

ACTELIC D**PRODUCT USE****SUMMARY OF INFORMATION**

FORMULATION & ACTIVE INGREDIENT: ACTELIC D is an emulsifiable concentrate formulation containing 250 g/l (26.3% w/w) pirimiphos-methyl, solvent naphtha (petroleum) and light aromatics.

MAPP NUMBER: 10509.

PACK SIZE: 1 litre.

TARGETS: A broad spectrum insecticide for use in grain stores and related industrial outlets.

PRACTICAL NOTES:

USE	MAXIMUM INDIVIDUAL DOSE	MAXIMUM TOTAL DOSE OR MAXIMUM NUMBER OF APPLICATIONS
Treatment of structural surfaces	400 ml per 100 square metres	Two per batch of grain
Complete or surface admixture	16 ml product per tonne grain	One per batch of grain

CHANGES FOR 2004: Withdrawal of hand-held spraying equipment for admixture use.

FOR USE ONLY AS: AN INSECTICIDE IN FOOD STORAGE PRACTICE.

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COMPATIBILITY

No compatibilities available for this product.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be carefully read in order to obtain safe and successful use of this product.

PESTS CONTROLLED

ACTELLIC D controls the following pests of stored grain: Saw-toothed grain beetle (*Oryzaephilus surinamensis*), Grain weevil (*Sitophilus granarius*), Common flour mite (*Acarus siro*), Warehouse moth (*Ephestia elutella*), Flour or Mill moth (*Ephestia kuehniella*) Flour beetles (*Tribolium spp.*), Rust-red grain beetle (*Cryptolestes ferrugineus*) and Cosmopolitan food mite (*Glycyphagus destructor*).

TREATMENT OF STRUCTURAL SURFACES

(Grain storage premises, equipment and transportation e.g. ship's holds)

Timing: For grain stores and equipment treat well before harvest in late spring or early summer. In heavily infested premises, repeat six weeks later or just before harvest. For best results treat when the store is empty and when pests are most active. Ship's holds should be treated at least a week before loading if possible.

RATE OF USE

Maximum individual dose: 400 ml per 100 square metres.

Maximum number of treatments: Two per batch of grain.

Other specific restrictions: The maximum concentration must not exceed 400 ml product/2.5 litres water.

Preparation: The grain store, equipment or holding areas should be thoroughly cleaned before treatment by careful sweeping or by use of a suitable vacuum cleaner. Remove and dispose of all debris and sweepings that might harbour insects or mites.

Treatment: Use a suitable sprayer (e.g. knapsack sprayer, mistblower etc.) to spray all surfaces, including the roof and floor. Concentrate particularly on crevices and dead spaces around equipment. For the control of mites and insects in places inaccessible to sprayers use an ACTELLIC Smoke Generator, as directed, having previously sprayed all accessible areas.

USE/LOCATION	INSTRUCTIONS
Structural Surfaces	See above for additional information.
Empty grain stores	Spray all walls, floors and ceilings. Spray all grain handling equipment and storage bins. Ensure thorough coverage. Use 200 ml product in 2.5 to 15 litres of water per 100 square metres of surface. Adjust water volumes according to the type of surface being treated and spray to the point of 'run-off' – see 'Note 7' below for guidance on water volumes. Repeat treatment if necessary.
Ship's Holds	Use 200 ml product in 2.5 to 15 litres of water per 100 square metres of surface. Adjust water volumes according to the type of surface being treated and spray to the point of 'run-off' – see 'Note 7' below for guidance on water volumes.

COMPLETE ADMIXTURE

(Wheat, barley, oats)

Preparation: For best results the store should be thoroughly cleaned before the grain is added – see Treatment of Structural Surfaces above.

Timing: Grain should be treated as soon as possible during storage. Ideally ACTELLIC D should be applied to the grain as it is loaded into store. However, moist and/or warm grain should be dried and/or cooled before treatment. Vigorous drying and cooling operations can reduce the effectiveness of treatment by causing degradation of the insecticide. Whenever such operations are necessary for grain going into longer term storage they should be conducted prior to treatment, ideally before the grain is loaded into its final storage place.

Moisture content: See 'Note 2'.

Curative treatment: Always inspect grain following application to ensure that control is complete.

