

## SAFETY PRECAUTIONS

### Operator protection:

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment: WEAR SUITABLE PROTECTIVE GLOVES when handling the concentrate and when applying by hand-held equipment.

However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection.

WASH HANDS AND EXPOSED SKIN before meals and after work.

WASH CONCENTRATE from skin or eyes immediately.

### Environmental protection:

Do not contaminate water with the product or its container. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

To protect aquatic organisms respect an unsprayed buffer zone to surface water bodies in line with the LERAP requirements.

DO NOT ALLOW DIRECT SPRAY from broadcast air-assisted sprayers to fall within 40 metres of the top of the bank of a static or flowing waterbody, unless a Local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 5 metres of the top of a ditch which is dry at the time of application.

Aim spray away from water.

DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within 5 metres of the top of the bank of a static or flowing water body, or within 1 metre of the top of a ditch which is dry at the time of application. Aim spray away from water.

This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer or broadcast air-assisted sprayer, either a LERAP must be carried out in accordance with HSE's published guidance or the statutory buffer zone must be maintained. The results of the LERAP must be recorded and kept available for three years. (LERAP Scheme not applicable in the Republic of Ireland).

REPUBLIC OF IRELAND: Horizontal Boom Sprayers. To protect aquatic organisms respect an unsprayed buffer zone of 5m to surface water bodies. Air assisted Sprayers. To protect aquatic organisms respect an unsprayed buffer zone of 40m to surface water bodies.



Dow AgroSciences

# Tracer®

## INSECTICIDE

Product Registration Number: MAPP 12438/PCS No 02649

A suspension concentrate containing 480 g/litre (44.03% w/w) spinosad.

A selective insecticide for use in FIELD VEGETABLES and FRUIT CROPS for the control of CATERPILLAR PESTS and useful control of CABBAGE ROOT FLY and THRIPS including Western flower thrips.

The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product work (UK only).

**FOR USE ONLY AS A HORTICULTURAL INSECTICIDE  
READ DIRECTIONS FOR USE ON ATTACHED LEAFLET.**

# 0.5 Litre e



Product Identifier according to Art.18 of Reg. (EC) No 1272/2008 [CLP]: Tracer®

### WARNING

**Very toxic to aquatic life with long lasting effects.**

Collect spillage

Dispose of contents/container to a licensed hazardous waste disposal contractor or collection site except for triple rinsed, empty containers which can be disposed of as non-hazardous waste

Contains 1,2-benzisothiazolin-3-one. May produce an allergic reaction.  
**To avoid risks to human health and the environment, comply with the instructions for use.**

MAPP 12438/PCS No. 02649

### Storage and disposal:

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS.  
WASH OUT CONTAINER THOROUGHLY, empty washings into the spray tank and dispose of safely.

DO NOT RE-USE CONTAINER for any purpose.



## IMPORTANT INFORMATION

FOR USE ONLY AS A HORTICULTURAL INSECTICIDE

### Crops/Situations:

Apple, pear, crab apple, quince, outdoor crops of broccoli, Brussels sprout, cabbage, calabrese, cauliflower, Chinese cabbage, leek, bulb onion, salad onion, garlic and shallot and protected crops of strawberry

Maximum Individual Dose:

}

Maximum Number of Treatments:

} Full details are given in the

Latest Time of Application:

} Important Information area on

Other Specific Restrictions:

} the attached leaflet

**Read the label before use. Using this product in a manner that is inconsistent with the label may be an offence. Follow the Code of Practice for Using Plant Protection Products.**

### PROFESSIONAL USE ONLY

### PROTECT FROM FROST

**Triple Rinse Containers, Puncture and Invert to Dry at time of Use**

Registered by:

**Dow AgroSciences Limited**

Latchmore Court, Brand Street,

Hitchin,

Hertfordshire. SG5 1NH.

Telephone: Hitchin +44(0)1462 457272

Fax: +44(0)1462 426605

24 Hour Emergency Telephone Number:

+44(0)1553 761251

Marketed by:

**Landseer Limited**

Lodge Farm, Goat Hall Lane

Galleywood, Chelmsford

Essex. CM2 8PH

Telephone: +44(0)1245 357109

Fax +44(0)1245 494165

This label is compliant with the CPA  
Voluntary Initiative Guidance (UK only)

® Trademark of The Dow Chemical Company ("Dow")  
or an affiliated company of Dow



