



# Torque<sup>®</sup>

**MITICIDE**

Active Constituent: 550 g/L FENBUTATIN OXIDE

Anti-freeze: 103 g/L MONOETHYLENE GLYCOL

GROUP **12A** INSECTICIDE

For the control of certain mites in fruit, hops and ornamentals  
as per the DIRECTIONS FOR USE table.

**FEATURES**

Rapid knockdown of existing mite populations. Product stable on foliage. Compatible with a wide range of insecticides.

**BENEFITS**

Ideal for use in IPM programmes. Provides control for several weeks without leaving harmful crop residues.

**MODE OF ACTION**

An organotin acaricide, TORQUE kills adults and nymphs. It acts more rapidly in hot weather than in cool weather. Treatment of light infestations is more effective than treatment of heavy infestations.

**PACK SIZES**

1 L, 5 L

<i>U.N. Number</i>	<i>Correct Shipping Name</i>	<i>Class</i>	<i>Subsidiary Risk</i>
Not Applicable	Not considered a Dangerous Good	Not Applicable	Not Applicable
<i>HAZCHEM Code</i>	<i>Poisons Schedule</i>	<i>Emergency Guide</i>	<i>Packaging Group</i>
Not Applicable	6	Not Applicable	Not Applicable

**POISON**  
**KEEP OUT OF REACH OF CHILDREN**  
**READ SAFETY DIRECTIONS BEFORE OPENING OR USING**



**MITICIDE**

Active Constituent: 550 g/L FENBUTATIN OXIDE  
Anti-freeze: 103 g/L MONOETHYLENE GLYCOL

**For the control of certain mites in fruit, hops and ornamentals  
as per the DIRECTIONS FOR USE table.**

**GENERAL INSTRUCTIONS**

**MODE OF ACTION**

This product kills adults and nymphs. It acts more rapidly in hot weather than in cool weather. Treatment of light infestations is more effective than treatment of heavy infestations.

**MIXING**

SHAKE CAN WELL BEFORE USE.

The product mixes readily with water. Partially fill the spray vat and with the agitation system operating, slowly add the required amount of TORQUE after adding any other spray materials. Top up the spray vat with water. The agitation system should be operated continuously until all the spray is applied. Sprays containing TORQUE should be applied within 3 hours of preparation.

**WETTING AGENTS**

When TORQUE is being applied at dilute volumes the addition of a wetting agent is unnecessary, but one can be added if required for other products in the spray. The addition of a wetting agent, such as MONSOON® at 30 mL/100 Litres, is recommended when TORQUE is applied at lower volumes to bananas and strawberries.

**APPLICATION**

**GENERAL: THOROUGH COVERAGE IS ESSENTIAL FOR MAXIMUM EFFECTIVENESS.**

Because TORQUE is highly repellent to mites, it drives many from sprayed to unsprayed zones within plants. Here some survive their limited contact with TORQUE and multiply to provide a source of re-infestation.

**CALCULATION OF SPRAY VOLUMES BASED ON PLANT ROW VOLUME**

**PLANT ROW VOLUME:**

The PLANT ROW VOLUME is calculated as follows:  
$$\text{PLANT ROW VOLUME} = 10 \text{ times (HEIGHT of PLANT in METRES) times (WIDTH of PLANT in METRES) divided by (BETWEEN ROW SPACE in METRES)}$$

**DILUTE SPRAY VOLUMES:**

The DILUTE SPRAY VOLUME in LITRES per HECTARE is calculated as follows:

$$\text{DILUTE SPRAY VOLUME} = \frac{\text{(PLANT ROW VOLUME)}}{\text{times (SPRAY VOLUME FACTOR)}}$$

Refer to the relevant crop instructions below for the appropriate SPRAY VOLUME FACTOR.

**DECIDUOUS FRUIT:** Apply only as a dilute spray. Apply with an air-blast sprayer calibrated to deliver the required spray volume based on PLANT ROW VOLUME and the following SPRAY VOLUME FACTORS:

- 100 for trees of low foliage density
- 125 for trees of moderate foliage density
- 150 for trees of high foliage density

The equipment should be adjusted so that the spray is evenly distributed throughout the trees.

The performance of TORQUE increases with the fineness of the spray. Preferably apply using a sprayer fitted with cone nozzles. If flat fan nozzles are used a minimum of 60 should be operated.

