

Bayer CropScience Limited	<b>MATERIAL SAFETY DATA SHEET</b> (As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)		
K- OTHRINE FLOW - SC			
MSDS NO. : <b>5946565</b>	ISSUE NO. : <b>03</b>	DATE OF ISSUE : <b>01.08.2005</b>	PAGE 1 OF 8
<p><b>1. CHEMICAL IDENTITY</b></p> <p>1.1 PRODUCT NAME / TRADE NAME : <b>K- OTHRINE FLOW - SC</b></p> <p>1.2 CHEMICAL CLASSIFICATION : Pyrethroid. Insecticide</p> <p>1.3 CHEMICAL NAME : Deltamethrin, <b>(S)-alpha-cyano-3-Phenoxybenzyl (1R)-cis-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate</b></p> <p>1.4 SYNONYMS : -</p> <p>1.5 FORMULA : <b>C<sub>22</sub>H<sub>19</sub>Br<sub>2</sub>NO<sub>3</sub></b> <span style="float: right;"><b>M. W. : 505.21</b></span></p> <p>1.6 C.A.S. NO. : 52918-63-5</p> <p>1.7 U.N. NO. : <b>3082</b></p> <p>1.8 REGULATED IDENTIFICATION :</p> <p>1.8.1 SHIPPING NAME CODES / LABEL : <b>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DELTAMETHRIN SOLUTION) Class 9, Pack group III.</b></p> <p style="margin-left: 40px;">Hazard Classification  F - Highly flammable - NO  Xn - Harmful - YES  T - Toxic - YES  N - Dangerous For Environment - YES</p> <p style="margin-left: 40px;">R phrases: Harmful by inhalation.  Toxic if swallowed.  Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.</p> <p style="margin-left: 40px;">S phrases: After contact with skin, wash immediately with plenty of water and soap.  Wear suitable protective clothing, gloves and eyes/face protection.  In case of insufficient ventilation, wear suitable respiratory equipment.  In case of accident or if you feel unwell, seek medical advice immediately. Show the label where possible.  This material and its container must be disposed of as hazardous waste.  Avoid release to the environment.</p> <p>1.8.2 HAZCHEM NO. : <b>2X</b></p>			

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1.8.3 HAZARDOUS WASTE ID NO.	: <b>29</b>		
1.9 HAZARDOUS INGREDIENTS	: Deltamethrin	C.A.S. NO. 52918-63-5	% 2.5
<b>2. PHYSICAL AND CHEMICAL DATA</b>			
2.1 PHYSICAL STATE	: Liquid		
2.2 APPEARANCE	: <b>White</b>		
2.3 ODOUR	: <b>Characteristic</b>		
2.4 <del>SPECIFIC GRAVITY</del> / DENSITY (Water = 1) (g/ml)	: 1.041 to 1.04 at 20 °C		
2.5 VAPOUR PRESSURE AT 25 °C	: 1.5 mm		
2.6 VAPOUR DENSITY (Air=1)	: Not Available		
2.7 BOILING RANGE/POINT °C	: 100		
2.8 MELTING/FREEZING POINT °C	: Not Available		
2.9 SOLUBILITY IN WATER	: Partly soluble		
2.10 pH	: 4 - 6		
<b>3. FIRE AND EXPLOSION HAZARD DATA</b>			
3.1 FLAMMABILITY	: Not easily flammable		
3.2 FLASH POINT. (°C)	: Not Applicable		
3.3 AUTO - IGNITION TEMP. (°C)	: Not Applicable		
3.4 UPPER EXPLOSION LIMIT ( % By Volume )	: Not Explosive		
3.5 LOWER EXPLOSION LIMIT ( % By Volume )	: Not Explosive		
3.6 TDG FLAMMABILITY	: Not Available		
3.7 EXPLOSION SENSITIVITY TO IMPACT	: Not Explosive		

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3.8	EXPLOSION SENSITIVITY TO STATIC ELECTRICITY	:	Not Explosive
3.9	HAZARDOUS COMBUSTION PRODUCTS	:	Not Applicable.
3.10	HAZARDOUS POLYMERISATION	:	Not Known
3.11	CUMBUSTIBLE SOLID / LIQUID	:	No
3.12	EXPLOSIVE MATERIAL	:	No
3.13	CORROSIVE MATERIAL	:	Not Known
3.14	FLAMMABLE MATERIAL	:	No
3.15	OXIDISER	:	Not Known
3.16	PYROPHORIC MATERIAL	:	Not Known
3.17	ORGANIC PEROXIDE	:	Not Known
3.18	OTHERS	:	Not Available
<b>4. REACTIVITY DATA</b>			
4.1	CHEMICAL STABILITY	:	Stable Under Normal Temperature And Pressure.
4.2	INCOMPATIBILITY WITH OTHER MATERIAL	:	Not Known Extremes of temperature and direct sunlight.
4.3	REACTIVITY	:	Reacts with strong oxidizers
4.4	HAZARDOUS REACTION PRODUCTS	:	Not Known
<b>5. HEALTH HAZARD DATA</b>			
5.1	ROUTS OF ENTRY	:	Skin and Eye contact, Inhalation, Ingestion.
5.2	EFFECTS OF EXPOSURE / SYMPTOMS	:	Contact Symptoms: Paresthesia (local), May cause skin and eye irritation. cutaneous sensation may occur such as burning, stinging sensation on the face and mucous membrane. Inhalation Symptoms: Irritation, Cough. Systemic Symptoms : Excitement, Gastrointestinal discomfort, Tremor, Dizziness, Headache,