## DIRECTIONS FOR USE

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

### IMPORTANT INFORMATION

FOR USE ONLY AS A HORTICULTURAL INSECTICIDE

Crops	Maximum Individual Dose	Maximum Number of Treatments	Latest Time of Application
Apple, pear, crab apple, quince pre-blossom	150 mL product/ha AND/OR	1 per crop	7 days before harvest
post-blossom	250 mL product/ha	3 per crop	
Broccoli (outdoor), Brussels sprout (outdoor), cabbage (outdoor), calabrese (outdoor), cauliflower (outdoor), broccoli (outdoor), calabrese (outdoor), Chinese cabbage (outdoor)	12 mL product/1000 module plants	1 per crop (See Other Specific Restrictions)	Pre-planting, 6 leaf stage
Broccoli (outdoor), Brussels sprout (outdoor), cabbage (outdoor), calabrese (outdoor), cauliflower (outdoor), Chinese cabbage (outdoor)	200 mL product/ha	4 per crop	3 days before harvest
Leek (outdoor), bulb onion (outdoor), salad onion (outdoor), garlic (outdoor), shallot (outdoor)	200 mL product/ha	4 per crop	7 days before harvest
Strawberry (protected)	150 mL product/ha (15 ml per 100 litres of water)	4 per crop (See Other Specific Restrictions)	1 day before harvest

#### Other Specific Restrictions:

For protected strawberry apply a maximum of 2 consecutive sprays followed by a minimum 28 day interval before any further applications.

When application is made before planting to broccoli, Brussels sprout, cabbage, calabrese, cauliflower or Chinese cabbage only 2 further applications of spinosad may be made to the crop.

Module drench treatments to brassica crops must not be made by hand held equipment.

In protected situations the total number of applications of any spinosad containing product must not exceed 6 per glasshouse/protected structure in a 12 month period, regardless of the crop being treated (including ornamentals).

**Read the label before use. Using this product in a manner that is inconsistent with the label may be an offence. Follow the Code of Practice for Using Plant Protection Products.**

## NOTES

TRACER® insecticide has a very specific pest spectrum. Only apply TRACER against pests and crops on the label.

Taint tests have not been conducted using TRACER. Growers should consult processors before use.

Following application allow 12 hours for TRACER to become rainfast before applying irrigation.

Wash spray tank and equipment (including knapsack sprayers) thoroughly with water and a liquid detergent immediately after use. Spray out. Fill with clean water and leave overnight. Spray out again before using another product.

## MODE OF ACTION

TRACER enters the insect primarily through contact and ingestion. Contact occurs by direct application or by insect movement on a treated surface. Ingestion occurs from feeding on treated surfaces. Following entry, TRACER acts on a unique neuro-receptor site of the insect. Symptoms appear almost immediately and complete mortality occurs within a few hours. TRACER is not systemic but does show translaminar movement.

## CROP SAFETY

### Outdoor Crops

TRACER has been tested on a wide range of outdoor crops. TRACER has good plant safety when applied at different growth stages, including flowering.

### Modular drench application to brassicas

Users should refer to and follow the specific instructions for applying drench treatments.

### Protected Strawberry

It is recommended to test TRACER on a small number of plants to confirm the crop safety before spraying a large area.

## RESISTANCE

### GENERAL

To reduce the possibility of the development of resistance:

- Total reliance on one pesticide will hasten the development of resistance: Spinosad has a different mode of action from other insecticides and is most effective when applied in planned programmes with other insecticides with different modes of action.
- Avoid use of the same active ingredient or mode of action on consecutive generations of insects. However, multiple applications to reduce a single generation are acceptable. If uncertain of the generation cycle, no more than three consecutive applications (two for protected crops) should be used nor should there be continuous use for more than 30 days. Do not use TRACER on consecutive generations for insects which show a high risk of resistance such as thrip species.
- Restrict the number of sprays to no more than six applications per glasshouse/protected structure in a 12 month period of **any** spinosad containing product regardless of crop being treated (including ornamentals).
- Do not use reduced label rates when applied alone or in tank mixtures.

©Trademark of the Dow Chemical Company ("Dow") or an affiliated company of Dow

## OUTDOOR CROPS

- Onion thrips have shown resistance to certain chemical groups and resistance management steps should be taken as it is considered a high resistance risk pest. Carry out careful monitoring. Apply when onion thrips are first seen and repeat the application if needed after 10 days for leeks, bulb onion, salad onion, garlic and shallot. It is vital that TRACER is applied before the pest becomes well established in the crop.
- Apply no further sprays of TRACER (or any other spinosad containing product) once the maximum number of foliar sprays have been applied (or a maximum of two foliar sprays on brassicas if a pre-planting modular drench application of TRACER has already been made).
- If thrips are already established consider using a product with knockdown activity such as dimethoate before applying TRACER.
- On brassicas, only one pre-planting modular drench application should be made per crop to protect against attack from cabbage root fly with subsequent foliar applications of TRACER restricted to two sprays per crop.
- Carry out careful monitoring. For caterpillar control apply TRACER at egg hatch in top fruit and when pests are first seen in other field crops. Repeat applications at 10 day intervals only if needed.
- Applications should be targeted against early insect developmental stages whenever possible.
- If possible, include multiple tactics (eg cultural or biological controls) when using Integrated Pest Management Programmes.
- Use TRACER in programmes with other effective insecticides of a different mode of action to reduce the possibilities of resistance occurring.

