



# MATERIAL SAFETY DATA SHEET

## ROBIN 25 EC

### IDENTIFICATION OF THE SUPPLIER:

**AGRO CHEMICALS INDUSTRIES LTD**  
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### PRODUCT IDENTIFICATION:

**Common Name:** pyraclostrobin  
**Trade Name:** Robin 25 EC  
**Chemical Name:** methyl N-{2-[1-(4-chlorophenyl)pyrazol-3-yloxymethyl]phenyl}(N-methoxy)carbamate  
**Chemical Formula:** C<sub>19</sub>H<sub>18</sub>ClN<sub>3</sub>O<sub>4</sub>  
**Molecular Weight:** 403.4

### PRODUCT COMPOSITION:

<i>Active Ingredient:</i>	% w/v	CAS #
Pyraclostrobin	25% w/v	[175013-18-0]

***Inert materials:*** Up to 1 liter

### HAZARDS IDENTIFICATION:

#### Emergency overview

**WARNING:**

May be fatal if swallowed.

Causes substantial but temporary eye injury.

**CAUSES SKIN IRRITATION.**



HARMFUL IF ABSORBED THROUGH SKIN.  
KEEP OUT OF REACH OF CHILDREN.  
KEEP OUT OF REACH OF DOMESTIC ANIMALS.  
Avoid contact with the skin, eyes and clothing.

See Product Label for additional precautionary statements.

State of matter: liquid

Colour: dark yellow

Odour: faint odour, aromatic

### **Potential health effects**

#### **Primary routes of exposure:**

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

#### **Acute toxicity:**

Moderately toxic after single ingestion. Relatively nontoxic after short-term inhalation. Slightly toxic after shortterm skin contact.

#### **Irritation / corrosion:**

Causes substantial but temporary eye injury. May cause moderate irritation to the skin.

#### **Assessment other acute effects:**

Causes temporary irritation of the respiratory tract.

#### **Sensitization:**

Skin sensitizing effects were not observed in animal studies.

#### **Chronic toxicity:**

**Carcinogenicity:** The product has not been tested. The statement has been derived from the properties of the individual components.

#### **Medical conditions aggravated by overexposure:**

Individuals with pre-existing diseases of the respiratory system, skin or eyes may have increased susceptibility to excessive exposures.

#### **Signs and symptoms of overexposure:**

Vomiting may cause aspiration pneumonia due to the ingredients. Because of the increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent, vomiting should be induced only under professional supervision.



## **Potential environmental effects**

### **Aquatic toxicity:**

Very toxic (acute effect) to aquatic organisms.

### **Terrestrial toxicity:**

With high probability not acutely harmful to terrestrial organisms.

## **FIRST AID MEASURES:**

### **General advice:**

First aid providers should wear personal protective equipment to prevent exposure. Remove contaminated clothing. Move person to fresh air. If person is not breathing, call 911 or ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or physician for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment.

### **If inhaled:**

Remove the affected individual into fresh air and keep the person calm.

### **If on skin:**

Rinse skin immediately with plenty of water for 15 - 20 minutes.

### **If in eyes:**

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing.

### **If swallowed:**

Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Do not induce vomiting. Have person sip a glass of water if able to swallow.

### **Note to physician**

**Treatment:** Treat according to symptoms (decontamination, vital functions), no known specific antidote

## **FIRE FIGHTING MEASURES:**

<b>Flash point:</b>	approx. 104 °C	Information applies to the solvent.
<b>Autoignition:</b>	475 °C	(Directive 92/69/EEC, A.15)
<b>Lower explosion limit:</b>	approx. 0.7 %(V)	Information applies to the solvent



**Upper explosion limit:** not determined

**Flammability:** Product is combustible.

**Self-ignition temperature:** approx. 491 °C

**Suitable extinguishing media:**

Water spray, foam, dry powder, carbon dioxide

**Hazards during fire-fighting:**

Carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons,

If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released if the product is involved in a fire.

