

Bayer CropScience Limited		MATERIAL SAFETY DATA SHEET <i>(As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)</i>	
SOLFAC 50 EW			
MSDS NO. : 787809	ISSUE NO. : 01	DATE OF ISSUE : 01.08.2005	PAGE 1 OF 8

1. CHEMICAL IDENTITY

1.1 PRODUCT NAME / TRADE NAME : **SOLFAC 50 EW**

1.2 CHEMICAL CLASSIFICATION Synthetic Pyrethroid

1.3 CHEMICAL NAME : **Cyfluthrin, Cyano (4-fluoro-3-phenoxyphenyl) methyl 3- (2,2 - dichloroethyl) 2,2 - dimehyl cyclopropane carboxylate**

1.4 SYNONYMS :-

1.5 FORMULA : **C₂₂H₁₈Cl₂FNO₃** M.W: **434.29**

1.6 C.A.S. NO. : 68359-37-5

1.7 U.N. NO. : **3082**

1.8 REGULATED IDENTIFICATION

1.8.1 SHIPPING NAME : **ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CYFLUTHRIN SOLUTION, Class 9, Packaging group III**
CODES/LABEL

Hazard Classification
N - Dangerous for the environment - YES
R-phrases: R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases: S35 This material and its container must be disposed of in a safe way. S57 Use appropriate containment to avoid environmental contamination.

1.8.2 HAZCHEM NO. : **2Y**

1.8.3 HAZARDOUS WASTE ID NO. : **29**

1.9 HAZARDOUS INGREDIENTS	: Cyfluthrin	C.A.S. No.	%
	Solvesso	68359-37-5	5.0
	DM Water	Not Available	16.6
		Not Available	66.0

2. PHYSICAL AND CHEMICAL DATA

2.1 PHYSICAL STATE : Liquid

2.2 APPEARANCE : Milky white

Bayer CropScience Limited		MATERIAL SAFETY DATA SHEET <i>(As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)</i>	
SOLFAC 50 EW			
MSDS NO. : 787809	ISSUE NO. : 01	DATE OF ISSUE : 01.08.2005	PAGE 2 OF 8
2.3	ODOUR	:Aromatic	
2.4	SPECIFIC GRAVITY / DENSITY (WATER = 1) (g/ml)	: ca. 1,01 g/cm³ at 20 °C	
2.5	VAPOUR PRESSURE AT 20 °C	:27 hPa at 20°C 134 hPa at 50°C 170 hPa at 55°C	
2.6	VAPOUR DENSITY (AIR=1)	:Not Available.	
2.7	BOILING RANGE/POINT °C	:approx. 100	
2.8	MELTING/FREEZING POINT °C	: -1	
2.9	SOLUBILITY	:Forms Emulsion in water.	
2.10	pH	:2.5 to 3.5	
3. FIRE AND EXPLOSION HAZARD DATA			
3.1	FLAMMABILITY	:Not Flammable	
3.2	FLASH POINT. (°C)	:> 100 DIN 51758 No flash point - Determination conducted up to the boiling point.	
3.3	AUTO - IGNITION TEMP. (°C)	:> 500	
3.4	UPPER EXPLOSION LIMIT (% BY VOLUME)	:Not Available	
3.5	LOWER EXPLOSION LIMIT (% BY VOLUME)	:Not Available	
3.6	TDG FLAMMABILITY	:Not Available	
3.7	EXPLOSION SENSITIVITY TO IMPACT	:>100 joule i.e. not sensitive to impact (in BAM dropping Weight test; BAM = German Federal Institute for Materials Testing)	
3.8	EXPLOSION SENSITIVITY TO STATIC ELECTRICITY	:Not Available	
3.9	HAZARDOUS COMBUSTION PRODUCTS	:Not Available	