**CITRUS:** Apply only as a dilute spray. The spray equipment should be calibrated to deliver the required spray volume based on PLANT ROW VOLUME and the following SPRAY VOLUME FACTORS:

- 200 for trees of low foliage density
- 250 for trees of moderate foliage density
- 300 for trees of high foliage density

Citrus canopies are difficult to penetrate and application using an oscillating boom sprayer is preferred to application using an air-blast spray. If an air-blast sprayer is used, ensure that it is opening the canopy to permit entry of the spray to the interior of the tree. Spray equipment should be adjusted so that the spray is evenly distributed throughout the trees.

**STRAWBERRIES:** May be applied as a high to medium volume spray, depending on the rate of TORQUE that is applied. Irrespective of the spray volume and rate used, ensure that the spray thoroughly covers the undersides of all leaves. This can be achieved by adjustment of the proximity and direction of the spray nozzle(s) relative to the

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plants, combined with selection of a spray pressure that will move and expose the undersides of the leaves. Air-blast assistance is recommended for spray volumes between 400 and 1000 litres per hectare and is essential for spray volumes below 400 litres per hectare.

**BANANAS:** May be applied in 400 litres of water per hectare or more. Apply as a fine spray, preferably using a sprayer fitted with cone nozzles. Do NOT apply at volumes that produce excessive runoff.

**ORNAMENTALS:** Apply as a dilute spray. Use sufficient volume and direct the spray to ensure that the undersides of the leaves are thoroughly covered.

**HOPS:** Apply only as a dilute spray. Apply with an air-blast sprayer calibrated to deliver the required spray volume based on PLANT ROW VOLUME and a SPRAY VOLUME factor of 130 for vines in full leaf. The equipment should be adjusted so that the spray is evenly distributed throughout the vines. The performance of TORQUE increases with the fineness of the spray. Preferably apply with a sprayer fitted with cone nozzles.

**BIOLOGICAL CONTROL:** Recommendations for where biological control is being practised should only be followed if one or more of the following are established in the particular orchard; *Typhlodromus occidentalis*, *Typhlodromus pyri*, *Phytoseiulus persimilis*. If none of these predators is established, follow the recommendations for where biological control is not being practised.

#### COMPATIBILITY

**ALKALINE MATERIALS:** TORQUE is incompatible with alkaline materials.

**SPRAYING OILS:** Adding spraying oils to TORQUE can reduce speed of action. Where rapid speed of action is required do NOT mix spraying oils with TORQUE.

**FOLIAR FERTILISERS:** Do NOT mix with foliar fertilisers.

**2-WAY MIXTURES:** TORQUE is compatible with any one of the following: AZODRIN® 400, Copper oxychloride, Dithane M45, Gusathion® 350, Hold-on treatments for pears – NAA and 2,4-D, Kocide®, Lorsban®, NUDRIN® Insecticide, NUDRIN 225, Parathion E50, PHOSDRIN®, SAPROL®, Tedion®, thiram, ziram, zineb and Apollo+.

**3-WAY MIXTURES:** Compatible and incompatible mixtures of TORQUE with fungicides and insecticides are listed in the adjoining table:

INSECTICIDE:	Gusathion	AZODRIN 400	NUDRIN 225	NUDRIN or Lorsban
FUNGICIDE:				
Copper oxychloride	YES	YES	YES	NO
Dithane M45	YES	YES	YES	YES
Kocide	YES	YES	YES	YES
SAPROL	YES	YES	YES	YES
Thiram 80	YES	YES	YES	YES
Ziram 80	YES	YES	YES	YES

YES = compatible with TORQUE

NO = incompatible with TORQUE

**4-WAY MIXTURES:** the following are compatible:

- TORQUE plus Dithane M45 plus AZODRIN 400 plus NAA (as a hold-on spray for pears).
- TORQUE plus Dithane M45 plus Gusathion 350 plus NAA (as a hold-on spray for pears).

#### INSECTICIDE RESISTANCE WARNING

For insecticide resistance management TORQUE **GROUP 12A** INSECTICIDE Miticide is a Group 12A insecticide. Some naturally occurring insect biotypes resistant to TORQUE and other Group 12A insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if TORQUE or other Group 12A insecticides are used repeatedly. The effectiveness of TORQUE on resistant individuals could be significantly reduced.