SURFACE ADMIXTURE

(Wheat, barley, oats)

Preparation: Surface admixture will be effective only if the store is thoroughly cleaned and disinfested (as described above under Treatment of Structural Surfaces), and if the grain coming into store is free of insect or mite pests.

Treatment: Treat the surface layer of the grain bulk to a depth of at least 30–100 cm. This can be done by first part filling the store and levelling the bulk of untreated grain. Treat the remaining grain as it enters the store, distribute evenly over the bulk to create a treated layer.

Storage conditions: Care should be taken to ensure that the moisture content of the grain is kept low (see 'Note 2'), and that the bulk is kept cool. Any subsequent movement of the surface layer will reduce the effectiveness of treatment.

Surface admixture of ACTELLIC D is compatible with 'Integrated Pest Control' (IPC). Further details are available from specialist advisers or your local Syngenta Crop Protection adviser.

Important note: Surface admixture is recommended for use only where the above preparation, treatment and storage conditions can be achieved. The use of surface admixture under any other circumstances is at user's own risk.

USE	INSTRUCTIONS
Complete or Surface Admixture	Ensure good spray coverage of the grain or seed. Adjust the conveyor to produce a shallow, even flow of grain or seed at the point of application. Poor or uneven coverage may reduce the level of control. Establish the grain or seed carrying rate of the conveyor and ensure accurate calibration of application equipment. See above for additional information.
Wheat, barley and oats including barley for malting, milling wheat and seed	For a conveyor rate of 22.5-45 tonnes per hour: Apply 16 ml product in 0.75 litres of water per tonne through a medium/coarse type nozzle. For a conveyor rate of below 22.5 tonnes per hour: Apply 16 ml product in 1.5 litres of water per tonne. This can be achieved using an orifice plate (e.g. Teejet® orifice plate 4916 series).

INSECTICIDE

Wheat, barley, oats grains and seed:

Maximum individual dose: 16 ml product/tonne grain.

Maximum number of treatments: One per batch of grain.

Other specific restrictions: The maximum concentration must not exceed 16 ml product/0.75 litres water.

IMPORTANT NOTE

Where grain has been treated by admixture, it must be labelled as follows: **“THIS GRAIN HAS BEEN CHEMICALLY TREATED”**.

MIXING INSTRUCTIONS

Shake well before use. Half fill the spray tank with water and begin agitation. Add the required quantity of ACTELLIC D to the spray tank and complete filling. Maintain agitation during application and apply immediately.

APPLICATION

Apply using a suitable liquid applicator. DO NOT APPLY surface admixture or complete admixture using hand held equipment. Follow the manufacturer’s instructions and take care to minimise the risk of operator exposure. Consult your supplier or Syngenta Crop Protection UK Ltd for a list of application equipment suppliers.

AFTER USE

Empty application equipment and clean thoroughly after use.

Part used containers must be securely sealed and stored away from food, drink and animal feeding stuffs.

Do not re-use the container for any purpose.

NOTES:

1. Control can be reduced where strains of pest resistant to organophosphorus compounds develop. Strains of saw-toothed grain beetle and the flour mite resistant to organophosphorus compounds are widespread and resistant strains of red-rust flour beetles have also been found. Where strains resistant to organophosphorus compounds are present ACTELLIC D is unlikely to give satisfactory control of these pests.
2. For best results when using ACTELLIC D moisture contents should be maintained at or below the levels shown below :
 - Cereals – 15%

If the moisture content is higher the effectiveness of treatment and the period of protection can be reduced.

3. Insecticide treatments tend to work more slowly, and be less effective in cold conditions.
4. Moist grain coming into store should be dried and cooled before treatment with ACTELLIC D. Drying and cooling operations made after treatment can reduce the effectiveness of treatment.
5. Predatory mites (*Cheyletus*) are sometimes found in grain feeding on infestations of grain mites. They are not a pest species and do not harm grain, but their presence can cause rejection by buyers. Predatory mites can survive treatments of organophosphorus insecticides (e.g. ACTELLIC D) and are sometimes found after curative treatments to

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control heavy mite infestations. They will not remain for long after their food source has been removed, but grain should be inspected carefully before selling.

