

TO CAUSE A HAZARD IN THE USE, STORAGE OR DISPOSAL OF THIS SUBSTANCE IS AN OFFENCE

PRECAUTIONS:

1. Handle with care; avoid any contact, poisonous by swallowing or inhalation.
2. Do not eat, drink or smoke while mixing, applying, handling or before washing hands and face.
3. **WEAR PROTECTIVE CLOTHING**, i.e. overalls, rubber gloves, and rubber boots and a facemask while mixing, spraying and cleaning up.
4. Risk of serious damage to eyes.
5. Do not inhale mist or spray against the wind.
6. Remove protective clothing on completion of spraying, wash thoroughly with soap and water, and wash contaminated clothing daily.
7. Clean applicator after use, dispose of wash water where it will not contaminate crops, grazing, rivers and dams.
8. **KEEP OUT OF REACH OF CHILDREN, UNINFORMED PERSONS AND ANIMALS.**
9. **KEEP APART FROM FOOD AND FOODSTUFFS.**
10. **STORE IN A COOL, DRY PLACE AWAY FROM FOOD AND FEEDSTUFFS IN ORIGINAL CONTAINER, KEEP UNDER LOCK AND KEY.**
11. **TOXIC TO FISH AND WILDLIFE. DO NOT CONTAMINATE DRINKING POOLS, DAMS, RIVERS AND WATERWAYS.**
12. **HARMFUL TO BEES** - do not spray flowering crops with Thunder during foraging activity of honey bees.
13. **SPILLAGE** - Use protective clothing when dealing with spillages. Prevent entry into drains, water or soil. Soak up spilled product with absorbent material such as dry soil, sawdust or sand and place into a labelled closable container for safe disposal. Use damp cloth to clean the floor and contaminated parts. Place used cleaning materials into closable container for safe disposal. Bury container in a disposable pit away from water sources or arable land.
14. **CONTAINER DISPOSAL** - Triple rinse container emptying washings into spray tank and spray onto crop. Perforate and flatten rinsed container to make it unusable or burn it and bury crushed container or ashes in a recommended disposal pit in a secure location away from water sources or arable land. Do not use empty container for any other purpose.
15. **RE-ENTRY:** Do not enter treated area within one day after treatment unless wearing protective clothing.

SYMPTOMS OF POISONING:

Systemic: Discomfort in the chest, tachycardia, hypotension, nausea, abdominal pain, diarrhoea, vomiting, dizziness, blurred vision, headache, anorexia, somnolence, coma, convulsions, tremors and prostration.

FIRST AID:

1. Remove patient from source of poisoning and remove contaminated clothing.
2. If skin is contaminated, wash affected areas of skin thoroughly with soap and water.
3. If eyes are contaminated, flush well with clean water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
4. If swallowed, do not induce vomiting. Wash mouth with water. Seek medical advice immediately.
5. Show container with label to attending doctor.

NOTE TO PHYSICIAN:

Treatment: No specific antidote is known for imidacloprid and beta-cyfluthrin active ingredients. Systemic treatment: Symptomatic treatment. Monitor respiratory and cardiac functions. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Keep respiratory tract clear. Give oxygen or artificial respiration if needed. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. If not effective, phenobarbital may be used. Contraindications: Atropine, derivatives of adrenaline. Recovery is spontaneous and without sequelae.



THUNDER

Reg. No. 11-D-121-7-D-142-50

CONTENTS: 1 L

CAUTION

HARMFUL IF SWALLOWED

COMPOSITION:	MASS/VOLUME
imidacloprid	100 g/l
beta-cyfluthrin	45 g/l
inert ingredients	855 g/l

Chemical Group : Imidacloprid – Chloro-nicotinyl
Beta-cyfluthrin – Pyrethroid

**A FOLIAR APPLIED INSECTICIDE FOR USE IN TOBACCO,
ORNAMENTALS, VEGETABLES, WHEAT AND BARLEY AGAINST
VARIOUS SUCKING AND CHEWING
INSECT PESTS.**

**SHAKE WELL
BEFORE USE**



HARMFUL



DIRECTIONS FOR USE: USE ONLY AS DIRECTED.

General Information: **Thunder** is an insecticide combination product of two active ingredients – imidacloprid, (a chloro-nicotinyl compound) and beta-cyfluthrin (a pyrethroid compound). Imidacloprid acts as an acute contact and stomach poison. It has excellent systemic properties and a significant residual activity. Imidacloprid has a broad spectrum of activity, particularly against sucking insects such as aphids, leafhoppers, thrips, leaf miners and white flies and provides additional control of bean fly on a wide range of crops.