## PROTECTED STRAWBERRY CROPS

- Western flower thrips have shown resistance to certain chemical groups and resistance management steps should be taken as it is considered a high resistance risk pest in protected crops/plants.
- Before undertaking a spray programme with TRACER establish whether incoming plant material has previously been treated with TRACER or another spinosad containing product.
- Carry out careful monitoring and apply when Western flower thrips are first seen making repeat applications at 7 day intervals only if needed, with a maximum of two consecutive spinosad sprays to protected strawberry. Leave at least 28 days before any further applications of TRACER (or any other spinosad containing product) in the structure (even if only treating some of the plants).
- For protected strawberry crops restrict the total number of sprays to no more than four applications of TRACER per strawberry crop. In multi-cropping situations restrict the total number of sprays to no more than six in a 12-month period in the same glasshouse or structure of any spinosad containing product regardless of the crop being treated (including ornamentals and all year round (AYR) chrysanthemums).

- **DO NOT EXCEED SIX APPLICATIONS OF ANY PRODUCT CONTAINING SPINOSAD PER GLASSHOUSE/PROTECTED STRUCTURE IN A 12-MONTH PERIOD**
- Apply in programmes with other insecticides with a different mode of action and use no further sprays of TRACER (or any other spinosad) containing product) once the maximum number of sprays have been applied.
- If the final insecticide application to a crop was spinosad, choose a different insecticide active ingredient to begin spraying on the next crop.
- Applications should be targeted against early insect developmental stages whenever possible.
- Do not use reduced label rates.
- Whenever possible use an Integrated Pest Management programme.
- Choose resistant cultivars.

## INTEGRATED PEST MANAGEMENT

- Whenever possible use an Integrated Pest Management programme.
- For further information and the latest advice on beneficial insects and mites and their integrated use with TRACER consult Landseer Limited.

## BEES

Do not apply in the heat of the day when bees may be foraging as contact with direct spray may be harmful. Remove the hive during spraying as exposure to direct spray may be harmful to bees. Dow AgroSciences take the most restrictive approach and recommend that a period of 24 hours after application and all spray deposits are thoroughly dry before exposure of bees. Water pools with residues of spinosad will continue to pose a risk and should be avoided.

## OUTDOOR CROPS

- TRACER can be used in an integrated pest management strategy in top fruit as it has been found to have no long term adverse effects on predatory bugs *Anthocoris* spp or the predatory mite *Typhlodromus pyri*.
- Overall applications of TRACER to control pests in field brassicas, leeks, onions and strawberry are of low risk to predatory insects and mites both in the plant canopy and on the soil below. There is risk to parasitic *Hymenoptera* but these effects are of short duration (2 weeks) as the persistence of TRACER is low and recovery of these highly mobile species would be rapid.
- TRACER, when used according to good agricultural practice is unlikely to pose an unacceptable risk to honeybees and beneficial arthropods.

MODULAR DRENCH APPLICATION

It is best practice to make module spray applications in a specific spray area away from other plants where beneficial insects may be present. If this is not possible then do not make an application of TRACER where populations of beneficial insects and especially parasitic wasps are present in high numbers.

If module plants are raised as part of an integrated pest management system then follow the directions given for protected crops.

PROTECTED CROPS

- As part of an Integrated Pest Management programme.
- Inspect all incoming plant material for presence of Western flower thrip and treat if necessary.
  - Monitor stock routinely to determine the need for control measures.
  - Use screens or barriers to prevent insects migrating.
  - Use predators and parasites.
  - Exposure to direct spray is harmful to bumble bees, but dry spray deposits are harmless.
  - Carefully choose any chemical products used in the pesticide programme and consider any side effects on bees and beneficial arthropods

TRACER has been tested on a wide range of predators and parasites used to control pests in protected crops. The active ingredient, spinosad has been shown to be of low impact to many insect and mite predators but harmful to adults of most parasitic wasps (*Hymenoptera*).

When applied to plants where insect and mite predators are present TRACER may cause a temporary reduction in abundance.

For susceptible predators (parasitic hymenoptera) re-introduction is possible after 7 days following application (with perhaps 14 days in winter months). For most other predators introduction is possible 24 hours after application. Re-introduction of *Orius laevigatus* is advised one week later.

