

# CHLORFLUAZURON

Insect growth regulator

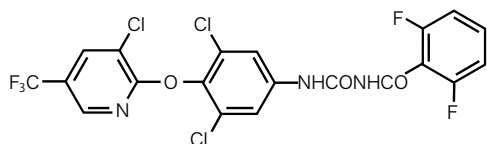
Chlorfluazuron is one of the leading compounds in the benzoylphenylurea IGR insecticides. This compound, discovered and developed by ISK was launched in the late 1980's. Since then, Chlorfluazuron has been globally used under the trademark of Atabron for mainly controlling *Lepidoptera* on cotton, bean, vegetables and fruit trees, etc.

Chlorfluazuron is an insect growth regulator inhibiting chitin synthesis and can give a good control of various pest insects, especially *Lepidoptera*, at low dose rate.

Chlorfluazuron has very little negative impact on natural enemies and pollinator insects, and can be used in integrated pest management programs.

## Physico-Chemical Properties

Chemical structure



Class : benzoylurea

IUPAC name : 1-[3,5-dichloro-4-(3-chloro-5-trifluoromethyl-2-pyridyloxy)phenyl]-3-(2,6-difluorobenzoyl)urea

Molecular weight : 540.7

Molecular formula : C<sub>20</sub>H<sub>9</sub>Cl<sub>3</sub>F<sub>5</sub>N<sub>3</sub>O<sub>3</sub>

Vapour pressure : 1.559×10<sup>-3</sup> mPa (20 °C)

Water solubility : 0.012 mg/L (20 °C)

Form : White crystals

Development code : IKI-7899



## The efficacy of Chlorfluazuron on DBM (7 days after application)



Untreated



Chlorfluazuron 1 L/ha (50 g a.i./ha)



## Application

Control of *Heliothis*, *Spodoptera*, *Bemisia tabaci* and other chewing insects on cotton; and *Plutella*, Thrips and other chewing insects on vegetables. Also used on fruit, potatoes, ornamentals and tea.

Application rate : 10 -50 g a.i./ha

## Mode of Action

Chlorfluazuron, which acts as an anti-molting agent, inhibits biosynthesis of chitin of an important constituent in insect cuticle, loses cuticle elasticity and firmness, and results in abortive molting.

## Characteristics

Chitin synthesis inhibitor

Interrupts insect molting and growth

Active against larval stages of a broad spectrum of *Lepidopteran* insects

Active against certain *Coleoptera*, *Hymenoptera*, *Diptera* and *Orthoptera*

Stomach toxin - active through ingestion

Effective at low rates (10-50 g a.i./ha)

Easy to use (liquid formulation)

Safe to beneficial insects

## Toxicology & Ecotoxicology

Rat LD<sub>50</sub> oral : >8500 mg/kg (m/f)

Rat LD<sub>50</sub> dermal : >1000 mg/kg (m/f)

Rat LC<sub>50</sub> inhalation : >2.4 mg/L (4 h) (m/f)

Skin irritation : non irritant

Eye irritation : mild eye irritant (rabbits)

Skin sensitization : not a sensitizer

Birds :

Acute oral : LD<sub>50</sub> (quail and mallard ducks) >2510 mg/kg

Fish : LC<sub>50</sub> : (bluegill, 96 h) 1071 mg/L

Bees : LD<sub>50</sub> : (oral) >100 µg/bee

*Daphnia magna* : EC<sub>50</sub> (48 h) 0.908 µg/L



ISHIHARA SANGYO KAISHA, LTD.