Since occurrence of resistant individuals is difficult to detect prior to use, BASF Australia Ltd accepts no liability for any losses that may result from the failure of TORQUE to control resistant insects.

TORQUE may be subject to specific resistance management strategies. For further information contact your local supplier, BASF Australia Ltd representative or local agricultural department agronomist.

In Australia, strains of twospotted mite that are resistant to TORQUE have developed in deciduous fruit probably in other crops.

BASF Australia Ltd cannot accept responsibility for loss or damage to crops arising from resistance.

Two types of resistance have been identified:

- A “general organotin-resistance” which confers moderate resistance to TORQUE.
- A “specific TORQUE resistance” which confers high resistance to TORQUE.

While the effectiveness of TORQUE against strains that possess only “general organotin-resistance” is substantially less than against fully susceptible strains, a moderate level of control can be achieved by applying well before a dense infestation develops.

TORQUE is ineffective against the strains of twospotted mite that possess “specific TORQUE resistance” and these strains cannot be controlled by TORQUE. These strains are known to exist in the Goulburn Valley, in Victoria, but they may have developed or may well develop in other areas.

There is no evidence that strains of European red mite resistant to TORQUE have developed in Australia, however development of such strains is likely.

To maximise the useful life of TORQUE, users are requested to:

- Establish biological control using predatory mites. This will enable the use of lower rates of TORQUE.
- Regularly monitor mite infestations before and after treatment to ensure appropriate timing of applications and assess susceptibility.
- Where possible, alternate TORQUE with a miticide from another chemical group.
- Regularly inspect, maintain and calibrate application equipment to ensure it is operating efficiently. Thorough spray coverage will minimise the number of treatments needed to control mites.
- If an end of season clean-up treatment is required, use a miticide from another chemical group.

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### PROTECTION OF LIVESTOCK

Do NOT graze or feed animals on cover crops in sprayed orchards.

### PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Dangerous to fish. Do NOT contaminate streams, rivers or waterways with the chemical or used containers.

### STORAGE AND DISPOSAL

Store in the closed, original container, in a cool, well-ventilated area. Do NOT store for prolonged periods in direct sunlight. Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do NOT dispose of undiluted chemicals on-site.

If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should NOT be burnt.

### SAFETY DIRECTIONS

May irritate the eyes and skin. Avoid contact with eyes and skin. Do NOT inhale spray mist. When preparing spray wear cotton overalls buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves and face shield. When using the prepared spray wear elbow-length PVC gloves. If product or spray on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield and contaminated clothing.

### FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Telephone 131126 Australia-wide.

If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

### MSDS

Additional information is listed in the Material Safety Data Sheet.

**CONDITIONS OF SALE:** All conditions and warranties rights and remedies implied by law or arising in contract or tort whether due to the negligence of BASF Australia Ltd or otherwise are hereby expressly excluded so far as the same may legally be done provided however that any rights of the Buyer pursuant to non-excludable conditions or warranties of the Trade Practices Act 1974 or any relevant legislation of any State are expressly preserved but the liability of BASF Australia Ltd or any intermediate Seller pursuant thereto shall be limited if so permitted by the said legislation to the replacement of the goods sold or the supply of equivalent goods and all liability for indirect or consequential loss or damage of whatsoever nature is expressly excluded. This product must be used or applied strictly in accordance with the instructions appearing hereon. This product is sold solely for use in Australia and must not be exported without the prior written consent of BASF Australia Ltd.

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THIS PRODUCT IS NOT CONSIDERED TO BE A  
DANGEROUS GOOD UNDER THE AUSTRALIAN CODE  
FOR THE TRANSPORT OF DANGEROUS GOODS BY  
ROAD AND RAIL

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FOR SPECIALIST ADVICE IN AN  
**EMERGENCY ONLY**  
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**DIRECTIONS FOR USE**

**RESTRAINTS:** Do NOT apply by aircraft.  
Do NOT use in orchards where products likely to cause mite flaring have been used or are planned to be used.

