

MATERIAL SAFETY DATA SHEET

K-Obiol® Combi Synergised Grain Protectant

Date of Issue: September 28th, 2006

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

Product name: K-Obiol® Combi Synergised Grain Protectant
Other names: None
Product code: 6397433 (10 L)
Chemical group: Pyrethroid
Recommended use: A synergised insecticide liquid concentrate for application as a stored grain protectant
Formulation: Suspension concentrate (SC)
Supplier: Bayer Environmental Science – A Business Group of 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: Technical Manager (03) 9248 6888
Emergency Telephone Number: 1800 033 111 – Orica SH&E Shared Services

2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE - NON-DANGEROUS GOOD

Harmful by inhalation and if swallowed. May cause sensitisation by skin contact. Not flammable.

Hazard designation: Hazardous (National Occupational Health and Safety Commission - NOHSC)
Risk phrases: R20/22 – Harmful by inhalation and if swallowed
R43 – May cause sensitisation by skin contact
Safety phrases: Not applicable
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. For transport by sea, K-Obiol Synergised Grain Protectant is a MARINE POLLUTANT. See Section 14.
SUSDP classification: Schedule 6 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Concentration (g/L):
Deltamethrin	[52918-63-5]	50
Piperonyl butoxide	[51-03-6]	400
Propylene glycol	[57-55-6]	10
Mixed isothiazolones, sodium or magnesium salts	[55965-84-9]	2
Other ingredients	(Non-hazardous)	600

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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 a doctor.

- Inhalation:** If inhaled, remove to fresh air and keep at rest. Loosen clothes. Obtain medical advice if at all worried. Restore and/or support breathing as required. If breathing stops or shows signs of failing, start artificial respiration.
- Skin contact:** Carefully remove contaminated clothing and footwear. Wash affected areas with soap and water. Apply vitamin E cream, toilet milks or local anaesthetic creams to reduce pain. Seek medical advice if at all worried. Launder contaminated clothing before re-use.
- Eye contact:** Rinse immediately with plenty of water for at least 15 minutes, holding eye open. Seek advice from an ophthalmologist.
- Ingestion:** Wash out mouth with water. Do not induce vomiting. Keep patient at rest and seek medical advice as above. Do not apply mouth to mouth resuscitation if the material has been ingested.
- First Aid Facilities:** Provide washing facilities in the workplace.
- Symptoms:** Burning sensations on the skin, irritation of the mucous membranes, coughing and sneezing may be experienced. Following severe intoxication, respiratory effects can include chest tightness, airway hyperreaction, and pulmonary oedema. Possible circulatory effects include tachycardia, hypotension, and palpitations. Gastrointestinal symptoms may include nausea, vomiting, diarrhoea, abdominal pain, and salivation. Potential Central Nervous System effects are dizziness, blurred vision, headache, listlessness, anorexia, somnolence/coma, seizures/convulsions, tremor, ataxia, and muscle fasciculations.
- Medical attention:** Treatment
Basic aid, decontamination, symptomatic treatment and if necessary administration of antidote.
- Note for physicians
Treat large intakes with gastric lavage, and charcoal administration. Use endotracheal intubation, and artificial respiration (if necessary). Monitor respiratory and cardiac functions. Observe electrocardiograph, and check for pulmonary oedema in event of inhalation. Anticonvulsant therapy with diazepam i.v. No antidote known. Treat symptoms. Recovery should be spontaneous. Elimination by: dialysis, haemo-perfusion. Contraindication – adrenergic compounds, atropine. DO NOT confuse with anticholinesterase compounds. Skin contacted by deltamethrin must be carefully cleaned with cleansing milk. Symptoms can be partially alleviated by the application of a vitamin E or moisturising cream or anaesthetic ointment. For eyes, instil local anaesthetic drops e.g. 1% amethocaine hydrochloride eye drops. Give analgesics as necessary.