Beneficials may be safely introduced to treated plants after an application of TRACER according to the following table:

TRACER Recommendations for Integrated Use with Predators and Parasites			
Beneficial Type	Species	*Toxicity Class Rating	Introduction Best Practices
Predatory mites	<i>Phytoseiulus persimilis</i>	Harmless (1)	Data suggest predatory mites introduced when spray deposits are dry may be affected but will recover after 24 hours.
	<i>Amblyseius californicus</i>	Harmless (1)	
	<i>Amblyseius cucumeris</i>	Harmless (1)	

TRACER Recommendations for Integrated Use with Predators and Parasites			
Beneficial Type	Species	*Toxicity Class Rating	Introduction Best Practices
Predatory insects	<i>Chrysoperla carnea</i>	Harmless (1)	Data suggest predatory insects introduced when spray deposits are dry may be affected but will recover after 24 hours. <i>O. laevigatus</i> is best introduced after 7 days. <i>M.caliginosus</i> may be introduced on the day of application once spray deposits are dry. If TRACER is applied directly to plants containing <i>M.caliginosus</i> there may be a short-term reduction in numbers.
	<i>Orius laevigatus</i>	Slightly harmful (2)	
	<i>Orius insidiosus</i>	Harmless (1)	
	<i>Aphidoletes aphidimyza</i>	Harmless (1)	
	<i>Macrolophus caliginosus</i>	Harmful (4)	
Parasitic wasps	<i>Aphidius colemani</i>	Moderately Harmful (3)	Direct applications of TRACER are harmful to parasitic wasps. Wait at least 7 days after an application of TRACER before introducing new parasites
	<i>Encarsia formosa</i>	Moderately Harmful (3)	
	<i>Trichogramma brassicae</i>	Harmful (4)	
	<i>Diglyphus isaea</i>	Harmful (4)	

- \*Toxicity ratings:
- Class 1 Harmless less than 25% reduction
  - Class 2 Slightly harmful 25–50 % reduction
  - Class 3 Moderately harmful 50-75 % reduction
  - Class 4 Harmful more than 75% reduction

APPLE, PEAR, CRAB APPLE, QUINCE

NOTES

To avoid variable performance, timing of application should be optimised and good coverage of the foliage should be achieved. Optimal timing of application of TRACER post-blossom for control of caterpillars is when first egg hatch is predicted based on threshold counts in pheromone traps being reached. It is important when making all applications to top fruit to use sufficient water volume to achieve effective cover and penetration of the foliage. Where tree height and/or canopy density is reduced, the dose (and water volume) should be adjusted in accordance with an appropriate dose adjustment scheme. Consult your specialist advisor for further information. Further information on the PACE scheme is available from HDC, or see the HDC leaflet (Orchard Spraying: Opportunities to reduce rates) available on the CRD website at <http://www.pesticides.gov.uk/HDC.pdf>.

**PRE-BLOSSOM:**

<b>Pest</b>	Over wintered tortrix moths
<b>Rate</b>	150 mL/ha
<b>Water volume</b>	300 to 1500 litres of water per hectare
<b>Maximum number of applications</b>	1 pre-blossom
<b>Time of application</b>	Apply pre-blossom from early green cluster when first signs of active larvae which spin themselves into webs are first observed.
<b>Latest time of application</b>	7 days before harvest

**POST-BLOSSOM:**

<b>Pest</b>	Summer fruit tortrix moth, codling moth
<b>Rate</b>	250 mL/ha
<b>Water volume</b>	300 to 1500 litres of water per hectare
<b>Maximum number of applications</b>	3 post-blossom
<b>Time of application</b>	Apply post-blossom when first egg hatch is predicted based on threshold counts in pheromone traps being reached. Carefully monitor pest development to determine whether repeat applications are necessary. If required, make a repeat application of TRACER (or a similar compound with activity against moth larvae) timed to coincide with egg hatch of the larvae. Effective control of caterpillars in top fruit usually requires several insecticide sprays per year. A 2 or 3 spray programme at 10 day intervals may be needed when conditions favour rapid pest development. Where possible, apply TRACER in programmes with products with a different mode of action as a good resistance management strategy. <b>Codling moths, summer fruit tortrix moths:</b> Mid-June to August in most seasons. <b>Fruit tree tortrix moth:</b> Limited data suggest that useful control of fruit tree tortrix moths can be achieved when the label rate for summer fruit tortrix moth and codling moth is applied. Severe or late attacks in late July or early August may require further applications.
<b>Latest time of application</b>	7 days before harvest

**OUTDOOR BRASSICA CROPS (BROCCOLI, BRUSSELS SPROUT, CABBAGE, CALABRESE, CAULIFLOWER, CHINESE CABBAGE)****MODULAR DRENCH TREATMENT**

<b>Pest</b>	Cabbage root fly
<b>Rate</b>	60 mL/5000 plants
<b>Water volume</b>	5 litres of water per 5000 plants
<b>Maximum number of applications</b>	1 prior to planting out.
	Following modular drench treatment with TRACER only 2 foliar applications of spinosad may be made to the crop.
<b>Time of application</b>	Crops should be treated ideally at the 3 to 4 leaf stage. Only good crops with good leaf condition that are growing vigorously should be treated.
<b>Latest time of application</b>	6 leaf stage.