**Protective equipment for fire-fighting:**

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

**Further information:**

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

**ACCIDENTAL RELEASE MEASURES:**

**Personal precautions:**

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions.

Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

**Environmental precautions:**

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

**Cleanup:**

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled

Substance/product should be recovered and applied according to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

## HANDLING AND STORAGE

### HANDLING

#### **General advice:**

Recommendations are for manufacturing, commercial blending, and packaging workers. Pesticide applicators & workers must refer to the Product Label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Ensure adequate ventilation. Provide good ventilation of working area (local exhaust ventilation if necessary). Keep away from sources of ignition - No smoking. Keep container tightly sealed

Protect contents from the effects of light. Protect against heat. Protect from air. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

#### **Protection against fire and explosion:**

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid all sources of ignition: heat, sparks, open flame. Sources of ignition should be kept well clear. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code. Ground all transfer equipment properly to prevent electrostatic discharge. Electrostatic discharge may cause ignition.

**Vapours may form ignitable mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear – fire extinguishers should be kept handy.**

### STORAGE

#### **General advice:**

Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame.

Protect containers from physical damage. Protect against contamination. The authority permits and storage regulations must be observed.



Keep away from heat. Protect from direct sunlight.

### **Storage incompatibility:**

General advice: Segregate from foods and animal feeds.

Segregate from incompatible substances. Segregate from foods and animal feeds. Segregate from textiles and similar materials.

### **Temperature tolerance**

Protect from temperatures below: 0 °C

The product can crystallize below the limit temperature.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

## **EXPOSURE CONIROLS/ PERSONAL PROTECTION:**

**Users of a pesticidal product should refer to the product label for personal protective equipment requirements.**

### **Components with occupational exposure limits**

naphthalene	OSHA ACGIH	PEL 10 ppm 50 mg/m <sup>3</sup> ;
Naphthalene, 1- methyl-	ACGIH	TWA value 10 ppm ; STEL value 15 ppm ; Skin Designation ; The substance can be absorbed through the skin.
Naphthalene, 2- methyl-	ACGIH	TWA value 0.5 ppm ; Skin Designation ; The substance can be absorbed through the skin.

### **Advice on system design:**

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment

### **Personal protective equipment**

**Recommendations for manufacturing, commercial blending, and packaging workers:**

#### **Respiratory protection:**

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) TC23C Chemical/Mechanical type filter system to remove a combination of particles, gas and vapours. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or



Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

**Hand protection:**

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

**Eye protection:**

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

**Body protection:**

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

**General safety and hygiene measures:**

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment.

Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs

**PHYSICAL AND CHEMICAL PROPERTIES:**

Form:	liquid	
Odour:	faint odour, aromatic	
Colour:	dark yellow	
pH value:	6.4	
solidification temperature:	approx. -17 °C	
onset of boiling:	approx. 180 °C	Information applies to the solvent
Vapour pressure:	approx. 0.053 hPa	(20°C) Information applies to the solvent.
Density:	1.05 g/cm <sup>3</sup>	( 20 °C)
	approx. 8.7627	( 68 °F)
	Lb/USg	



Vapour density:		not determined
Viscosity, dynamic:	8.8 mPa.s approx. 17.5 mPa.s	( 40 °C) ( 20 °C)
Viscosity, kinematic:	8.5 mm <sup>2</sup> /s	( 40 °C)
Solubility in water:		emulsifiable
Molar mass:	387.3 g/mol	

## STABILITY AND REACTIVITY:

### Conditions to avoid:

Avoid sources of ignition. Avoid electro-static discharge. Avoid direct sunlight.

### Substances to avoid:

Nitric Acid, Sulfuric acid, strong oxidizing agents, strong bases, strong acids.

### Hazardous reactions:

The product is chemically stable.

Hazardous polymerization will not occur. No hazardous reactions if stored and handled as prescribed/indicated.

