDLING AND STORAGE

- Handling : Wear pesticide respiratory masks and protective gloves while handling. Read the label before use. Avoid breathing vapour. Avoid contact with skin, eyes or clothing. Do not contaminate water supplies. Provide washing facilities and eye fountain in work area.
- Storage : Keep in original containers, tightly closed, in a cool, dry and well-ventilated place. Do not store with animal feeds or foodstuff. Keep out of reach of children or farm animals. Keep away from heat and open flame.

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SECTION 9 : EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limit : (Technical) ACGIH TLV (1992/93) – No data available
Engineering measures : Local exhaust ventilation
Personal protection : Wear pesticide respiratory masks and protective gloves.

SECTION 10 : STABILITY AND REACTIVITY

Conditions to avoid : High humidity, direct sunlight, heat and extreme temperature.
Incompatible : Strong acid and alkaline.
Decomposition Products : May produce CO and CO₂.
Hazardous polymerization : No data available
Stability : Stable for 2 years if stored at cool, dark and dry place.

SECTION 11 : TOXICOLOGICAL INFORMATION (TECHNICAL)

Toxicity data :

Acute Oral LD ₅₀	: (Rat) male	1,033mg/kg
	(Rat) female	1,130mg/kg
	(Mouse) male	1,102mg/kg
	(Mouse) female	1,402mg/kg
Acute Dermal LD ₅₀	: (Rat/mice)	> 2,000mg/kg
Acute Inhalation LC ₅₀	: (Rat)	> 42.8mg/kg
Subchronic toxicity	: NOEL (Rat) male	2.5mg/kg/day
	NOEL (Rat) female	2.8mg/kg/day
Mutagenicity	: Negative (Ames test / Chromosome aberration test)	
Carcinogenicity	: No data available	
Reproductive effect	: No data available	

Effects of overexposure:

Eye Irritation	: (Rabbit)	No irritation (10 mg/eye)
Skin Irritation	: (Rabbit)	No irritation (1,000 mg/9cm ²)
Sensitizing Effect	: No data available. However, Kumiai formulated products containing thiobencarb have no sensitizing potential.	

Kumiai Chemical has never faced poisoning problem attributed to thiobencarb on laboratory researchers, factory workers and users, however, over-exposure experiments on animals showed that administration of an extra-ordinary large quantity of thiobencarb may cause hypoactivity, abnormal walking and prostration.

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Safety Phrases : S2 Keep out of reach of children.
S13 Keep away from food, drink and animal feeding stuff.
S16 Keep away from sources of ignition - No smoking
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

SECTION 16 : OTHER INFORMATION

Reference : (a) Material Safety Data Sheet - Saturn 50 EC
Date : 7-8-1997

(b) Material Safety Data Sheet - Saturn Technical
Date : 26 February 2008

(c) Guidelines for The Classification of Hazardous Chemicals, DOSH 1997

(d) Guidelines for The Formulation of A Chemical Safety Data Sheet, DOSH 1997

(e) Guidelines for Labelling of Hazardous Chemicals, DOSH 1997

To the best of our knowledge, the information contained herein is accurate. However, we cannot assume any liability whatsoever for the accuracy or completeness of the information contained herein.