



**K-OBIOL, INDIA**

Version 2 / IND  
102000003175

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Revision Date: 02.01.2019  
Print Date: 02.01.2019

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1 Product identifier**

**Trade name** K-OBIOL, INDIA  
**Product code (UVP)** 05946549

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

**Use** Insecticide

**1.3 Details of the supplier of the safety data sheet**

**Supplier** Bayer CropScience Limited  
Bayer House, Central Avenue  
Hiranandani Estate  
400607 Thane (W)  
Maharashtra  
India

**Telephone** +91-22-25311826 / 25311234

**Telefax** +91-22-25455116

**1.4 Emergency telephone no.**

**Indian Emergency Number** 022-25311885 (24 hours/day)

**Global Incident Response Hotline (24h)** +1 (760) 476-3964 (Company 3E for Bayer AG, Crop Science Division)

**SECTION 2: HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.**

Acute aquatic toxicity: Category 1  
H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1  
H410 Very toxic to aquatic life with long lasting effects.

**2.2 Label elements**

**Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.**

Hazard label for supply/use required.

**Hazardous components which must be listed on the label:**

- Deltamethrin

# SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006



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**Signal word:** Warning

### Hazard statements

H410 Very toxic to aquatic life with long lasting effects.  
EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

### Precautionary statements

P501 Dispose of contents/container in accordance with local regulation.

### 2.3 Other hazards

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).

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

#### Chemical nature

Wettable powder (WP)  
Deltamethrin 2.5% WP

#### Hazardous components

Hazard statements according to Regulation (EC) No. 1272/2008

Name	CAS-No. / EC-No. / REACH Reg. No.	Classification	Conc. [%]
		REGULATION (EC) No 1272/2008	
Deltamethrin	52918-63-5	Aquatic Acute 1, H400 Acute Tox. 3, H301 Acute Tox. 3, H331 Aquatic Chronic 1, H410	2.50

#### Further information

Deltamethrin	52918-63-5	M-Factor: 1,000,000 (acute), 1,000,000 (chronic)
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For the full text of the H-Statements mentioned in this Section, see Section 16.



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**SECTION 4: FIRST AID MEASURES**

**4.1 Description of first aid measures**

- General advice** When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.  
Remove contaminated clothing immediately and dispose of safely.  
Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.
- Inhalation** Move the victim to fresh air and keep at rest. Call a physician or poison control center immediately.
- Skin contact** Immediately wash with plenty of soap and water for at least 15 minutes. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. 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. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. Apply soothing eye drops, if needed anaesthetic eye drops. Get medical attention if irritation develops and persists.
- Ingestion** Keep at rest. Rinse mouth. Do NOT induce vomiting. Risk of product entering the lungs on vomiting after ingestion. Call a physician or poison control center immediately.

**4.2 Most important symptoms and effects, both acute and delayed**

- Symptoms** Local:, Skin and eye paraesthesia which may be severe, Usually transient with resolution within 24 hours, Skin, eye and mucous membrane irritation, Cough, Sneezing  
Systemic:, discomfort in the chest, tachycardia, Hypotension, Nausea, Abdominal pain, Diarrhoea, Vomiting, Dizziness, Blurred vision, Headache, Anorexia, Somnolence, Coma, Convulsions, Tremors, Prostration, Airway hyperreaction, Pulmonary oedema, Palpitation, Muscular fasciculation, Apathy

**4.3 Indication of any immediate medical attention and special treatment needed**

- Risks** This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.
- Treatment** Local treatment: Initial treatment: symptomatic.

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Systemic treatment: Initial treatment: symptomatic. Monitor: respiratory and cardiac functions. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Keep respiratory tract clear. 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.

**SECTION 5: FIREFIGHTING MEASURES****5.1 Extinguishing media**

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

**Unsuitable** High volume water jet

**Hazchem Code** 2Z

**5.3 Advice for firefighters**

**Special protective equipment for firefighters** In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

**Further information** Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

**Precautions** Avoid dust formation. Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment. Remove all sources of ignition.

**6.2 Environmental precautions** Do not allow to get into surface water, drains and ground water.

**6.3 Methods and materials for containment and cleaning up**

**Methods for cleaning up** Use mechanical handling equipment. Clean contaminated floors and objects thoroughly, observing environmental regulations. Collect and transfer the product into a properly labelled and tightly closed container.