CROP	PEST	STATE	WHP	RATE	CRITICAL COMMENTS				
<b>IMPORTANT:</b> Rates for all crops except BANANAS and STRAWBERRIES are for DILUTE APPLICATION with SPRAY VOLUMES based on PLANT ROW VOLUME: refer to General Instructions for details. DO NOT APPLY TO DECIDUOUS FRUIT, HOPS, CITRUS, AND ORNAMENTALS OTHER THAN AS A DILUTE SPRAY. Refer to General Instructions for RESISTANCE MANAGEMENT.									
Apples	Twospotted mite ( <i>Tetranychus urticae</i> )	Qld, NSW, Vic, SA, WA only	2 days	20 mL/ 100 L	WHERE BIOLOGICAL CONTROL OF two-spotted mite IS BEING PRACTISED: Apply as required to assist control by the biological agent(s), determined by frequent field checks conducted by appropriately trained personnel.				
Peaches, nectarines			14 days						
Apples, pears	Twospotted mite ( <i>Tetranychus urticae</i> )		2 days	40 mL/ 100 L		WHERE BIOLOGICAL CONTROL IS NOT BEING PRACTISED: Apply at the first sign of mite activity, well before a dense infestation develops. Repeat as required.			
Peaches, nectarines			14 days						
Apples, pears	European red mite ( <i>Panonychus ulmi</i> )		2 days	20 mL/ 100 L			WHERE BIOLOGICAL CONTROL OF European red mite IS BEING PRACTISED: Apply as required to assist control by the biological agent(s), determined by frequent field checks conducted by appropriately trained personnel.		
Peaches, nectarines			14 days						
Apples, pears	European red mite ( <i>Panonychus ulmi</i> )		2 days	40 mL/ 100 L				WHERE BIOLOGICAL CONTROL IS NOT BEING PRACTISED: FOLLOWING an application of OIL at recommended rates BEFORE BUD-BURST, APPLY TO PREDOMINANTLY MOTILE STAGES IN DECEMBER. Re-apply as required but well before a dense infestation develops.	
Peaches, nectarines			14 days						
Apples, pears	Twospotted mite ( <i>Tetranychus urticae</i> ), European red mite ( <i>Panonychus ulmi</i> )		2 days	20 mL or 40 mL/ 100 L					WHERE BIOLOGICAL CONTROL OF ONE OR BOTH PESTS IS BEING PRACTISED: REFER TO PROGRAMMES AND RATES ABOVE. Use the programme and rates for the dominant pest, taking into account the contribution of the biological control agent, estimated from frequent field checks conducted by appropriately trained personnel.
Peaches, nectarines			14 days						
			40 mL/ 100 L	WHERE BIOLOGICAL CONTROL IS NOT BEING PRACTISED: REFER TO PROGRAMMES AND RATES ABOVE. Use the programme and rates for the dominant pest.					
Apples, pears	Bryobia mite ( <i>Bryobia rubrioculus</i> )	2 days	40 mL/ 100 L	Apply at the first sign of mite activity, well before a dense infestation develops. Repeat as required. This pest is normally controlled by the programme for twospotted mite and European red mite.					
Peaches, nectarines		14 days							

CROP	PEST	STATE	WHP	RATE	CRITICAL COMMENTS
Hops	Twospotted mite ( <i>Tetranychus urticae</i> )	Vic only	2 days	40 mL/100 L	Apply at the first sign of activity, well before a dense infestation develops. Repeat as required.
Avocados	Tea red spider mite ( <i>Oligonychus coffeae</i> ), six spotted mite ( <i>Eotetranychus sexmaculatus</i> )	Qld, NSW, WA only	14 days	38 mL/100 L	Apply at the first sign of mite activity and repeat as infestations indicate. Spot spray individual trees only. Two applications a fortnight apart is normally adequate to control these pests.
Bananas	Twospotted mite ( <i>Tetranychus urticae</i> ), banana spider mite ( <i>Tetranychus lambi</i> )	Qld, NSW, NT only	1 day	370 mL/ha	Apply according to pest incidence, well before a dense infestation develops. Repeat as required.
Citrus	Citrus rust mite ( <i>Phyllocoptruta oleivora</i> )	Qld, NT only	7 days	45 mL/100 L	Apply according to pest incidence, well before a dense infestation develops. Repeat as required.
	Brown citrus rust mite ( <i>Tegolophus australis</i> )			30 mL/100 L	
	Citrus bud mite ( <i>Eriophyes sheldoni</i> )			20 mL/100 L	
Strawberries	Twospotted mite ( <i>Tetranychus urticae</i> )	Qld, NSW, Vic, SA, WA, NT only	1 day		Apply at the first sign of mite activity. Ensure that the spray thoroughly covers the undersides of all leaves. Repeat as required.
				300 mL/ha	Use this rate when the spray volume is greater than 2000 L/ha.
				400 mL/ha	Use this rate when the spray volume used is between 400 and 2000 L/ha.
				700 mL/ha	Use this rate when the spray volume used is between 200 and 400 L/ha.
Ornamentals	Twospotted mite ( <i>Tetranychus urticae</i> ), European red mite ( <i>Panonychus ulmi</i> )	Qld, NSW, Vic, SA, WA, NT only	-	40 mL/100 L	Apply at the first sign of mite activity, well before a dense infestation develops. Repeat as required. Due to the diversity of ornamentals and growing conditions, plant reactions to TORQUE must be checked to ascertain safety before each large scale application is made. BASF Australia Ltd will not accept liability for any adverse plant reactions caused by TORQUE.