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5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray, carbon dioxide, foam, dry chemical. Do not use a water jet from a fire hose.

Hazards from combustion products: In the event of fire, hydrogen cyanide, hydrogen bromide, and oxides of nitrogen and carbon may be produced.

Precautions for fire fighters: Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1716), as toxic and irritating decomposition products may be produced in a fire. If it can be done safely, remove intact containers from the fire. Otherwise, use water spray to cool them. Bund area to prevent contamination of water sources. Dispose of fire control extinguishing agent and spillage later in a safe manner. Do not release contaminated water into the environment.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled material or contaminated surfaces. When dealing with the spillage do not eat, drink or smoke and wear personal protective clothing and equipment as detailed in 'Personal Protection' section. Keep people and animals away. Prevent spillage from entering drains, sewers or watercourses. Contain/absorb spillage in sand/earth or other suitable inert material. Transfer collected material to sealable containers. Seal and label containers ready for 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. Avoid contact with eyes and skin.

Storage: Store in original container in a cool, dry, well-ventilated area. Keep away from food, drink and animal feeds. Keep out of direct sunlight and avoid frosts.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards: No exposure standard has been assigned by the National Occupational Health and Safety Commission (Worksafe Australia). Bayer CropScience recommends an Occupational Exposure Standard for deltamethrin of 0.28 mg/m³.

Engineering controls: No special ventilation is required, as this product is not volatile. Control process conditions to avoid contact. Use local exhaust ventilation while spraying, if possible.

Personal Protective Equipment:

Eyes:	Avoid contact with eyes. Wear chemical goggles if exposure to the concentrate is likely.
Clothing:	Full-length cotton overalls buttoned to the neck and wrist, neoprene or PVC footwear, and a washable hat.
Gloves:	Elbow-length PVC or nitrile gloves
Respiratory:	Disposable mist mask. Wear a full facepiece respirator during spraying of K-Obiol Combi Synergised Grain Protectant.
Other:	Do not eat, drink or smoke until after washing. Wash thoroughly after handling. After each day's use wash gloves, goggles and contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White, viscous liquid.
Odour:	Mild odour
Vapour pressure:	As water
Vapour density:	Not available
Boiling point:	Not determined
Freezing/melting point:	Not available
Solubility:	Mixes with water forming a suspension and emulsion
Density:	1.06 at 20°C
pH:	4.0 – 6.0
Flash Point:	>170 °C (Closed Cup)
Flammability (explosive) limits:	Not applicable
Auto-ignition temperature:	Not available
Percent volatiles:	Negligible
Octanol/water partition coefficient:	<i>Deltamethrin</i> : $K_{ow} \log P = 4.6$ (25° C)
Formulation:	Suspo-emulsion

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10. STABILITY AND REACTIVITY

Chemical stability:	Stable under normal conditions of use.
Hazardous polymerisation:	Not available
Conditions to avoid:	Not available
Incompatible materials:	Avoid oxidising agents, strong acids and alkalis.
Hazardous decomposition products:	In the event of fire, hydrogen cyanide, hydrogen bromide, and oxides of nitrogen and carbon may be produced.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation:	Inhalation of spray may cause transient irritation of mucous membranes (nose, throat and respiratory tract) for up to 24 hours.
Skin contact:	Irritating. Contact with the skin, especially the face, may result in initial stinging or burning sensations followed by numbing which may persist for a few hours. (Although skin irritation tests in animals show deltamethrin to be non-irritating, experience has shown it to cause these symptoms on human skin.)
Eye contact:	Will irritate the eyes.
Ingestion:	Product is harmful if swallowed. Symptoms include burning sensations in the mouth, headache, dizziness, drowsiness, diarrhoea, nausea, vomiting, listlessness, stomach pain, muscular twitching or arms or legs, unconsciousness, convulsions and coma (very high doses).
Other:	None

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ANIMAL TOXICITY DATA – PRODUCT: No data available for the product.