Application is a three stage process:

- moisten the leaves of the plants to be treated immediately prior to treatment
- apply the TRACER drench
- wash off the TRACER drench from leaves of plants with water

It is important that the total volume of water used in these three stages does not exceed the water holding capacity of the modules, otherwise leaching of the TRACER will occur which may reduce cabbage root fly control and lead to contamination of underlying glasshouse soil (see 'Notes' below).

The water volumes below are given as a guide for modules of 11 to 13 mL capacity (the minimum size and hence the minimum volume recommended). Larger volumes can be used with larger modules.

Leaves of the plants should be wetted with a light spray of water immediately before treatment using 2 litres per 5,000 plants. TRACER should then be applied at 60 mL in 5 litres of water per 5,000 plants.

Immediately after treatment the insecticide must be thoroughly washed off the leaves of the plant with clean water, using 5 litres of water per 5,000 plants.

**NOTES FOR MODULE APPLICATION**

**TRACER MUST BE APPLIED ALONE.** Tank mixing of TRACER for this use is may produce severe leaf scorch.

TRACER will provide partial or useful control of cabbage root fly between 6 to 8 weeks after treatment, and will improve plant establishment and reduce root damage with the resultant marketable yield benefits.

If plants are still vulnerable and there is a risk of further infestation after this time then a follow up application in the field may be required with a suitable product. This is particularly important if plants are treated before the start of April and the arrival of the first generation.

Breakdown of TRACER in soils inside glasshouses is rapid and spinosad does not accumulate or leach in soils. However, best practice should avoid applying TRACER in such a large volume of water that it passes through the compost. Also prevent the spray contaminating the pathways and covered areas surrounding the trays being treated. This can be done in a number of ways eg interceptor trays, polythene sheeting, use of correct water volumes etc. After use, remove plastic sheeting, wash down and dispose of safely.

When handling recently drenched trays of plants it is best practice to wear protective rubber gloves and coveralls.

Modules should generally be transplanted as soon as possible after treatment. However, TRACER can be leached out of the compost if the modules are over watered and so best practice is to not move the plants for the first 24 hours after application. If plants are to be despatched freshly watered, TRACER should be applied a few days beforehand to ensure that it is not leached from the module during the final watering.

Transplanting of treated blocks and modules to a depth which brings untreated soil into contact with plant stems above the top of the block or module will lead to reduced control.

Further treatments to control cabbage root fly larvae may be required in areas of high activity.

**OUTDOOR BRASSICA CROPS (BROCCOLI, BRUSSELS SPROUT, CABBAGE, CALABRESE, CAULIFLOWER, CHINESE CABBAGE)**

**FOLIAR TREATMENT**

<b>Pest</b>	Caterpillars: Control of Diamond back moth, small cabbage white butterfly, large cabbage white butterfly, and useful control of large cabbage moth
<b>Rate</b>	200 mL/ha
<b>Water volume</b>	200 to 600 litres of water per hectare
<b>Maximum number of applications</b>	4 per crop OR if a modular drench application of TRACER has been made, 2 per crop on brassicas.
<b>Time of application</b>	Spray when damage is first seen, and preferably when caterpillars are small. If repeat applications are required try to use in programmes with other insecticides with a different mode of action.
<b>Latest time of application</b>	3 days before harvest

**OUTDOOR LEEK, BULB ONION, SALAD ONION, GARLIC, SHALLOT**

<b>Pest</b>	Useful control of onion thrips and reduction in damage
<b>Rate</b>	200 mL/ha
<b>Water volume</b>	200 to 600 litres of water per hectare
<b>Maximum number of applications</b>	4 per crop
<b>Time of application</b>	Early application to control the pest is essential. Apply when nymphs and adults are first seen or at very first signs of crop damage. Onion thrips have shown resistance to certain chemical groups and resistance management steps should be taken. It is important to monitor pest levels and apply a maximum of four sprays at 10 day intervals depending on the pest pressure. Where repeat applications are required apply TRACER in programmes with other insecticides with a different mode of action. It is vital that TRACER is applied before the pests become well established in the crop. If thrips are already well established in the crop consider using a product with knockdown activity such as dimethoate before applying TRACER.
<b>Latest time of application</b>	7 days before harvest