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

**WITHHOLDING PERIODS:**

BANANAS, STRAWBERRIES:

APPLES, PEARS:

CITRUS:

AVOCADOS, PEACHES, NECTARINES:

DO NOT APPLY LATER THAN 1 DAY BEFORE HARVEST.

DO NOT APPLY LATER THAN 2 DAYS BEFORE HARVEST.

DO NOT APPLY LATER THAN 7 DAYS BEFORE HARVEST.

DO NOT APPLY LATER THAN 14 DAYS BEFORE HARVEST.

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**PERMIT DETAILS FOR NUMBER – PERMIT 3342**



**MITICIDE**

Active Constituent: 550 g/L FENBUTATIN OXIDE  
 Anti-freeze: 103 g/L MONOETHYLENE GLYCOL

Registered to: THE AUSTRALIAN TEA TREE INDUSTRY ASSOCIATION  
 CRESCENT ST  
 GUDGEN 2485 NSW

**FOR MINOR OFF-LABEL-USE OF A REGISTERED AGVET CHEMICAL PRODUCT**

**PERMIT NUMBER - PER3342**

This permit is issued under the Agvet Code, of the relevant jurisdictions, to the person stated above. The holder of the permit must comply with all requirements as specified in the Agvet Code. A summary of the key requirements are that the holder must:

- supply any requested information to the NRA;
- inform the NRA if they become aware of any relevant information concerning the uses dealt with by this permit;
- comply with a lawful direction or requirement of an inspector.

This permit for the reasons given below, allows any person listed in **1. Persons** to use the products listed in **2. Products** for the minor off-label use specified in **3. Directions for Use** in the jurisdictions listed in **4. States**.

If this permit were not issued use of the products as specified in this permit would constitute an offence under the Agvet Codes.

The persons listed in **1. Persons** must comply with all conditions listed in CONDITIONS OF PERMIT to be effectively covered by this permit.

**THIS PERMIT IS IN FORCE FROM 25 AUGUST 2000 TO 25 AUGUST 2002.**

It is in force until it expires or it is cancelled, suspended or surrendered.

**REASON FOR ISSUE OF PERMIT**

Eriophyid mite causes damage to tea tree plantations through significant tip growth distortion and prevented development of terminals. This use has previously been covered by DPI Queensland Board Approval No 70052.

**1. Persons**

Persons generally.

**2. Products**

TORQUE MITICIDE

Containing: 550g/L FENBUTATIN OXIDE  
 as its only active constituent.

**3. Directions for Use**

Crop	Pest	Rate
OIL TEA TREE	ERIOPHYID MITE	Apply 50 mL/ 100 L water. Add wetting agent Agral 100 mL/100 L spray volume.

**Critical Use Comments:**

Spray the entire plant using hollow cone or fan jets attached to droppers.

Apply two sprays 10-14 days apart. Apply a minimum of 500-1000 L of spray per hectare (depending on plant size) is required to ensure adequate coverage to the point of runoff.

**Withholding Period:**

DO NOT harvest for 4 weeks after application.

**4. States**

NSW, QLD only

**CONDITIONS OF PERMIT**

**General Conditions**

THIS PERMIT provides for the use of a product in a manner other than specified on the approved label of the product. Unless otherwise stated in this permit, the use of the product must be in accordance with instructions on its label.

PERSONS who wish to prepare for use and/or use the products for the purposes specified in this permit must read, or have read to them, the permit particularly the information included in DETAILS OF PERMIT and CONDITIONS OF PERMIT.

***Acknowledgments:***

Collated by HerbiGuide. Phone 08 98444064 for more information.