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5.3 EMERGENCY TREATMENT		<p>Listlessness, Nausea and Vomiting, Epigastric pain, Muscular fasciculation of limbs, unconsciousness, convulsions and coma (very high doses).</p> <p><b>Eyes:</b> Wash with large amounts of water immediately, Occasionally lifting upper and lower lids, (approximately 15-20 minutes)  <b>Skin:</b> Remove contaminated clothing and shoes immediately. wash affected area with soap and mild detergent and large amounts of water (approximately 15 - 20 minutes)  <b>Inhalation:</b> Remove victim from exposed area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.  <b>Ingestion:</b> Rinse mouth. Induce vomiting only, if patient is fully conscious, medical aid is not readily available, significant amount (more than a mouthful) has been ingested and time since ingestion is less than 1 hour. (Vomit should not get into the respiratory tract).</p>	
5.4 TLV (ACGIH)	: Not Available		
5.5 STEL	: Not Available		
5.6 PERMISSIBLE EXPOSURE LIMIT	: Not Available		
5.7 ODOUR THRESHOLD	: Not Available		
5.8 LD 50 (Routes & Species)	: Oral rat : 66.7 mg/kg		
	: Dermal rat : Not Available		
LC 50 (Routes & Species)	: Inhalation rat : 2.2 mg/l.		
		<b>TOXICOLOGICAL INFORMATION</b> Carcinogenicity: Not carcinogenic Genotoxicity: Not teratogenic and mutagenic. Reproductive Toxicity: Not teratogenic Other Information: Some coetaneous sensations occur, such as burning, stinging sensations on the face and mucosa, without lesions and transient Some Hours, Maximum 24 H.	
		<b>ECOLOGICAL INFORMATION</b> Mobility: Fixed in most soils. Persistence / Degradability: Not Available Bio-Accumulation: Not Known Aquatic Toxicity: Aqua Toxic. Other Toxicity: Not Available	

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<p>5.9 NFPA HAZARD SIGNALS :</p> <p style="padding-left: 100px;">HEALTH : Not Available</p> <p style="padding-left: 100px;">FLAMMABILITY : Not Available</p> <p style="padding-left: 100px;">REACTIVITY : Not Available</p> <p style="padding-left: 100px;">SPECIAL : Not Available</p>			
<p><b>6. PREVENTIVE MEASURES</b></p> <p>6.1 PERSONAL PROTECTIVE EQUIPMENT :</p> <p style="padding-left: 40px;">-- GLOVES : Rubber Hand gloves</p> <p style="padding-left: 40px;">-- RESPIRATORY : Approved Respirator, Dust Mask</p> <p style="padding-left: 40px;">-- EYES : Chemical safety goggles must be worn.</p> <p style="padding-left: 40px;">-- FOOTWARE : Conductive shoes</p> <p style="padding-left: 40px;">-- CLOTHING : Protective clothing.</p> <p style="padding-left: 40px;">-- OTHER :</p> <p>6.2 HANDLING AND STORAGE PRECAUTIONS : No specific precautions required when handling unopened packs / containers; follow relevant manual handling advice.</p> <p style="padding-left: 40px;">Avoid dust formation. Provide good ventilation of working area (local exhaust ventilation if necessary). While handling does not eat, drink or smoke and wear personal protective clothing. Remove soiled clothing immediately. Remove soaked clothing immediately. Clean hands and face at work intervals and after work.</p> <p style="padding-left: 40px;">Keep in original packaging, tightly closed container, in a dry and well-ventilated place. Store in a place accessible by authorized persons only.</p> <p style="padding-left: 40px;">Protect against moisture, heat and direct sunlight, Keep away from food, drink and animal feeding stuffs. Storage temperature : 0 - 30 °C.</p>			
<p><b>7. EMERGENCY AND FIRST AID MEASURES</b></p> <p>7.1 FIRE :</p> <p>7.1.1 FIRE EXTINGUISHING MEDIA : Alcohol-resistant foam, Water spray jet, Carbon dioxide (CO<sub>2</sub>)(Dry Ice), DCP,</p>			