Bayer CropScience Limited		MATERIAL SAFETY DATA SHEET <i>(As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)</i>	
SOLFAC 50 EW			
MSDS NO. : 787809	ISSUE NO. : 01	DATE OF ISSUE : 01.08.2005	PAGE 3 OF 8
<p>3.10 HAZARDOUS POLYMERISATION : Not Available</p> <p>3.11 CUMBUSTIBLE LIQUID : Not Available</p> <p>3.12 EXPLOSIVE MATERIAL : Not Available</p> <p>3.13 CORROSIVE MATERIAL : Not Available</p> <p>3.14 FLAMMABLE MATERIAL : No</p> <p>3.15 OXIDISER : Not Available</p> <p>3.16 PYROPHORIC MATERIAL : Not Available</p> <p>3.17 ORGANIC PEROXIDE : Not Available</p> <p>3.18 OTHERS : Not Available</p>			
4. REACTIVITY DATA			
4.1 CHEMICAL STABILITY : Stable under recommended storage conditions.			
4.2 INCOMPATIBILITY WITH OTHER MATERIAL : Not Available			
4.3 REACTIVITY : Not Available			
4.4 HAZARDOUS REACTION PRODUCTS : Not Available			
5. HEALTH HAZARD DATA			
5.1 ROUTS OF ENTRY : Skin and/or eye contact, Inhalation, Ingestion.			
5.2 EFFECTS OF EXPOSURE / SYMPTOMS : Local: After skin contact: paresthesia (local), Usually transient with resolution within 24 hours. Systemic: Excitement, gastrointestinal discomfort, tremor, Dizziness, headache, listlessness, nausea and vomiting, epigastric pain, muscular fasciculation of limbs, unconsciousness, convulsions and coma (very high doses).			
5.3 EMERGENCY TREATMENT : Remove victim from exposed area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Remove contaminated clothing and shoes immediately. Wash affected area with soap and mild			

Bayer CropScience Limited		MATERIAL SAFETY DATA SHEET <i>(As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)</i>	
SOLFAC 50 EW			
MSDS NO. : 787809	ISSUE NO. : 01	DATE OF ISSUE : 01.08.2005	PAGE 4 OF 8
<p>5.4 TLV (ACGIH) : Not Available</p> <p>5.5 STEL : Not Available</p> <p>5.6 PERMISSIBLE EXPOSURE LIMIT : Not Available</p> <p>5.7 ODOUR THRESHOLD : Not Available</p> <p>5.8 LD 50 (ROUTES & SPECIES) : Oral rat : 2,113 mg/kg Dermal rat : > 5,000 mg/kg LC 50 (ROUTES & SPECIES) : Inhalation rat : 7.576 mg/l, Exposure time: 4 h (as aerosol) Highest attainable concentration.</p> <p>TOXICOLOGICAL INFORMATION Skin irritation: slight irritant effect - does not require labeling (rabbit). Eye irritation: slight irritant effect - does not require labeling (rabbit).</p> <p>ECOLOGICAL INFORMATION Aquatic Toxicity Fish LC50 (Rainbow trout (Oncorhynchus mykiss)) 0.00047 mg/l, Exposure time: 96 h Daphnia EC50 (Water flea (Daphnia magna)) 0.00016 mg/l, Exposure time: 48 h Algae IC50 (Desmodesmus subspicatus) > 10 mg/l, Growth rate Exposure time: 72 h The values mentioned relates to the active ingredient. No acute toxicity was observed at its limit of water solubility.</p> <p>5.9 NFPA HAZARD SIGNALS : HEALTH : Not Available FLAMMABILITY : Not Available REACTIVITY : Not Available SPECIAL : Not Available</p>		<p>detergent and large amounts of water. If entered in eyes wash with large amounts of water immediately, occasionally lifting upper and lower lids. (approx. 15 - 20 minutes). If ingested rinse mouth. DO NOT Induce vomiting. Call a physician immediately.</p>	
6. PREVENTIVE MEASURES			
6.1 PERSONAL PROTECTIVE EQUIPMENT :			
-- GLOVES		: Rubber Hand gloves	

