

**K-OBIOL EC 25**Version 2 / GB
102000002608

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Revision Date: 03.10.2008

Print Date: 14.10.2008

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product information**

Trade name K-OBIOL EC 25
Product code (UVP) 05939488
Usage Insecticide
Company Bayer Environmental Science
230 Cambridge Science Park
Milton Road
Cambridge
Cambridgeshire CB4 0WB
Great Britain

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2. HAZARDS IDENTIFICATION**Risk advice to man and the environment**

Flammable.
Harmful by inhalation and if swallowed.
Irritating to respiratory system.
Risk of serious damage to eyes.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Harmful: may cause lung damage if swallowed.
Repeated exposure may cause skin dryness or cracking.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Chemical nature**

Emulsifiable concentrate (EC)
Deltamethrin/Piperonyl butoxide 25:225 g/l

Hazardous components

Chemical Name	CAS-No. / EINECS-No.	Symbol(s)	R-phrases(s)	Concentration [%]
Deltamethrin	52918-63-5 258-256-6	T, N	R23/25, R50/53	2.70
Piperonyl butoxide	51-03-6 200-076-7	N	R50/53	23.90
Tetrapropylene benzene sulfonate, calcium salt	11117-11-6 234-360-7	Xn	R21, R38, R41, R52/53	> 1.00 - < 25.00
2-Methylpropan-1-ol	78-83-1 201-148-0	Xi	R10, R37/38, R41, R67	> 1.00 - < 5.00
Solvent Naphtha (petroleum),	64742-95-6	Xn, N	R10, R37,	> 25.00

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light aromatic	265-199-0		R51/53, R65, R66, R67	
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For the full text of the R-phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES**General advice**

Remove contaminated clothing immediately and dispose of safely.

Inhalation

Move to fresh air. Keep patient warm and at rest. If symptoms persist, call a physician.

Skin contact

In case of skin contact, immediately wash with plenty of water and soap for at least 15 minutes. In case of skin irritation, application of oils or lotions containing vitamin E may be considered. If symptoms persist, call a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

Ingestion

Rinse out mouth and give water in small sips to drink. Do NOT induce vomiting. Risk of product entering the lungs on vomiting after ingestion. If swallowed, seek medical advice immediately and show this container or label.

Notes to Physician**Symptoms**

Local:, Skin and eye paraesthesia which may be severe, Usually transient with resolution within 24 hours., Eye and mucous membrane irritation, Cough

Symptoms

Systemic:, Discomfort in the chest, Tachycardia, Hypotension, Nausea, Abdominal pain, Diarrhoea, Vomiting, Dizziness, Blurred vision, Headache, Anorexia, Somnolence, Coma, Convulsions, Tremors, Prostration

Risks

This product contains a pyrethroid.
Must NOT be confused with organophosphorus compounds!

Treatment

Local treatment:
Initial treatment: symptomatic.



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Treatment

Systemic treatment:

Initial treatment: symptomatic.

Monitoring of respiratory and cardiac functions.

Gastric lavage should be considered in cases of significant ingestions within the first 2 hours.

However, the application of activated charcoal and sodium sulphate is always advisable.

Keep respiratory tract clear.

Give oxygen or artificial respiration if needed.

In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens.

If not effective, phenobarbital may be used.

Contraindication: atropine.

Contraindication: derivatives of adrenaline.

There is no specific antidote.

Recovery is spontaneous and without sequelae.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media which should not be used for safety reasons

High volume water jet

Specific hazards during fire fighting

Dangerous gases are evolved in the event of a fire.

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat.

Whenever possible, contain fire-fighting water by diking area with sand or earth.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Keep people away from and upwind of spill/leak.

Avoid contact with spilled product or contaminated surfaces.

When dealing with a spillage do not eat, drink or smoke.

Environmental Precautions

Do not allow to get into surface water, drains and ground water.

If spillage enters drains leading to sewage works inform local water company immediately.

If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

Methods for Cleaning Up

Keep in suitable, closed containers for disposal.

