TECHNICAL DATA BULLETIN

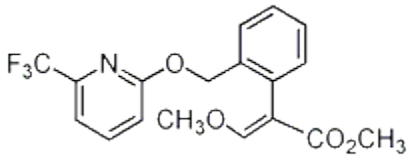
PICOXYSTROBIN TECHNICAL

1 INTRODUCTION

Picoxystrobin is a preventive and curative fungicide with unique distribution properties, including systemic (acropetal) and translaminar movement, diffusion in leaf waxes and molecular redistribution in air. Quinone outside Inhibitor. Inhibits mitochondrial respiration by blocking electron transfer at the Qo centre of cytochrome bc1.

2 ACTIVE INGREDIENT

Common name	:	Picoxystrobin
IUPAC name	:	methyl (*E*)-3-methoxy-2-[2-(6-trifluoromethyl-2-pyridyloxymethyl)phenyl]acrylate
Chemical Abstracts name	:	methyl (*E*)-(α)-(methoxymethylene)-2-[[[6-(trifluoromethyl)-2-pyridinyl]oxy]methyl]benzeneacetate
CAS No	:	117428–22–5
Empirical formula	:	$C_{18}H_{16}F_3NO_4$
Molecular weight	:	367.3
Structural formula		



3 PHYSICOCHEMICAL PROPERTIES

Technical Purity	:	>95% w/w Min.
Appearance	:	Colourless powder; (tech. is a solid, with creamy colour).
Melting Point	:	75 °C
Density	:	1.4 (20 °C)
Vapour Pressure	:	5.5×10^{-3} mPa (20 °C)
Partition co-efficient	:	logP = 3.6 (20 °C)
Solubility in water	:	3.1 mg/l (20 °C).

Solubility in solvents	:	In methanol 96, 1,2-dichloroethane, acetone, xylene and ethyl acetate >250 (all in g/l, 20 °C).
Stability	:	Stable at pH 5 and pH 7; DT_{50} *c.* 15 d (pH 9, 50 °C

4 APPLICATIONS

Biochemistry:
Quinone outside Inhibitor. Inhibits mitochondrial respiration by blocking electron transfer at the Qo centre of cytochrome bc1.

Mode of action:
Preventive and curative fungicide with unique distribution properties, including systemic (acropetal) and translaminar movement, diffusion in leaf waxes and molecular redistribution in air.

Uses:
For broad-spectrum disease control, including *Mycosphaerella graminicola*, *Phaeosphaeria nodorum*, *Puccinia recondita* (brown rust), *Helminthosporium tritici-repentis* (tan spot) and *Blumeria graminis* f.sp. *tritici* (strobilurin-sensitive powdery mildew) in wheat; *Helminthosporium teres* (net blotch), *Rhynchosporium secalis*, *Puccinia hordei* (brown rust) and *Erysiphe graminis* f.sp. *hordei* (strobilurin-sensitive powdery mildew) in barley; *Puccinia coronata* and *Helminthosporium avenae* in oats; and *Puccinia recondita* and *Rhynchosporium secalis* in rye. Application rate typically 250 g/ha.

Formulation types:
SC

5. TOXICITY

Oral: Acute oral LD_{50} for rats >5000 mg/kg.

Skin and eye: Acute percutaneous LD_{50} (24 h) for rats >2000 mg/kg.

Inhalation: LC_{50} (4 h) for rats >2.12 mg/l.

NOEL: NOAEL (1 y and 90 d) for dogs 4.3 mg/kg b.w. daily.

ADI: 00.04 mg/kg b.w.

6. ECOTOXICITY

Birds: Dietary LC_{50} (5 d) for bobwhite quail >2250 mg/kg. Dietary LD_{50} (8 d) for bobwhite quail >5200 mg/kg. NOEC (21 w) for mallard ducks 1350 mg/kg.

Fish: LC_{50} (96 h) (two species) 65–75 µg/l.

Daphnia: EC_{50} (48 h) 18 µg/l.

Algae: EC_{50} (72 h) for *Selenastrum capricornutum* 56 µg/l

Bees: LD_{50} 48 h, contact and oral) >200 µg/bee.

Worms: LC_{50} (14 d) for *Eisenia foetida* 6.7 mg/kg soil

7 ENVIRONMENTAL FATE

Animals: In rats, well absorbed, extensively metabolised and rapidly eliminated. Metabolism proceeds mainly by ester hydrolysis and glucuronide conjugation. Does not accumulate in meat or milk.

Plants:
Residues in cereals are low (<0.01–0.20 mg/kg).

Soil/Environment:
Rapidly degraded in soils, with CO_2 as the major product; lab. DT_{50} (aerobic) 19–33 d; field dissipation DT_{50} 3–35 d. Not mobile in soil under field conditions; K_{oc} 790–1200 ml/g. Rapid dissipation in water indicates no chronic issues for aquatic organisms; water phase DT_{50} 7–15 d (lab. and outdoor water sediment systems).

8. HANDLING & STORAGE

Handling:
Keep away from food, drink, and animal feedstuff. KEEP OUT OF REACH OF CHILDREN. Wear suitable Personal protective equipment when handling and spraying.

Storage:
Store in the original container in a dry, cool, ventilated, LOCKED area. DO NOT store in prolonged sunlight. DO NOT store with food, seed, or animal feedstuff.

9. DISPOSAL CONSIDERATIONS

Packages or surplus material & washing from the machines & containers should be disposed of in a safe manner so as to prevent environmental water pollution.The used packages shall not be left outside to prevent their re-use.Packages shall be broken & buried away from habitation.