**Additional advice** Check also for any local site procedures.

**6.4 Reference to other sections** Information regarding safe handling, see section 7.  
Information regarding personal protective equipment, see section 8.  
Information regarding waste disposal, see section 13.

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**SECTION 7: HANDLING AND STORAGE****7.1 Precautions for safe handling**

<b>Advice on safe handling</b>	Avoid dust formation. Use only in area provided with appropriate exhaust ventilation.
<b>Advice on protection against fire and explosion</b>	Dust may form explosive mixture in air. Keep away from heat and sources of ignition. Take measures to prevent the build up of electrostatic charge.
<b>Hygiene measures</b>	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

**7.2 Conditions for safe storage, including any incompatibilities**

<b>Requirements for storage areas and containers</b>	Keep out of the reach of children. 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.
<b>Advice on common storage</b>	Keep away from food, drink and animal feedingstuffs.
<b>7.3 Specific end use(s)</b>	Refer to the label and/or leaflet.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters**

Components	CAS-No.	Control parameters	Update	Basis
Deltamethrin	52918-63-5	0.01 mg/m <sup>3</sup> (TWA)		OES BCS*

\*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

**8.2 Exposure controls****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.

<b>Respiratory protection</b>	Wear respirator with a particle filter mask (protection factor 4) conforming to European norm EN149FFP1 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.
<b>Hand protection</b>	Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot

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be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0.4 mm
Directive	Protective gloves complying with EN 374.

<b>Eye protection</b>	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
<b>Skin and body protection</b>	Wear standard coveralls and Category 3 Type 5 suit. If there is a risk of significant exposure, consider a higher protective type 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.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

<b>Form</b>	powder
<b>Colour</b>	white to light beige
<b>Odour</b>	weak, characteristic
<b>pH</b>	3.0 - 5.0 (1 %) (23 °C) (deionized water)
<b>Flammability (solid, gas)</b>	The product is not flammable.
<b>Bulk density</b>	200 - 400 kg/m <sup>3</sup> (loose)
<b>Water solubility</b>	dispersible
<b>Partition coefficient: n-octanol/water</b>	Deltamethrin: log Pow: 6.4 (25 °C)
<b>Oxidizing properties</b>	No oxidizing properties

**9.2 Other information** Further safety related physical-chemical data are not known.

**SECTION 10: STABILITY AND REACTIVITY****10.1 Reactivity**

**Thermal decomposition** Stable under normal conditions.

**10.2 Chemical stability** Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions** No hazardous reactions when stored and handled according to prescribed instructions.



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- 10.4 Conditions to avoid** Extremes of temperature and direct sunlight.
- 10.5 Incompatible materials** Store only in the original container.
- 10.6 Hazardous decomposition products** No decomposition products expected under normal conditions of use.

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**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

- Acute oral toxicity** LD50 (Rat) > 15,000 mg/kg  
Information given is based on data on the components and the toxicology of similar products.
- Acute inhalation toxicity** LC50 (Rat) > 20.0 mg/l
- Acute dermal toxicity** LD50 (Rat) > 4,000 mg/kg
- Skin corrosion/irritation** Slight irritant effect - does not require labelling. (Rabbit)
- Serious eye damage/eye irritation** Slight irritant effect - does not require labelling. (Rabbit)
- Respiratory or skin sensitisation** Skin: Non-sensitizing. (Guinea pig)  
The information is derived from the properties of the individual components.

**Assessment STOT Specific target organ toxicity – single exposure**

Deltamethrin: Based on available data, the classification criteria are not met.

**Assessment STOT Specific target organ toxicity – repeated exposure**

Deltamethrin caused neurobehavioral effects and/or neuropathological changes in animal studies. The toxic effects of Deltamethrin are related to transient hyperactivity typical for pyrethroid neurotoxicity.

**Assessment mutagenicity**

Deltamethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

**Assessment carcinogenicity**

Deltamethrin was not carcinogenic in lifetime feeding studies in rats and mice.

**Assessment toxicity to reproduction**

Deltamethrin did not cause reproductive toxicity in a two-generation study in rats.

**Assessment developmental toxicity**

Deltamethrin caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Deltamethrin are related to maternal toxicity.

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**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).