## PROTECTED CROPS OF STRAWBERRY

<b>Pest</b>	Control of Western Flower Thrip
<b>Rate</b>	150 mL/ha (15 mL per 100 litres of water)
<b>Water volume</b>	200 to 1000 litres of water
<b>Maximum number of applications</b>	4 per crop (2 consecutive)
<b>Time of application</b>	It is important to monitor pest levels. Apply when nymphs and adults are first observed or at very first signs of crop damage. Applications should be made before thrips are established. During spraying, make sure that the inside and outside parts of the leaves and flowers are covered. The spray technique and the amount of water must cover the plant without causing run-off and control often depends on the quality of the spraying (machinery, quantity of water, etc). Best control is achieved by a sequence of two treatments at 7 day intervals (if needed). For resistance management purposes there must be a minimum interval of 28 days after the second application before any further applications of TRACER are made. This is an opportunity to allow beneficial insects to be effective in IPM programmes. Restrict the number of sprays to no more than 6 applications per glasshouse/structure in a 12 month period of any spinosad containing product regardless of crop (including ornamentals) being treated. TRACER should be applied in programme with other insecticides and in combination with integrated pest management.
<b>Latest time of application</b>	1 day before harvest

## MIXING

To ensure thorough mixing of the product invert the container several times before opening. Half fill the spray tank with water, begin agitation and add the required quantity of TRACER. Fill up the spray tank, agitating continuously to ensure thorough mixing, and maintain agitation until spraying is complete. Use only clean water for mixing. Use the spray solution immediately after preparation.

## SPRAY VOLUME

Water volume should reflect the need for uniform cover and penetration of the leaf canopy.

<b>Crop</b>	<b>Water Volume</b>	<b>Comment</b>
Apple, pear, crab apple, quince	Min : 300 litres/ha Max : 1500 litres/ha	It is particularly important when spraying post-blossom to achieve full penetration of the leaf canopy and uniform coverage of the foliage and blossoms or fruitlets.
Broccoli, Brussels sprout, cabbage, calabrese, cauliflower, Chinese cabbage, leek, bulb onion, salad onion, garlic, shallot	Min : 200 litres/ha Max : 600 litres/ha	Ensure good penetration of the foliage.
Strawberry (protected)	Min : 200 litres/ha Max : 1000 litres/ha	Ensure good penetration of the foliage.

## APPLICATION EQUIPMENT

Apply TRACER using a horizontal boom sprayer or a broadcast air assisted sprayer.

For protected strawberry crops, apply TRACER by conventional hydraulic sprayer or by hand-held applicators. Ensure spray equipment is in good working order and has been calibrated according to the manufacturers' recommendations.

## Dow AgroSciences Conditions of Supply

All goods supplied by us are of high grade and we believe them to be suitable but, as we cannot exercise control over their storage, handling, mixing or use, or the weather conditions before, during or after application which may affect the performance of the goods, all conditions and warranties, statutory or otherwise, as to the quality or fitness for any purpose of our goods are excluded. No responsibility will be accepted by us or re-sellers for any failure in performance, damage or injury whatsoever arising from their storage, handling, application or use. These conditions cannot be varied by our staff or agents whether or not they supervise or assist in the use of such goods.

## COMPANY ADVISORY INFORMATION

### Use in Organic Crops

Spinosad has met the necessary criteria to allow it to be included in Annex II of the EU Organic Regulation 2092/91/EC and is compatible with Organic Farming Standards. Organic growers should consult their organic authorisation body for derogation to use TRACER for on label and off-label approved crops. For further information please contact Dow AgroSciences.

# Safety Data Sheet

This Safety Data Sheet does not form part of the approved product label

## SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifiers

**Product name:** TRACER® Insect Control

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Identified uses:** Plant Protection Product

### 1.3 Details of the supplier of the safety data sheet

#### COMPANY IDENTIFICATION

DOW AGROSCIENCES LIMITED  
LATCHMORE COURT  
BRAND STREET  
HITCHIN  
England  
SG5 1NH  
UNITED KINGDOM

#### Customer Information Number:

[SDSQuestion@dow.com](mailto:SDSQuestion@dow.com)

### 1.4 EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 0031 115 694 982

**Local Emergency Contact:** 00 31 115 69 4982

## SECTION 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EU) 1272/2008 :**

Acute aquatic toxicity - Category 1 - H400

Chronic aquatic toxicity - Category 1 - H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Classification according to EU Directives 67/548/EEC or 1999/45/EC:**

Dangerous for the environment - R50/53

For the full text of the R-phrases mentioned in this Section, see Section 16.

### 2.2 Label elements

**Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]:**

**Hazard pictograms**



**Signal word:** WARNING

#### Hazard statements

H410 Very toxic to aquatic life with long lasting effects.