Beta-cyfluthrin is a non systemic insecticide with contact and stomach action. It has a rapid knock-down effect and long lasting residual activity. Beta-cyfluthrin has a broad spectrum of activity against numerous species of chewing (biting) insect pests in particular lepidopterous insects like *Heliothis* spp., *Spodoptera* spp., *Earias* spp. and others. It also provides good control of aphids and some beetle species and their larvae. The mode of action of **Thunder** combines the highly systemic and contact action of imidacloprid and the stomach and contact action of beta-cyfluthrin.

This combined mode of action is highly advantageous in an infestation situation with insects of different feeding habits (sucking and chewing) occurring at the same time or at different times.

NOTE: Shake the product container well before use.

Crop tolerance: Thunder is well tolerated by crops listed on the label when used as recommended.

Note: As the different species and varieties of flowers/ornamentals may differ in their sensitivity to chemical spray, users are advised always to check for crop compatibility by firstly treating a few plants before large scale application is undertaken.

Mixing: Half fill the spray tank with clean water. Shake the product container and add the required quantity of **Thunder** to the water in the tank with the agitation system in operation, then top up with clean water to the required volume. Continue agitation at all times during mixing, spraying and stoppages until the tank is completely empty. Spray immediately after mixing.

Resistance strategy: In context with resistance prevention strategies, the product should be used within spray programmes i.e. alternating with registered insecticides of other chemical groups with different modes of action.

WARRANTY: Although this remedy has been extensively tested under a large variety of conditions, the registration holder does not warrant that it will be efficacious under all conditions because the action and effect thereof may be affected by factors such as abnormal soil, climatic and storage conditions, quality of dilution water, compatibility with other substances not indicated on the label and the occurrence of resistance of the pests to the remedy concerned as well as by the method, time and accuracy of application. The registration holder furthermore does not accept responsibility for damage to crops, vegetation, the environment or harm to man or animal or for lack of performance of the remedy concerned due to failure of the user to follow the label instructions or to the occurrence of conditions which could not have been foreseen in terms of the registration. Consult the supplier in the event of any uncertainty.

Packed For: Bayer Zimbabwe (Pvt) Ltd
P.O. Box AY 78, Amby, Harare, Zimbabwe.
Tel. 487211/487245/7 Fax. 487242
IN CASE OF POISONING PLEASE PHONE: +27 (21) 931-6129
Manufactured by Bayer CropScience AG, Germany

Thunder® is a registered trademark of Bayer CropScience AG, Germany.

Batch No.: See on pack
Date of Manufacture: See on pack



Bayer CropScience

ZM/ZW/MLW/1011/Thunder 1L/Full Text Label
Code: 80262736B



**CYB+IMD OD 45+100 G****U-CI**

1/7

Version 1 / D
102000011697Revision Date: 15.03.2005
Print Date: 18.03.2005

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Trade name	CYB+IMD OD 45+100 G	U-CI
Product code (UVP)	06365574	
Usage	insecticide	
Company	Bayer CropScience AG Alfred-Nobel-Straße 50 40789 Monheim Germany	
Telephone	+49(0)69-305-5748	
Telefax	+49(0)69-305-80950	
Responsible Department	Material and Transport Safety Management +49(0)69-305-82369/12588	

Emergency telephone number +49(0)2133-51-4233 (Sicherheitszentrale Dormagen, Bayer AG)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

Oil dispersion (OD)
Beta-Cyfluthrin 45 g/l + Imidacloprid 100 g/l

Hazardous components

Chemical Name	CAS-No. / EINECS-No.	Symbol(s)	R-phrases	Concentration [%]
beta-Cyfluthrin	68359-37-5 269-855-7	T+, N	R26/28, R50/53	4,60
Imidacloprid	138261-41-3	Xn	R22, R52	10,20
Cyclohexanone	108-94-1 203-631-1	Xn	R10, R20	7,50
2-Ethylhexanol propylene ethyleneglycol ether	64366-70-7	Xn	R20, R52/53	19,80
Alkylaryl sulfonate		Xi	R38, R41	> 3,00 - < 6,00
2-Ethylhexanole	104-76-7 203-234-3	Xi	R36/38	> 3,00 - < 6,00
Ethoxylated alcohol		Xn	R22, R38, R41	> 1,00 - <= 3,00

3. HAZARDS IDENTIFICATION

Risk advice to man and the environment

Harmful by inhalation and if swallowed.
Risk of serious damage to eyes.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**CYB+IMD OD 45+100 G****U-CI**

2/7

Version 1 / D
102000011697Revision Date: 15.03.2005
Print Date: 18.03.2005

4. FIRST AID MEASURES

General advice

Move out of dangerous area. If the patient is likely to become unconscious, place and transport in stable sideways position. Remove soiled or soaked clothing immediately. Also heed the risks to your own person.