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder).

Clean floors and contaminated objects with plenty of water.

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Additional Advice

Information regarding safe handling, see section 7.
 Information regarding personal protective equipment, see section 8.
 Information regarding waste disposal, see section 13.
 Check also for any local site procedures.

7. HANDLING AND STORAGE**Handling**

Advice on safe handling

No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice.

Use only in area provided with appropriate exhaust ventilation.

Advice on protection against fire and explosion

Keep away from heat and sources of ignition.

Vapours may form explosive mixture with air.

Storage

Requirements for storage areas and containers

Store in a place accessible by authorized persons only.

Keep away from direct sunlight.

Keep containers tightly closed in a dry, cool and well-ventilated place.

Advice on common storage

Keep away from food, drink and animal feedingstuffs.

Suitable materials

Fluorinated HDPE (high density polyethylene) container

Metallic drum lined inside with polyethylene

Coextruded containers with an internal barrier layer made of ethylene vinyl alcohol copolymer (EVOH)

Coextruded containers with an internal barrier layer made of polyamide (PA)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Refer to COSHH assessment (Control of Substances Hazardous to Health (Amendment) Regulations 2004). Engineering controls should be used in preference to personal protective equipment wherever practicable. Refer also to COSHH Essentials.

Components with workplace control parameters

Components	CAS-No.	Control parameters	Update	Basis
Deltamethrin	52918-63-5	0.02 mg/m ³		OES BCS*
Piperonyl butoxide	51-03-6	500 ppm		OES BCS*
2-Methylpropan-1-ol	78-83-1	154 mg/m ³ / 50 ppm (TWA)	2007	EH40 WEL
2-Methylpropan-1-ol	78-83-1	231 mg/m ³ / 75 ppm (STEL)	2007	EH40 WEL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Additional Advice

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Observe: Exposure Limits In Air, Group 3: 100 mg/m³/ 20 ppm. (aromatic-rich hydrocarbon mixes with > 25% aromatics TRGS 901, No. 72).

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory Protection	Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.
Hand Protection	Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness 0,40 mm). Wash when contaminated. Dispose of when contaminated inside, when perforated or when contamination outside cannot be removed. Wash hands always before eating, drinking, smoking or using the toilet.
Eye protection	Wear goggles conforming to EN166 (Field of Use 5 or equivalent).
Skin and body protection	Wear standard coverall and type 6 suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently. If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

Hygiene measures

When using, do not eat, drink or smoke.

Remove soiled clothing immediately and clean thoroughly before using again.

Wash hands immediately after work, if necessary take a shower.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	liquid, clear
Colour	yellow

Safety data

pH	3.5 - 7 at 1 % (23 °C)
Flash point	44 °C
Ignition temperature	> 450 °C The data refer to solvent naphtha petroleum.
Upper explosion limit	7.00 %(V) The data refer to solvent naphtha petroleum.

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Lower explosion limit	0.8 %(V) The data refer to solvent naphtha petroleum.
Relative vapour density	1.00 The data refer to solvent naphtha petroleum.
Density	approx. 0.94 g/cm ³ at 20 °C
Water solubility	emulsifiable
Surface tension	27.7 mN/m

10. STABILITY AND REACTIVITY

Conditions to Avoid	Extremes of temperature and direct sunlight.
Hazardous Reactions	No hazardous reactions when stored and handled according to prescribed instructions. Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity	LD50 (rat) 710 mg/kg
Acute Inhalation Toxicity	LC50 (rat) 2.69 mg/l Exposure time: 4 h Irritating to respiratory system. When inhaled in high concentration, the solvent vapours cause a narcotic effect. Test conducted with a similar formulation.
Acute Dermal Toxicity	LD50 (rat) > 2,000 mg/kg
Skin Irritation	No skin irritation. (rabbit)
Eye Irritation	Severe eye irritation. (rabbit)
Further information	Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