- 6. Handling grain treated with this product does not require the use of face and eye protection. However, dust from the grain itself has been known to cause irritation of eyes, throat, chest and skin and so when working with grain the use of eye protection and a dust mask is advisable.
- 7. Run-off on structural surfaces: In practice the actual amount of spray which can be applied to a surface without 'run-off' varies. For example, non-porous surfaces such as metal and painted wood are less absorbent than brick or unpainted wood. Use the following volumes as a guide:

Spray volume litres/100m ²	
Metal	2.5–5
Painted wood	2.5–5
Concrete	5
Plaster	5
Brick	7
Unpainted wood	15

SAFETY PRECAUTIONS

(a) Operator protection

- * Pirimiphos-methyl is an anticholinesterase organophosphorus compound. DO NOT USE if under medical advice NOT to work with such compounds.
- * Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:
Application as a grain mixture must only be made using automated application equipment.
- * Other engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:
- * WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate.

When applied as a structural treatment:

- * WEAR SUITABLE PROTECTIVE CLOTHING (IMPERMEABLE COVERALLS WITH IMPERMEABLE HOOD), SUITABLE PROTECTIVE GLOVES, RUBBER BOOTS, FACE PROTECTION (FACESHIELD) AND SUITABLE RESPIRATORY PROTECTIVE EQUIPMENT (filtering facepiece respirator to at least EN 149 FFP3, or equivalent) during application.

When applied as an admixture:

- * WEAR SUITABLE PROTECTIVE CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES when handling the treated grain and contaminated grain sowing equipment.
- * However engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

(b) Environmental Protection

- * Do not contaminate surface waters or ditches with chemical or used container.
- * Wildlife must be excluded from buildings during treatment.

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(c) Storage and disposal

RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of safely.

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.

* DO NOT RE-USE CONTAINER for any purpose.

ACTELIC D



HARMFUL



**DANGEROUS
FOR THE
ENVIRONMENT**

ACTELIC D is an emulsifiable concentrate formulation containing 250 g/litre (26.3 %w/w) pirimiphos-methyl, Solvent naphtha (petroleum) and light aromatics.

FLAMMABLE.

HARMFUL BY INHALATION.

**IRRITATING TO EYES, RESPIRATORY SYSTEM
AND SKIN.**

**HARMFUL. MAY CAUSE LUNG DAMAGE IF
SWALLOWED.**

**TOXIC TO AQUATIC ORGANISMS. MAY CAUSE
LONG-TERM ADVERSE EFFECTS IN THE
AQUATIC ENVIRONMENT.**

Keep out of reach of children.

When using do not eat, drink or smoke.

Keep away from food, drink and animal feeding stuffs.

This material and its container must be disposed of safely.

Use appropriate containment to avoid environmental contamination.

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

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

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THE (COSHH) CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH REGULATIONS MAY APPLY TO THE USE OF THIS PRODUCT AT WORK

COMPLIANCE WITH THE FOLLOWING CONDITIONS OF USE AND ALL PRECAUTIONS MARKED * IS A LEGAL REQUIREMENT

FOR USE ONLY AS AN INSECTICIDE IN FOOD STORAGE PRACTICE

*Pirimiphos-methyl is an anticholinesterase organophosphorus compound and must not be used by those under medical advice not to work with such compounds.

For use on wheat, barley, oats and structural surfaces

Crops/ situations	Maximum individual dose	Maximum number of treatments	Other specific restrictions
Structural treatment (empty grainin stores, equipment and transportation	400 millilitres product/100 square metres	Two per batch of grain	The maximum concentration must not exceed 400 millilitres product/2.5 litres water
Admixture: stored wheat, barley and oat grains and seed	16 millilitres product/ tonne grain	One per batch of grain	The maximum concentration must not exceed 16 millilitres product/0.75 litres water

READ ALL OTHER SAFETY PRECAUTIONS AND DIRECTIONS BEFORE USE.

I N S E C T I C I D E

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

IDENTIFICATION OF THE SUBSTANCE OR PREPARATION

Tradename **ACTELIC D**
 Design Code **YF6757C**
 AGI Code **1000175**

COMPANY / UNDERTAKING IDENTIFICATION

Company Syngenta Crop Protection UK Ltd
 Whittlesford, CAMBRIDGE, CB2 4QT
 Phone (01223) 833621
 Fax (01223) 493700
 Website www.syngenta-crop.co.uk

Emergency Phone 0044 (0)1484 538444 (24h)

2. COMPOSITION/INFORMATION ON INGREDIENTS

PRODUCT DESCRIPTION

An organophosphorus emulsifiable concentrate insecticide.