Inhalation

Remove to fresh air. Keep patient warm and at rest. Call a physician immediately.

Skin contact

Wash off immediately with soap and plenty of water. After skin contact: Apply Vitamin E cream or simple toilet milks.

Eye contact

In case of contact with eyes rinse thoroughly with water. Call a physician immediately.

Ingestion

Do not induce vomiting. Wash out mouth with water. Call a physician immediately.

Notes to Physician**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).

Risks

This product/preparation contains a pyrethroid.
Must NOT be confused with organophosphorus compounds!

Treatment

Systemic treatment:
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 (h(a)emoperfusion)
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.
There is no specific antidote.
Contraindication: atropine.
Contraindication: derivatives of adrenaline.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

water spray
carbon dioxide (CO₂)
foam
sand

Specific hazards during fire fighting

In the event of fire the following can be released:
hydrogen chloride (HCl)
hydrogen cyanide (hydrocyanic acid)
hydrogen fluoride

**CYB+IMD OD 45+100 G****U-CI**

3/7

Version 1 / D
102000011697Revision Date: 15.03.2005
Print Date: 18.03.2005carbon monoxide (CO)
nitrous gases (NO_x)**Special protective equipment for fire-fighters**In the event of fire and/or explosion do not breathe fumes.
Use breathing apparatus.**Further information**Contain the spread of the fire-fighting media.
Do not allow run-off from fire fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES**Personal Precautions**Avoid contact with spilled product or contaminated surfaces.
Wear personal protective equipment. Unprotected persons must be kept away.**Environmental Precautions**

Do not discharge into the drains/surface water/groundwater.

Methods for Cleaning UpTake up with absorbent material (e.g. sand, earth or a proprietary absorbent material).
Clean contaminated floors and objects thoroughly, observing environmental regulations.
Pack spilled material in suitable containers for recovery or disposal.**Additional Advice**Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

7. HANDLING AND STORAGE**Handling**Advice on safe handling
Use only in area provided with appropriate exhaust ventilation.**Storage**Requirements for storage areas and containers
Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Store in a place accessible by authorized persons only.Advice on common storage
Keep away from food, drink and animal feedingstuffs.

German storage class 10 Combustible liquids neither in Storage Class 3A nor 3B

Storage stability
Other data The storage temperature should not exceed 50 °C.Suitable materials
Only use containers that are approved specifically for the substance/product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Personal protective equipment**

**CYB+IMD OD 45+100 G****U-CI**

4/7

Version 1 / D
102000011697Revision Date: 15.03.2005
Print Date: 18.03.2005

Respiratory Protection	If product is handled while not enclosed, and if skin contact may occur: Full mask Multi-range filter ABEK/P2
Hand Protection	solvent-resistant gloves
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands immediately after work, if necessary take a shower. Remove soiled or soaked clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	dispersion
Colour	white
Odour	characteristic

Safety data

pH	5 - 8 at 1 %
Flash Point	72 °C
Density	ca. 0,98 g/cm ³ at 20 °C
Water Solubility	miscible

10. STABILITY AND REACTIVITY

Hazardous Reactions	No hazardous reactions when stored and handled according to prescribed instructions.
---------------------	--

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity	LD50 (rat) 500 mg/kg
Acute Inhalation Toxicity	LC50 (rat) 1,977 mg/l Exposure time: 4 h (as aerosol)
Acute Dermal Toxicity	LD50 (rat) > 4.000 mg/kg
Skin Irritation	non-irritant (rabbit)
Eye Irritation	Risk of serious damage to eyes. (rabbit)

**CYB+IMD OD 45+100 G****U-CI**

5/7

Version 1 / D
102000011697Revision Date: 15.03.2005
Print Date: 18.03.2005

Sensitization	Non-sensitizing (guinea pig) OECD 406, Buehler test
---------------	--

12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to Fish	LC50 (Rainbow trout (<i>Oncorhynchus mykiss</i>)) 211 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient imidacloprid.
Toxicity to Fish	LC50 (Rainbow trout (<i>Oncorhynchus mykiss</i>)) 0,000068 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient beta-cyfluthrin.
Toxicity to daphnia	EC0 (Water flea (<i>Daphnia magna</i>)) 85 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient imidacloprid.
Toxicity to daphnia	EC50 (Water flea (<i>Daphnia magna</i>)) 0,00029 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient beta-cyfluthrin.
Toxicity to algae	IC50 (<i>Pseudokirchneriella subcapitata</i>) > 100 mg/l Growth rate Exposure time: 72 h The value mentioned relates to the active ingredient imidacloprid.
Toxicity to algae	IC50 (<i>Desmodesmus subspicatus</i>) > 0,010 mg/l Growth rate Exposure time: 72 h The value mentioned relates to the active ingredient beta-cyfluthrin. No acute toxicity was observed at its limit of water solubility.