#### Supplemental Hazard Statements

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

#### Precautionary statements

P391 Collect spillage.

P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.

#### Supplemental information

Contains 1,2-benzisothiazol-3(2H)-one May produce an allergic reaction.

### 2.3 Other hazards

no data available



## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixture

This product is a mixture.

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
CASRN 168316-95-8 EC-No. 434-300-1 Index-No. 603-209-00-0	—	44.0%	spinosad (ISO)	Aquatic Acute - 1 - H400 Aquatic Chronic - 1 - H410
CASRN 57-55-6 EC-No. 200-338-0 Index-No. —	01-2119456809-23	< 5.0 %	Propylene glycol	Not classified

For the full text of the H-Statements mentioned in this Section, see Section 16.

CASRN / EC-No. / Index-No.	Concentration	Component	Classification: 67/548/EEC
CASRN 168316-95-8 EC-No. 434-300-1 Index-No. 603-209-00-0	44.0%	spinosad (ISO)	N - R50 - R53
CASRN 57-55-6 EC-No. 200-338-0 Index-No. —	< 5.0 %	Propylene glycol	Not classified

For the full text of the R-phrases mentioned in this Section, see Section 16.

## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**General advice:** If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control centre or doctor for treatment advice.

**Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control centre or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** No emergency medical treatment necessary.

**4.2 Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control centre or doctor, or going for treatment.

## SECTION 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

**Suitable extinguishing media:** To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam.

**Unsuitable extinguishing media:** no data available

### 5.2 Special hazards arising from the substance or mixture

**Hazardous combustion products:** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** This material will not burn until the water has evaporated. Residue can burn. If exposed to fire from another source and water is evaporated, exposure to high temperatures may cause toxic fumes.

5.3 Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. To extinguish combustible residues of this product use water fog, carbon dioxide, dry chemical or foam. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the “Accidental Release Measures” and the “Ecological Information” sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

SECTION 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**6.2 Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**6.3 Methods and materials for containment and cleaning up:** Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Sand. Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Dow AgroSciences for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

**6.4 Reference to other sections:** References to other sections, if applicable, have been provided in the previous sub-sections.

SECTION 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling:** Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapour or mist. Use with adequate ventilation. Wash thoroughly after handling.

**7.2 Conditions for safe storage, including any incompatibilities:** Store in a dry place. Store in original container. Keep container tightly closed when not in use. Do not store near food, foodstuffs, drugs or potable water supplies.

**7.3 Specific end use(s):** Refer to product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
spinosad (ISO)	Dow IHG	TWA	0.3 mg/m3
Propylene glycol	US WEEL	TWA	10 mg/m3
	GB EH40	TWA	474 mg/m3 150 ppm
	GB EH40	TWA	10 mg/m3

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

8.2 Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

Skin protection

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber (“latex”). Neoprene. Nitrile/butadiene rubber (“nitrile” or “NBR”). Polyethylene. Ethyl vinyl alcohol laminate (“EVAL”). Polyvinyl chloride (“PVC” or “vinyl”). Viton. Avoid gloves made of: Polyvinyl alcohol (“PVA”). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Wear clean, body-covering clothing.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

#### Environmental exposure controls

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Liquid.
Physical state	Off-white
Colour	Mild
Odour	No test data available
Odour Threshold	7.52 CIPAC MT 75.1 (neat)
pH	Not applicable
Melting point/range	No test data available
Freezing point	No test data available
Boiling point (760 mmHg)	No test data available
Flash point	closed cup > 100 °C EC Method A9 none below boiling point
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Lower explosion limit	No test data available
Upper explosion limit	No test data available
Vapour Pressure	No test data available
Relative Vapour Density (air = 1)	No test data available
Relative Density (water = 1)	1.09 at 20 °C Unspecified
Water solubility	Dispersible
Partition coefficient: n-octanol/water	no data available
Auto-ignition temperature	EC Method A15 none below 400 degC
Decomposition temperature	No test data available
Dynamic Viscosity	134.6 mPa.s at 20 °C
Kinematic Viscosity	No test data available
Explosive properties	No EEC A14
Oxidizing properties	No

### 9.2 Other information

#### Liquid Density

1.09 g/cm<sup>3</sup> at 20 °C Calculated

#### Molecular weight

no data available

#### Surface tension

43 mN/m

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## SECTION 10. STABILITY AND REACTIVITY

**10.1 Reactivity:** no data available

**10.2 Chemical stability:** Thermally stable at recommended temperatures and pressures.

**10.3 Possibility of hazardous reactions:** Polymerization will not occur.

**10.4 Conditions to avoid:** Active ingredient decomposes at elevated temperatures.

**10.5 Incompatible materials:** None known.

**10.6 Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Nitrogen oxides.

## SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological information on this product or its components appear in this section when such data is available.