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7.1.2 SPECIAL PROCEDURES	: Use self-contained breathing apparatus. Wear full protective suit. If possible and without risk, remove intact containers from exposure to fire. Otherwise, spray unopened containers with water to keep cool. Contain fire-fighting water by bunding area with sand or earth. Collect contaminated firefighting water separately, must not be discharged into the drains. Do not whirl around the product.		
7.1.3 UNUSUAL HAZARDS	: Thermal decomposition of product emits toxic fumes of Carbon Oxides(CO <sub>x</sub> ), Nitrogen Oxides(NO <sub>x</sub> ) Br and Cn.		
7.2 EXPOSURE			
7.2.1 FIRST AID MEASURE	: Seek medical advice immediately and show this container or label. <b>Eyes:</b> Wash with large amounts of water immediately, Occasionally lifting upper and lower lids, (approximately 15-20 minutes). Instillation of local anesthetic drops e.g. 1% Amethocaine Hydrochloride eye drops. Give Analgesics as necessary. <b>Skin:</b> Remove contaminated clothing and shoes immediately. Wash affected area with soap and mild detergent and large amounts of water (approximately 15 - 20 minutes). Apply Vitamin E Cream or simple toilet milks. <b>Inhalation:</b> Remove victim from exposed area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. <b>Ingestion:</b> Rinse mouth. Induce vomiting only, if patient is fully conscious, medical aid is not readily available, significant amount (more than a mouthful) has been ingested and time since ingestion is less than 1 hour. (Vomit should not get into the respiratory tract). Initial treatment should be symptomatically and supportively. Systemic treatment: Endotracheal intubation should be done and gastric lavage performed, followed by administration of charcoal. Monitoring of respiratory and cardiac functions ECG - monitoring (Electrocardiogram) Check for pulmonary oedema in event of inhalation. Keep airway clear, administer artificial respiration if necessary. Against convulsions: Give diazepam: for adults 5-10		

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7.2.2 ANTIDOTE/DOSAGE	<p>mg I. V. as necessary until fully sedated; for children 2.5 mg I. V. Elimination By : Dialysis, Haemo - Perfusion.</p> <p>: There is no antidote. This product/preparation contains a pyrethroid. Must NOT be confused with organophosphorus compounds. <b>Contraindication:</b> 1) Atropine. 2) Adrenergic compounds. <b>3) derivatives of adrenaline</b> <b>Recovery:</b> Spontaneous.</p>		
7.3 SPILLS	:		
7.3.1 STEPS TO BE TAKEN	: Avoid contact with spilled material or contaminated surfaces. If ordinary clothing becomes contaminated remove it immediately. When dealing with the spillage do not eat, drink or smoke and wear personal protective clothing. Absorb in sand, earth or a proprietary absorbent material. Sweep or preferably vacuum up spillage using equipment fitted with high efficiency final filter. Avoid creating a dust. Clean the area with soap solution Do not allow entering in drains or waterways. Transfer collected material to heavy duty plastic drums and keep safe for disposal.		
7.3.2 WASTE DISPOSAL METHOD	: Product disposal in accordance with regulations for special waste. It must be taken to special waste disposal site and should be incinerated at a suitable waste incineration plant in accordance with official regulations. Where large quantities are concerned consult the supplier. This material and its container must be disposed as a hazardous waste. Avoid release to the environment		
8. ADDITIONAL INFORMATION / REFERENCE	: BCS GLOBAL QHSE MSDS Library - SAP MSDS System - Material/UVP No. – 4150936, 3571681.		
9. MANUFACTURER / SUPPLIERS DATA			
9.1 NAME OF FIRM	: Bayer CropScience Limited		
9.2 MAILING ADDRESS	: 6301-10A,GIDC, Ankleshwar, (Gujarat) Pin Code: 393 002		

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9.3	TELEPHONE	: <b>91-2646-551007-Ankleshwar</b> <b>91-22-25311030-Thane</b>	
9.4	TELEFAX NO.	: <b>91-2646-551281-Ankleshwar</b> <b>91-22-25455223-Thane</b>	
9.5	E – MAIL	: <b><u>rajen.salot@bayercropscience.com</u></b> <b><u>sadanand.dandekar@bayercropscience.com</u></b>	
9.6	TELEGRAPHIC ADDRESS	: -	
9.7	a) CONTACT PERSON IN EMERGENCY	: <b>Emergency Control Center</b> <b>Bayer Crop Science Limited,</b> <b>Kolshet Road,</b> <b>Thane (Maharashtra State) 400 607</b> <b>Telephone No.       022-25311884</b> <b>                              022-25311885</b>	
9.7	b) LOCAL BODIES INVOLVED	: <b>Disaster Prevention Management Center,</b> <b>GIDC, Ankleshwar.</b>	
9.8	STANDARD PACKING	: <b>10 ml and 1000 ml in HDPE bottle</b>	
9.9	TREMCARD DETAILS / REF. NO.	: <b>Available</b>	
<b>10.</b>	<b>DISCLAIMER</b>	: Information contained in this Material Safety Data Sheet is believed to be reliable but no representation guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to Manufacturer / Seller to ensure that the information contained in the Material Safety Data Sheet is relevant to the product manufactured / handled or sold by him as the case may be. The company makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.	

Changes since the last version are highlighted in **Red Bold Italic**. This version replaces all previous versions.