13. DISPOSAL CONSIDERATIONS**Product**

Dispose of by incineration in an authorised special waste incineration plant. Comply with local legislation.

For larger quantities contact manufacturer.

Waste key for the unused product

020108 agrochemical waste containing dangerous substances

14. TRANSPORT INFORMATION**ADR/RID/ADNR**

UN-No	3352
Labels	6.1
Packaging group	III
Hazard no.	60
Description of the goods	UN 3352 PYRETHROID PESTICIDE, LIQUID, TOXIC (BETA-CYFLUTHRIN)

**CYB+IMD OD 45+100 G****U-CI**

6/7

Version 1 / D
102000011697Revision Date: 15.03.2005
Print Date: 18.03.2005**IMDG**

UN-No	3352
Class	6.1
Packaging group	III
EmS	F-A , S-A
Description of the goods	PYRETHROID PESTICIDE, LIQUID, TOXIC (BETA-CYFLUTHRIN)

IATA

UN-No	3352
Class	6.1
Packaging group	III
Description of the goods	PYRETHROID PESTICIDE, LIQUID, TOXIC (BETA-CYFLUTHRIN)

15. REGULATORY INFORMATION

Classification and labelling in accordance with the EC Directive on dangerous preparations 1999/45/EC as amended.

Classification:

Labelling according to EEC Directive

Hazardous components which must be listed on the label:

- beta-Cyfluthrin
- Imidacloprid

Symbol(s)

Xn	Harmful
N	Dangerous for the environment

R-phrase(s)

R20/22	Harmful by inhalation and if swallowed.
R41	Risk of serious damage to eyes.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S35	This material and its container must be disposed of in a safe way.
S39	Wear eye/face protection.
S57	Use appropriate container to avoid environmental contamination.

Exceptional labelling

To avoid risks to man and the environment, comply with the instructions for use.

Further information

WHO-classification: II (Moderately hazardous)

National legislation

Risk classification according to BetrSichV (Germany)	Not subject to the regulations on combustible liquids.
Water contamination class (Germany)	WGK 2 water endangering

**CYB+IMD OD 45+100 G****U-CI**

717

Version 1 / D
102000011697Revision Date: 15.03.2005
Print Date: 18.03.2005Major Accident Hazard
LegislationSubjected to the "Disasters and Major Accidents Act "
Annex I, list of dangerous substances, No. 9b

Other regulations

BG Leaflet M004 "Irritant substances / Corrosive substances"

BG Leaflet M050 "Handling of Hazardous Substances"

BG Leaflet M053 "General Protective Measures for the handling of hazardous substances"

16. OTHER INFORMATION

Further information

Text of R phrases mentioned in Section 2:

R10	Flammable.
R20	Harmful by inhalation.
R22	Harmful if swallowed.
R26/28	Very toxic by inhalation and if swallowed.
R36/38	Irritating to eyes and skin.
R38	Irritating to skin.
R41	Risk of serious damage to eyes.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52	Harmful to aquatic organisms.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

For further information on active ingredients see also: Wirkstoffe in Pflanzenschutz- und Schädlingsbekämpfungsmitteln: physikalisch-chemische und toxikologische Daten IVA, Industrieverb. Agrar e.V. - 3., neubearb. Aufl. - München; Wien; Zürich; BLV Verl.-Ges.mbH, 2000 ISBN 3-405-15809-5

The advice on classification in section 15 of this Safety Data Sheet is based on European Directive on Preparations (1999/45/EC and its subsequent adaptations). The legislation on pesticide preparations should be applied by EU Member States not later than 30 July 2004.

The information given in this Data Sheet has been included in accordance with the guidelines established by EC Directive 1991/155/EC as amended. This data sheet complements the user's instructions, but does not replace them. The information it contains is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. The required information complies with current EEC legislation. Addressees are requested to observe any additional national requirements.

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products described or their suitability for a particular application.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.