



## **K-OTHRINE FLOW, INDIA**

Version 1 / IND  
102000003177

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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-OTHRINE FLOW, INDIA  
**Product code (UVP)** 05946565

#### **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)

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### **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

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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**

Suspension concentrate (=flowable concentrate)(SC)  
 Deltamethrin 2.5% w/w SC

**Hazardous components**

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

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

**Further information**

|              |            |  |
|--------------|------------|--|
| Deltamethrin | 52918-63-5 | M-Factor: 1,000,000 (acute), 1,000,000 (chronic) |
|--------------|------------|--|

For the full text of the H-Statements mentioned in this Section, see Section 16.

**SECTION 4: FIRST AID MEASURES****4.1 Description of first aid measures****General advice**

Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

**Inhalation**

Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.



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|                     |  |
|---------------------|--|
| <b>Skin contact</b> | 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.   |
| <b>Eye contact</b>  | 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. |
| <b>Ingestion</b>    | Rinse out mouth and give water in small sips to drink. Do NOT induce vomiting. Call a physician or poison control center immediately.  |

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

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

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

|                  |  |
|------------------|--|
| <b>Risks</b>     | This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.   |
| <b>Treatment</b> | 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.<br><br>In case of skin irritation, application of oils or lotions containing vitamin E may be considered. |

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**SECTION 5: FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

|                     |  |
|---------------------|--|
| <b>Suitable</b>     | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
| <b>Unsuitable</b>   | High volume water jet  |
| <b>Hazchem Code</b> | 3Z   |



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|  |   |
|--|---|
| <b>5.2 Special hazards arising from the substance or mixture</b> | Dangerous gases are evolved in the event of a fire.   |
| <b>5.3 Advice for firefighters</b>                               |   |
| <b>Special protective equipment for firefighters</b>             | In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.  |
| <b>Further information</b>                                       | 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. |

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### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

|                    |   |
|--------------------|---|
| <b>Precautions</b> | 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. |
|--------------------|---|

|                                      |  |
|--------------------------------------|--|
| <b>6.2 Environmental precautions</b> | Do not allow to get into surface water, drains and ground water. |
|--------------------------------------|--|

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

|                                |  |
|--------------------------------|--|
| <b>Methods for cleaning up</b> | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Clean floors and contaminated objects with plenty of water. |
|--------------------------------|--|

|                          |   |
|--------------------------|---|
| <b>Additional advice</b> | Check also for any local site procedures. |
|--------------------------|---|

|  |   |
|--|---|
| <b>6.4 Reference to other sections</b> | Information regarding safe handling, see section 7.<br>Information regarding personal protective equipment, see section 8.<br>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> | No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation. |
|--------------------------------|--|

|  |                                  |
|--|----------------------------------|
| <b>Advice on protection against fire and explosion</b> | No special precautions required. |
|--|----------------------------------|

|                         |   |
|-------------------------|---|
| <b>Hygiene measures</b> | When using, do not eat, drink or smoke. Remove soiled clothing immediately and clean thoroughly before using again. Contaminated work clothing should not be allowed out of the workplace. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Wash hands immediately after work, if necessary take a shower. |
|-------------------------|---|

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**Requirements for storage areas and containers** Store in a place accessible by authorized persons only. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Protect from freezing.

**Advice on common storage** Keep away from food, drink and animal feedingstuffs.

**7.3 Specific end use(s)** 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><br>(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>   | Respiratory protection is not required under anticipated circumstances of exposure.<br>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.<br>Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.<br>Material Nitrile rubber<br>Rate of permeability > 480 min<br>Glove thickness > 0.4 mm<br>Protective index Class 6<br>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 6 suit.<br>If there is a risk of significant exposure, consider a higher protective type suit.<br>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.   |

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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.

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

|   |  |
|---|--|
| <b>Form</b>                                   | suspension   |
| <b>Colour</b>                                 | white to light beige   |
| <b>Flash point</b>                            | >100 °C<br>Test conducted with a similar formulation.        |
| <b>Density</b>                                | ca. 1.02 g/cm <sup>3</sup> ( 20 °C)                          |
| <b>Water solubility</b>                       | miscible   |
| <b>Partition coefficient: n-octanol/water</b> | Deltamethrin: log Pow: 6.4 (25 °C)                           |
| <b>Explosivity</b>                            | Not explosive  |
| <b>9.2 Other information</b>                  | 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.**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.**SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Acute oral toxicity** LD50 (Rat) > 15,000 mg/kg  
Test conducted with a similar formulation.**Acute inhalation toxicity** LC50 (Rat) > 2.3 mg/l  
Exposure time: 4 h  
No deaths  
Highest attainable concentration.



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|  | Test conducted with a similar formulation.   |
| <b>Acute dermal toxicity</b>             | LD50 (Rat) > 10,000 mg/kg<br>Test conducted with a similar formulation.            |
| <b>Skin corrosion/irritation</b>         | No skin irritation (Rabbit)<br>Test conducted with a similar formulation.          |
| <b>Serious eye damage/eye irritation</b> | No eye irritation (Rabbit)<br>Test conducted with a similar formulation.           |
| <b>Respiratory or skin sensitisation</b> | Non-sensitizing. (Mouse)<br>OECD Test Guideline 429, local lymph node assay (LLNA) |

**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).

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Toxicity**

**Toxicity to fish** LC50 (Oncorhynchus mykiss (rainbow trout)) 100 mg/l  
Exposure time: 96 h  
Test conducted with a similar formulation.

**Toxicity to aquatic invertebrates** EC50 (Daphnia magna (Water flea)) 0.0019 mg/l  
Exposure time: 48 h  
Test conducted with a similar formulation.

**Toxicity to aquatic plants** EC50 (Desmodesmus subspicatus (green algae)) > 1,000 mg/l  
Growth rate; Exposure time: 72 h



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Test conducted with a similar formulation.

EC50 (Desmodemus subspicatus (green algae)) > 1,000 mg/l

Biomass; Exposure time: 96 h

Test conducted with a similar formulation.

**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** 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.

**Contaminated packaging** Empty remaining contents.  
Do not re-use empty containers.  
Dispose of as unused product.

**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

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**SECTION 14: TRANSPORT INFORMATION**

**ADR/RID/ADN**

14.1 UN number

**3082**

14.2 Proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.



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



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|                                 |                         |
|---------------------------------|-------------------------|
|                                 | (DELTAMETHRIN SOLUTION) |
| 14.3 Transport hazard class(es) | 9                       |
| 14.4 Packaging Group            | III                     |
| 14.5 Environm. Hazardous Mark   | YES                     |
| Hazard no.                      | 90                      |
| Hazchem Code                    | 3Z                      |

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>3082</b>   |
| 14.2 Proper shipping name       | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,<br>N.O.S.<br>(DELTAMETHRIN SOLUTION) |
| 14.3 Transport hazard class(es) | 9   |
| 14.4 Packaging Group            | III   |
| 14.5 Marine pollutant           | YES   |

### IATA

|                                 |  |
|---------------------------------|--|
| 14.1 UN number                  | <b>3082</b>  |
| 14.2 Proper shipping name       | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,<br>N.O.S.<br>(DELTAMETHRIN SOLUTION ) |
| 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: U (Unlikely to present acute hazard in normal use)

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



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

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|      |   |
|------|---|
| 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  |
| 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.