ANIMAL TOXICITY DATA – INDIVIDUAL INGREDIENTS:

Acute:

Oral toxicity:	LD ₅₀ rat: 135 to >5000 mg/kg (deltamethrin) LD ₅₀ rat: 7500 mg/kg (piperonyl butoxide)
Dermal toxicity:	LD ₅₀ rabbit: > 2,000 mg/kg (deltamethrin) LD ₅₀ rat: > 7950 mg/kg (piperonyl butoxide)
Inhalation toxicity:	LC ₅₀ rat: 2.2 mg/L (4 hours) (deltamethrin) LC ₅₀ rat: > 5.9 mg/L (4-hour) (piperonyl butoxide)
Skin irritation:	Not irritating – rabbit (deltamethrin)
Eye irritation:	Slightly irritating – rabbit (deltamethrin)
Sensitisation:	Not sensitising – Guinea pig (deltamethrin)

Chronic:

Deltamethrin is not mutagenic, carcinogenic or teratogenic. Marginally higher incidences of benign liver tumours were observed following lifetime high exposure to piperonyl butoxide. The significance of this observation is questionable and under review. The doses at which tumours were observed greatly exceed potential human exposure from proposed labelled uses of this product. Piperonyl butoxide is not classified as a carcinogen. Piperonyl butoxide is not mutagenic and is not considered to be teratogenic.

12. ECOLOGICAL INFORMATION

Do not allow product to enter drains, streams, rivers or waterways. Deltamethrin is highly toxic to fish, aquatic organisms and bees in laboratory studies, but considered less toxic under natural conditions.

Fish toxicity:	LC ₅₀ fish: 0.001 – 0.01 mg/L (96-h) Deltamethrin LC ₅₀ carp: 5.3 mg/L (24 hour) Piperonyl butoxide
Daphnia toxicity:	LC ₅₀ (48h) 3.5 µg/L (deltamethrin) LC ₅₀ (24h) 2.95 mg/L (piperonyl butoxide)
Toxicity to algae:	EC ₅₀ (96h) > 9.1 mg/L (deltamethrin) EC ₅₀ 44 µmol/L (piperonyl butoxide)
Bird toxicity:	LD ₅₀ duck: > 5,000 mg/kg Deltamethrin LD ₅₀ quail: > 10,000 mg/kg Deltamethrin LD ₅₀ bobwhite quail: >2250 mg/kg Piperonyl butoxide
Bee toxicity:	Deltamethrin is toxic to bees; LD ₅₀ (oral) 79 ng/bee; (contact) 51 ng/bee Piperonyl butoxide is not toxic to bees; LD ₅₀ > 25 µg/bee
Environmental fate, persistence and degradation:	Deltamethrin does not leach in soil. DT ₅₀ (field) <23 days. Piperonyl butoxide is rapidly metabolised under outdoor conditions.

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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 the purpose, clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt. Dispose of waste product safely.

14. TRANSPORT INFORMATION

UN number:	Not applicable (road/rail)
Proper shipping name:	Not applicable (road/rail)
Class and Subsidiary Risk:	Not applicable (road/rail)
Packing Group:	Not applicable (road/rail)
EPG:	Not applicable (road/rail)
Hazchem code:	Not applicable (road/rail)
Marine pollutant:	Yes – If this product is shipped by sea it is a Class 9 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (contains deltamethrin, piperonyl butoxide), UN 3082, Packing Group III.

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988

Australian Pesticides and Veterinary Medicines Authority Approval Number: 58393

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16. OTHER INFORMATION

Trademark information: K-Obiol® is a Registered Trademark of Bayer.

Preparation information: Replaces August 31st, 2006 edition.

information: Reason for update: Formulation composition, Risk phrases, ADG classification, First aid measures, Firefighting measures, Toxicological information, Ecological information, Marine pollutant status, Transport information.

Data sources: Bayer CropScience Pty Ltd product safety data and published data

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