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**SECTION 12: ECOLOGICAL INFORMATION****12.1 Toxicity**

**Toxicity to fish** LC50 (Oncorhynchus mykiss (rainbow trout)) 0.15 µg/l  
Exposure time: 96 h  
The value mentioned relates to the active ingredient deltamethrin.

**Toxicity to aquatic invertebrates** EC50 (Daphnia magna (Water flea)) 0.0131 µg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient deltamethrin.

**Toxicity to aquatic plants** EC50 (Algae) > 9.1 mg/l  
Exposure time: 96 h  
The value mentioned relates to the active ingredient deltamethrin.

**12.2 Persistence and degradability**

**Biodegradability** Deltamethrin:  
Not rapidly biodegradable

**Koc** Deltamethrin: Koc: 10240000

**12.3 Bioaccumulative potential**

**Bioaccumulation** Deltamethrin: Bioconcentration factor (BCF) 1,400  
Does not bioaccumulate.

**12.4 Mobility in soil**

**Mobility in soil** Moderately mobile in soils

**Mobility in soil** Deltamethrin: Immobile in soil

**12.5 Results of PBT and vPvB assessment**

**PBT and vPvB assessment** Deltamethrin: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

**12.6 Other adverse effects**

**Additional ecological information** No other effects to be mentioned.

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**SECTION 13: DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods**

**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. Do not empty into drains.

**Contaminated packaging** Empty remaining contents.  
Do not re-use empty containers.



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Not completely emptied packagings should be disposed of as hazardous waste.  
Packagings must be taken to a contractor licensed for disposal of hazardous waste.

### Legal basis

**Waste key in accordance with Schedule I of the Hazardous Waste Rules, 2008 as amended (India - EP Act):**

29.1 Process wastes/residues  
29.3 Date-expired and off-specification pesticides

## SECTION 14: TRANSPORT INFORMATION

### ADR/RID/ADN

14.1 UN number	<b>3077</b>
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DELTAMETHRIN MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Environm. Hazardous Mark	YES
Hazard no.	90
Hazchem Code	2Z

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

### IMDG

14.1 UN number	<b>3077</b>
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DELTAMETHRIN MIXTURE)
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Marine pollutant	YES

### IATA

14.1 UN number	<b>3077</b>
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (DELTAMETHRIN MIXTURE )
14.3 Transport hazard class(es)	9
14.4 Packaging Group	III
14.5 Environm. Hazardous Mark	YES

### 14.6 Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

No transport in bulk according to the IBC Code.



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**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Further information**

WHO-classification: III (Slightly hazardous)

**Labeling according to Insecticide Rules 1971 as amended. (INDIA)**



Class II: Highly toxic  
Colour: bright yellow  
Poison!  
Keep out of the reach of children.

**SECTION 16: OTHER INFORMATION**

**Text of the hazard statements mentioned in Section 3**

H301 Toxic if swallowed.  
H331 Toxic if inhaled.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.

**Abbreviations and acronyms**

ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road  
ATE Acute toxicity estimate  
CAS-Nr. Chemical Abstracts Service number  
Conc. Concentration  
EC-No. European community number  
ECx Effective concentration to x %  
EINECS European inventory of existing commercial substances  
ELINCS European list of notified chemical substances  
EN European Standard  
EU European Union  
IATA International Air Transport Association  
IBC International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)  
ICx Inhibition concentration to x %  
IMDG International Maritime Dangerous Goods  
LCx Lethal concentration to x %  
LDx Lethal dose to x %  
LOEC/LOEL Lowest observed effect concentration/level  
MARPOL MARPOL: International Convention for the prevention of marine pollution from ships  
N.O.S. Not otherwise specified  
NOEC/NOEL No observed effect concentration/level  
OECD Organization for Economic Co-operation and Development  
RID Regulations concerning the International Carriage of Dangerous Goods by Rail  
TWA Time weighted average

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UN United Nations  
WHO World health organisation

The information contained within this Safety Data Sheet is in accordance with the guidelines established by Regulation (EU) 1907/2006 and Regulation (EU) 2015/830 amending Regulation (EU) No 1907/2006 and any subsequent amendments. This data sheet complements the user's instructions, but does not replace them. The information it contains is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. The required information complies with current EEC legislation. Addressees are requested to observe any additional national requirements.

**Reason for Revision:** Reviewed and updated for general editorial purposes.

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