EEC-No.: 249-528-5 Pirimiphos-methyl

EEC-No. : 265-199-0 Solvent naphtha (petroleum), light aromatic

CAS-NO.	HAZARDOUS INGREDIENTS	CONCENTRATION (g/l)	HAZARD SYMBOLS	RISK PHRASES
29232-93-7	Pirimiphos-methyl	250	Xn,N	22, 50/53
64742-95-6	Solvent naphtha (petroleum), light aromatic	> 500	Xn,N	10, 20, 36/37/38, 51/53, 65
80-15-9	Cumene hydroperoxide	< 20	O, T, Xn, C, N	7, 21/22, 23, 34, 48/20/22, 51/53
9016-45-9	Alkylphenol ethoxylates	< 100	Xi	36, 53
68584-23-6	Dodecyl benzene sulphonate	< 100	Xi	10, 37/38, 41, 67

3. HAZARDS IDENTIFICATION

A mild cholinesterase inhibitor. Do not use if under medical advice not to use such compounds. Harmful: may cause lung damage if swallowed. Flammable. Harmful by inhalation. Irritating to eyes, respiratory system and skin. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

KEEP STRICTLY AT REST AS CONTINUED MOVEMENT ENHANCES THE EFFECT OF CHOLINESTERASE INHIBITION.

Eye contact: Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.

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Skin contact: Take off immediately all contaminated clothing. Wash skin immediately with water, followed by soap and water. Such action is essential to minimise contact with skin. Contaminated clothing should be laundered before re-issue.

Inhalation: Remove patient from exposure, keep warm and at rest. Obtain medical attention as a precaution.

Ingestion: If swallowed seek medical advice immediately and show the container, label or this Data Sheet, if possible. Do not induce vomiting.

MEDICAL ADVICE

Atropine is the specific antidote and may be given immediately by qualified staff, at a level of 2–5mg (intramuscularly), every 20 minutes until atropinisation occurs. Considerable amounts of atropine may be necessary. Atropine MUST NOT be given to cyanosed patients; administer oxygen first. DO NOT use opiates or barbiturates. If convulsions occur, administer diazepam (10mg intravenously). Take 10ml of venous blood for determination of blood cholinesterase activity. Cholinesterase reactivators (Pralidoxime) should, if possible, be given at the same time as atropine. They are not effective after 24 hours post exposure and are not substitutes for atropine.

DOSES: Pralidoxime;

Mild poisoning: 1g in 2-3ml water (intramuscularly).

Severe poisoning: 2g in 30ml water (intravenously).

Following ingestion, adsorbents such as charcoal may be of value. If gastric lavage or emesis is considered necessary for oil-based or corrosive formulations, inhalation of gastric contents must be prevented.

5. FIRE FIGHTING MEASURES

Flammable. Keep fire exposed containers cool by spraying with water.

Extinguishing media: For small fires, use foam, carbon dioxide or dry powder extinguishant. For large fires, use foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers.

Protective Equipment: A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Ensure suitable personal protection during removal of spillages. This means wearing a face mask that gives protection against organic vapours, eye protection, chemically resistant gloves, boots and coveralls.

Clean up methods: Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Wash the spillage area with water. Washings must be prevented from entering surface water drains.

Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

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7. HANDLING AND STORAGE

HANDLING

Read the label before use.

Avoid contact with skin and eyes. Do not breathe spray mist. When using do not eat, drink or smoke. Wash face and hands before eating, drinking or smoking.

STORAGE

Keep in original containers, tightly closed, out of reach of children. Keep away from heat and sources of ignition. Keep away from food, drink and animal feeding stuffs. Protect from frost.

Storage Life: Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS (OCCUPATIONAL EXPOSURE LIMITS)

Hazardous ingredients; Not applicable to field use

Pirimiphos-methyl 8 hr TWA; 3 mg/m³. (Syngenta Standard) Sk: Can be absorbed through skin.