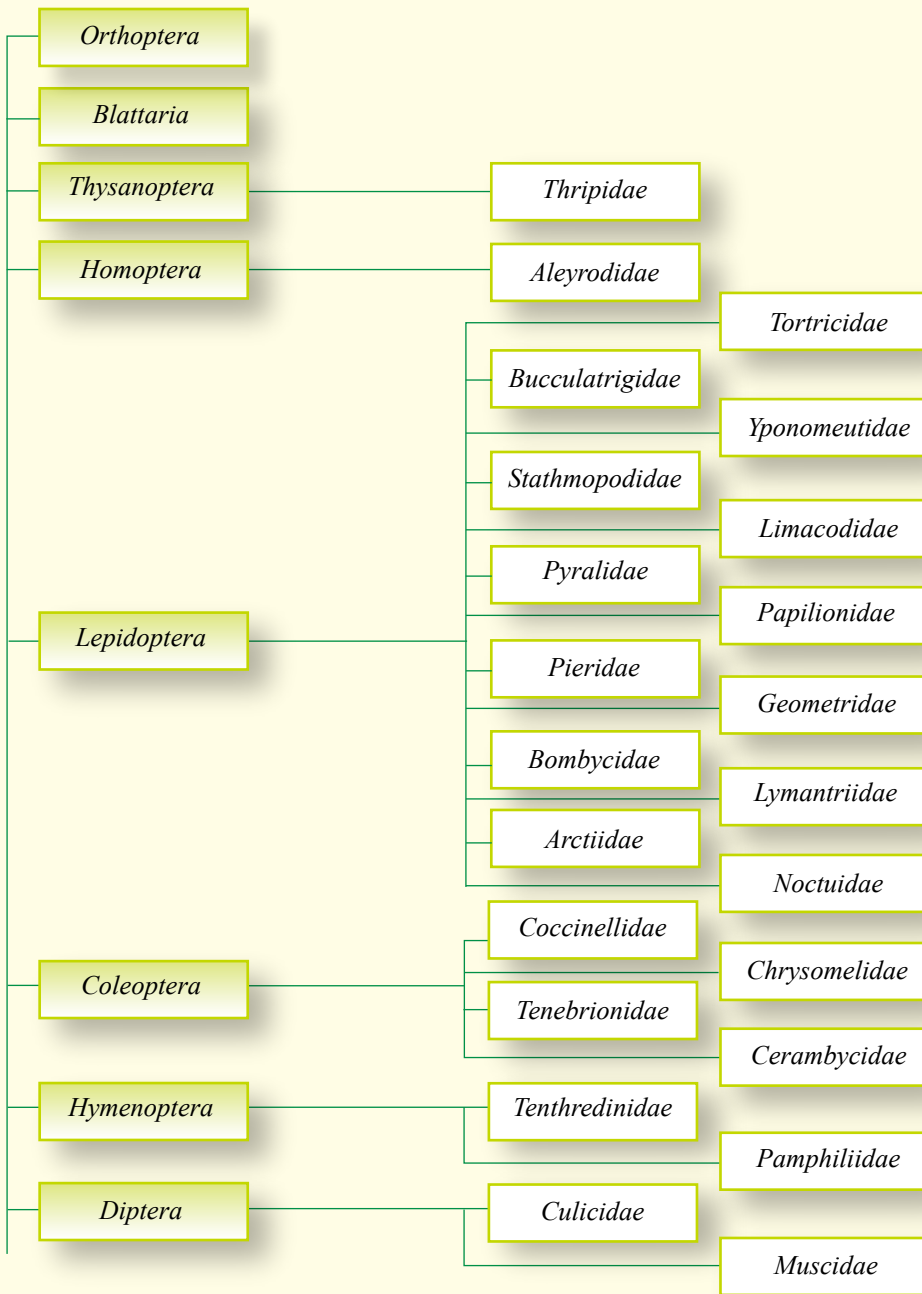
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## Spectrum



## Product

Trade names	Countries
<b>ATABRON</b>	<b>Spain, Hungary, Kazakhstan, Romania, Turkey, Israel, Egypt, Peru, Colombia, Brazil, Ecuador, Venezuela, Uruguay, Barbados, South Korea, Thailand, Malaysia, Viet Nam, Philippines, Indonesia, Pakistan, Sri Lanka, Japan</b>
<b>ISHIPRON</b>	<b>Argentina, Bolivia</b>
<b>愛扶農</b>	<b>Taiwan</b>
<b>抑太保</b>	<b>China</b>

● Formulation types: 5EC; 10SC.