No hazardous reactions if stored and handled as prescribed/indicated.

### Decomposition products:

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated., prolonged thermal loading can result in products of degradation being given off.

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

### Thermal decomposition:

Possible thermal decomposition products:

Carbon monoxide, carbon dioxide, nitrogen oxide, nitrogen dioxide, Hydrogen chloride, halogenated hydrocarbons, Hydrocarbons Stable at ambient temperature. If product is heated above decomposition temperature toxic vapours may be released.

### Oxidizing properties:

Not an oxidizer.

Not fire-propagating



## TOXICOLOGICAL INFORMATION:

### **Acute Toxicity**

#### **Oral:**

Type of value: LD50

Species: rat (female)

Value: 200 - 500 mg/kg

#### **Inhalation:**

Type of value: LC50

Species: rat

Value: 3.51 mg/l

Exposure time: 4 h

#### **Dermal:**

Type of value: LD50

Species: rat

Value: > 4,000 mg/kg

### **Irritation / corrosion**

#### **Skin:**

Species: rabbit

Result: moderately irritating

Method: Primary skin irritation test

#### **Eye:**

Species: rabbit

Result: moderately irritating

#### **Sensitization:**

Buehler test

Species: guinea pig

Result: Skin sensitizing effects were not observed in animal studies.

Method: OECD Guideline 406

### **Repeated dose toxicity**

Information on: Pyraclostrobin

Assessment of repeated dose toxicity:

After repeated exposure the prominent effect is local irritation. The substance may cause damage to the olfactory epithelium after repeated inhalation.

Information on: 2-ethylhexan-1-ol

Assessment of repeated dose toxicity:



Repeated exposure to high doses of the substance causes reversible liver changes in rodents. According to present knowledge, these effects do not occur in man.

May cause liver and kidney damage.

### **Genetic toxicity**

Information on: naphthalene

The substance was not mutagenic in bacteria. The substance was mutagenic in a mammalian cell culture test system. The substance was not mutagenic in a test with mammals. Literature data.

### **Carcinogenicity**

Information on: solvent naphtha

Long-term exposure to highly irritating concentrations resulted in skin tumors in animals. A carcinogenic effect in humans can be excluded after brief skin contact.

Information on: Naphthalene

Indication of possible carcinogenic effect in animal tests.

### **Other Information:**

Misuse can be harmful to health.

## **ECOLOGICAL INFORMATION:**

### **Fish**

Information on: pyraclostrobin

Acute:

Cyprinus carpio/LC50 (96 h): > 0.0121 - < 0.0258 mg/l

Lepomis macrochirus/LC50 (96 h): > 0.0196 - < 0.0335 mg/l

Oncorhynchus mykiss/LC50 (96 h): 0.00616 mg/l

### **Aquatic invertebrates**

Information on: pyraclostrobin

Acute:

Daphnia magna/EC50 (48 h): 0.0157 mg/l

### **Aquatic plants**

Information on: pyraclostrobin

Toxicity to aquatic plants:

green algae/EC50 (96 h): > 0.843 mg/l



## **Non-Mammals**

Information on: pyraclostrobin

Other terrestrial non-mammals:

bobwhite quail/LD50: > 2,000 mg/kg

bobwhite quail:

mallard duck/LC50: > 5,000 ppm

Honey bee/LD50: > 100 ug/bee

## **Environmental mobility:**

Information on: Pyraclostrobin

Assessment transport between environmental compartments:

Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

## **Other adverse effects:**

The ecological data given are those of the active ingredient. Do not release untreated into natural waters.

## **DISPOSAL CONSIDERATIONS:**

### **Waste disposal of substance:**

Pesticide wastes are regulated. Improper disposal of excess pesticide, spray mix or rinsate is a violation of federal law. If pesticide wastes cannot be disposed of according to label instructions, contact the State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

### **Container disposal:**

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

### **RCRA:**

This product is not regulated by RCRA.