Mixed Hydrocarbon Solvents OES/HSE 8 hr TWA; 150 mg/m³ (Manufacturer/Supplier's calculation)

PERSONAL PROTECTION

When using this product refer to the label for details.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid.
Colour:	Clear amber.
Odour:	Aromatic.
Boiling point:	Not available.
Melting point:	Not available.
Flash point:	53 °C
Autoignition temperature:	Not available.
Explosive properties:	Not applicable.
Vapour pressure:	Not available.
Density:	1.011 g/cm ³ at 20 °C
Solubility:	Miscible in/with water.
pH-value (quant.):	7.1 (aqueous solution 1%)
Partition coeff.:	Not available.
Viscosity:	5.26 mPas
Oxidizing properties:	Not applicable.

10. STABILITY AND REACTIVITY

Hazardous decomposition products: Combustion or thermal decomposition will evolve toxic and irritant vapours.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY (LETHAL DOSES)

Oral LD₅₀ rat (both genders): > 2000 mg/kg; Low oral toxicity.

The solvent(s) in this product may cause bronchopneumonia or pulmonary edema if aspirated into the respiratory system during ingestion or from vomiting.

Dermal LD₅₀ rat (both genders): > 4000 mg/kg; Unlikely to be hazardous by skin absorption.

Inhalation: Unlikely to cause harmful effects when handled and used as directed on the label.

ACUTE TOXICITY (IRRITATION, SENSITISATION, ETC.)

Eye Irritation: Moderate irritant to rabbit eyes.

Skin Irritation: Moderate irritant to rabbit skin.

Skin Sensitisation – Buehler: It is not a skin sensitiser in animal tests.

CHRONIC TOXICOLOGICAL EFFECTS / LONG TERM EXPOSURE

Long Term Exposure: No long-term risks to man are associated with the normal handling and use of this material.

12. ECOLOGICAL INFORMATION

ECOTOXICITY

This ecological assessment is calculated from data available on the components of the formulation.

Toxicity to fish: LC₅₀ rainbow trout; approx 2.5 mg/l. Toxic to fish.

13. DISPOSAL CONSIDERATIONS

Do not contaminate ponds, waterways or ditches with chemical or used containers. Surplus material must be disposed of as detailed in the 'Guidelines for the avoidance, limitation and disposal of pesticide waste on the farm' GCPF, 1987. Empty containers should be washed and discarded. Empty containers should not be used for other purposes. Disposal should be in accordance with local, state or national legislation.

14. TRANSPORT INFORMATION

RAIL / ROAD (RID / ADR)	Class	UN number	Packaging group
	3	1993	III
Proper Shipping Name	FLAMMABLE LIQUID, N.O.S., (contains substituted benzenoid hydrocarbons)		
SEA (IMDG-CODE)	Class	UN number	Packaging group
	3.3	1993	III
Proper Shipping Name	FLAMMABLE LIQUID, N.O.S., (contains substituted benzenoid hydrocarbons and pirimiphos-methyl 25%)		
Marine pollutant	Yes		
AIR (ICAO / IATA)	Class	UN number	Packaging group
	3	1993	III
Proper Shipping Name	FLAMMABLE LIQUID, N.O.S., (contains substituted benzenoid hydrocarbons and pirimiphos-methyl 25%)		

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15. REGULATORY INFORMATION

If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Hazard symbols /	Xn	HARMFUL
Classifications	N	DANGEROUS FOR THE ENVIRONMENT
Risk phrases (R)	10	Flammable.
	20	Harmful by inhalation.
	36/37/38	Irritating to eyes, respiratory system and skin.
	51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
	65	Harmful: may cause lung damage if swallowed.
Safety phrases (S)	2	Keep out of the reach of children.
	13	Keep away from food, drink and animal feeding stuffs.
	20/21	When using do not eat, drink or smoke.
	35	This material and its container must be disposed of in a safe way.
	57	Use appropriate containment to avoid environmental contamination.
	62	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
Special label		To avoid risks to man and the environment, comply with the instructions for use.

Users should ensure that they comply with any relevant local, state or national legislation.

16. OTHER INFORMATION

Always read the label. Use pesticides safely. Approval number; MAPP 10509.

HSDS version 7, last change date 19-APR-1998 with DPD update. Significant revision to sections 2, 3 & 15.

The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.