12. ECOLOGICAL INFORMATION**Elimination information (persistence and degradability)**

Bioaccumulation	Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 1,400 The value mentioned relates to the active ingredient deltamethrin.
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Bioaccumulation	Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 260 The value mentioned relates to the active ingredient piperonyl butoxide.
Ecotoxicity effects	
Toxicity to Fish	LC50 (Rainbow trout (<i>Oncorhynchus mykiss</i>)) 0.00091 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient deltamethrin.
Toxicity to Fish	(<i>Cyprinodon variegatus</i> (sheepshead minnow)) 3.94 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient piperonyl butoxide.
Toxicity to daphnia	EC50 (Water flea (<i>Daphnia magna</i>)) 0.00056 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient deltamethrin.
Toxicity to daphnia	EC50 (Water flea (<i>Daphnia magna</i>)) 0.51 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient piperonyl butoxide.
Toxicity to algae	EC50 (Algae) > 9.1 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient deltamethrin.

13. DISPOSAL CONSIDERATIONS

Product

In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.

Advice may be obtained from the local waste regulation authority (part of the Environment Agency in the UK).

Contaminated packaging

Small containers (< 10 l or < 10 kg) should be rinsed thoroughly using an integrated pressure rinsing device, or, by manually rinsing three times.

Add washings to sprayer at time of filling.

Dispose of empty and cleaned packaging safely.

Large containers (> 25 l or > 25 kg) should not be rinsed or re-used for any other purpose.

Return large containers to supplier.

Follow advice on product label and/or leaflet.

Waste key for the unused product

020108 agrochemical waste containing dangerous substances

14. TRANSPORT INFORMATION

ADR/RID/ADNR



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UN-Number	1993
Labels	3
Packaging group	III
Hazard no.	30
Description of the goods	FLAMMABLE LIQUID, N.O.S. (DELTAMETHRIN, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)
Special Provision	640E

IMDG

UN-Number	1993
Labels	3
Packaging group	III
EmS	F-E , S-E
Marine pollutant	Marine pollutant
Description of the goods	FLAMMABLE LIQUID, N.O.S. (DELTAMETHRIN, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)

IATA

UN-Number	1993
Labels	3
Packaging group	III
Description of the goods	FLAMMABLE LIQUID, N.O.S. (DELTAMETHRIN, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)

UK 'Carriage' Regulations

UN-Number	1993
Labels	3
Packaging group	III
Hazard no.	30
Emergency action code	3Y
Description of the goods	FLAMMABLE LIQUID, N.O.S. (DELTAMETHRIN, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)

15. REGULATORY INFORMATION

This product has been classified in accordance with The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002: CHIP 3 and any subsequent amendments.

Classification:

Hazard warning labelling compulsory

Hazardous components which must be listed on the label:

- Deltamethrin
- Piperonyl butoxide
- Solvent Naphtha (petroleum), light aromatic

Symbol(s)

Xn	Harmful
N	Dangerous for the environment



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R-phrase(s)	
R10	Flammable.
R20/22	Harmful by inhalation and if swallowed.
R37	Irritating to respiratory system.
R41	Risk of serious damage to eyes.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
S-phrase(s)	
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S35	This material and its container must be disposed of in a safe way.
S39	Wear eye/face protection.
S57	Use appropriate container to avoid environmental contamination.
S62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Exceptional labelling

To avoid risks to man and the environment, comply with the instructions for use.

Further information

WHO-classification: II (Moderately hazardous)

16. OTHER INFORMATION

Further information

Text of R-phrases mentioned in Section 3

R10	Flammable.
R21	Harmful in contact with skin.
R23/25	Toxic by inhalation and if swallowed.
R37	Irritating to respiratory system.
R37/38	Irritating to respiratory system and skin.
R38	Irritating to skin.
R41	Risk of serious damage to eyes.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

The above information is intended to give general health and safety guidance on the storage and transport of the product.

It is not intended to apply to the use of the product for which purposes the product label and any appropriate technical usage literature available should be consulted and any relevant licenses, consents or approvals complied with.

The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given.



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The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate.

No liability will be accepted for any injury, loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.