Bayer CropScience Limited		MATERIAL SAFETY DATA SHEET (As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)	
SOLFAC 50 EW			
MSDS NO. : 787809	ISSUE NO. : 01	DATE OF ISSUE : 01.08.2005	PAGE 5 OF 8
		-- RESPIRATORY : Approved Respirator -- EYES : Chemical safety goggles -- FOOTWEAR : Conductive shoes -- CLOTHING : Protective clothing. -- OTHER : Shower and Eye wash bottle.	
6.2	HANDLING AND STORAGE PRECAUTIONS	: Handling: <i>Use only in area provided with appropriate exhaust ventilation.</i> <i>While handling does not eat, drink and smoke.</i> Avoid contact of product with skin, eyes and clothing. Change badly soiled or soaked clothing. Wash hands before breaks and at end of work. Remove soiled or soaked clothing immediately and clean thoroughly before using again. Storage: <i>Keep container tightly closed in a dry and well-ventilated place.</i> <i>Store in a place accessible by authorized persons only.</i> Keep only in the original container at temperature not exceeding 50 °C. Keep away from food, drink and animal feeding stuffs. German storage class: 12 Non Combustible Liquids. Suitable materials: LDPE (Low-density polyethylene), HDPE (high-density polyethylene).	
7. EMERGENCY AND FIRST AID MEASURES			
7.1	FIRE	:	
7.1.1	FIRE EXTINGUISHING MEDIA	: Water spray, Carbon dioxide (CO2), Foam, Sand.	
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.	

Bayer CropScience Limited		MATERIAL SAFETY DATA SHEET <i>(As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)</i>	
SOLFAC 50 EW			
MSDS NO. : 787809	ISSUE NO. : 01	DATE OF ISSUE : 01.08.2005	PAGE 6 OF 8
7.1.3 UNUSUAL HAZARDS	:In the event of fire, the formation of Hydrogen chloride, Hydrogen cyanide, Hydrogen fluoride, Carbon monoxide and Nitrogen oxides (NO _x) are anticipated.		
7.2 EXPOSURE			
7.2.1 FIRST AID MEASURE	:Seek medical advice immediately and show this container or label. Eyes: Wash with large amounts of water immediately, occasionally lifting upper and lower lids, (approximately 15-20 minutes) Skin: 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. Inhalation: 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. Ingestion: Rinse mouth. DO NOT Induce vomiting. Call a physician immediately. If the patient is likely to become unconscious, place and transport in stable sideways position. Treat symptomatically and supportively. This product/preparation contains a Pyrethroid. Must NOT be confused with organophosphorus compounds!		
7.2.2 ANTIDOTE/DOSAGE	: There is no antidote. Endotracheal intubation should be done and gastric lavage performed, followed by administration of charcoal. Monitoring of respiratory, cardiac and central nervous system. ECG - monitoring (Electrocardiogram) Early dialysis (haemoperfusion) Check for pulmonary oedema in event of inhalation. Against convulsions: Give diazepam: for adults 5-10 mg intravenously as necessary until fully sedated; for children 2.5 mg i.v. Contraindication: Atropine and derivatives of adrenaline		
7.3 SPILLS	:		

Bayer CropScience Limited		MATERIAL SAFETY DATA SHEET <i>(As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)</i>	
SOLFAC 50 EW			
MSDS NO. : 787809	ISSUE NO. : 01	DATE OF ISSUE : 01.08.2005	PAGE 7 OF 8
7.3.1 STEPS TO BE TAKEN		:Use Personal Protective Instruments. 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. 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. – 4289683.	
9. MANUFACTURER / SUPPLIERS DATA			
9.1 NAME OF FIRM	:Bayer CropScience Limited		
9.2 MAILING ADDRESS	:Kolshet Road, Thane (Maharashtra) Pin Code 400607		
9.3 TELEPHONE	: 91-22-25311030-Thane		
9.4 TELEFAX NO.	: 91-2646-250138-Ankleshwar 91-22-25455223-Thane		
9.5 E-MAIL	: sadanand.dandekar@bayercropscience.com		
9.6 TELEGRAPHIC ADDRESS	:--		

Bayer CropScience Limited		MATERIAL SAFETY DATA SHEET <i>(As per Schedule 9, Rule 17 of the Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 Amendment 2003)</i>	
SOLFAC 50 EW			
MSDS NO. : 787809	ISSUE NO. : 01	DATE OF ISSUE : 01.08.2005	PAGE 8 OF 8
9.7	a) CONTACT PERSON IN EMERGENCY	:Emergency Control Center Bayer Crop Science Limited, Kolshet Road, Thane (Maharashtra State) 400 607 Telephone No. 022-25311884 022-25311885	
	b) LOCAL BODIES INVOLVED	:District Emergency Control Center, Collector Office, Thane.	
9.8	STANDARD PACKING	: 1 Lt pack.	
9.9	TREMCARD DETAILS / REF. NO.	: Available.	
10.	DISCLAIMER	: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.