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Based on information for a similar material:

LD50, rat, > 5,000 mg/kg

##### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Based on information for a similar material:

LD50, rabbit, > 5,000 mg/kg

##### Acute inhalation toxicity

No adverse effects are anticipated from single exposure to mist. For respiratory irritation and narcotic effects: Relevant data not available.

For similar material(s):

LC50, rat, 4 Hour, Aerosol, > 5.0 mg/l

**Skin corrosion/irritation**

Prolonged contact may cause slight skin irritation with local redness.

**Serious eye damage/eye irritation**

May cause slight eye irritation.

Corneal injury is unlikely.

May cause pain disproportionate to the level of irritation to eye tissues.

**Sensitization**

For the active ingredient(s):

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

For the active ingredient(s):

In animals, Spinosad has been shown to cause vacuolization of cells in various tissues.

Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

**Carcinogenicity**

For the active ingredient(s): Did not cause cancer in laboratory animals.

**Teratogenicity**

For the active ingredient(s): Did not cause birth defects or other effects in the foetus even at doses which caused toxic effects in the mother.

**Reproductive toxicity**

For the active ingredient(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

**Mutagenicity**

For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**SECTION 12. ECOLOGICAL INFORMATION**

*Ecotoxicological information on this product or its components appear in this section when such data is available.*

**12.1 Toxicity**

**Acute toxicity to fish**

For similar material(s):

Material is very toxic to aquatic organisms (LC50/EC50/IC50 below 1 mg/L in the most sensitive species).

For similar material(s):

LC50, Cyprinus carpio (Carp), 96 Hour, > 100 mg/l

For similar material(s):

LC50, Danio rerio (zebra fish), 96 Hour, > 120 mg/l

**Acute toxicity to aquatic invertebrates**

As product:

EC50, Daphnia magna (Water flea), semi-static test, 48 Hour, 19 mg/l

**Acute toxicity to algae/aquatic plants**

EbC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 100 mg/l

EbC50, diatom Navicula sp., 120 Hour, Biomass, 0.667 mg/l

**Toxicity to Above Ground Organisms**

oral LD50, Apis mellifera (bees), 48 Hour, 0.049micrograms/bee

contact LD50, Apis mellifera (bees), 48 Hour, 0.05micrograms/bee

**Toxicity to soil-dwelling organisms**

LC50, Eisenia fetida (earthworms), Based on information for a similar material; 14 d, > 458 mg/kg

**12.2 Persistence and degradability**

**spinosad (ISO)**

**Biodegradability:** Surface photodegradation is expected with exposure to sunlight. Material is not readily biodegradable according to OECD/EEC guidelines.

10-day Window: Fail

**Biodegradation:** < 1 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301B or Equivalent

**Stability in Water (1/2-life)**

Hydrolysis, pH 5, Half-life Temperature 25 °C, Stable

Hydrolysis, pH 7, Half-life Temperature 25 °C, Stable  
Hydrolysis, half-life, 0.84 - 0.96 d, pH 7, Half-life Temperature  
Hydrolysis, half-life, 200 - 259 d, pH 9, Half-life Temperature 25 °C

#### Propylene glycol

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Biodegradation may occur under anaerobic conditions (in the absence of oxygen).

10-day Window: Pass

**Biodegradation:** 81 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

**Biodegradation:** 96 %

**Exposure time:** 64 d

**Method:** OECD Test Guideline 306 or Equivalent

#### **12.3 Bioaccumulative potential**

**Bioaccumulation:** No data available.

#### **12.4 Mobility in soil**

##### spinosad (ISO)

For similar material(s):

Spinosyn A.

Expected to be relatively immobile in soil (Koc > 5000).

**Partition coefficient(Koc):** 35024

#### Propylene glycol

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient(Koc):** < 1 Estimated.

#### **12.5 Results of PBT and vPvB assessment**

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

#### **12.6 Other adverse effects**

No relevant data found.

## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste treatment methods**

If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

## **SECTION 14. TRANSPORT INFORMATION**

### **Classification for ROAD and Rail transport (ADR/RID):**

<b>14.1 UN number</b>	UN 3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(spinosad)
<b>14.3 Class</b>	9
<b>14.4 Packing group</b>	III
<b>14.5 Environmental hazards</b>	spinosad
<b>14.6 Special precautions for user</b>	

Hazard identification No: 90

### **Classification for SEA transport (IMO-IMDG):**

<b>14.1 UN number</b>	UN 3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(spinosad)
<b>14.3 Class</b>	9
<b>14.4 Packing group</b>	III
<b>14.5 Environmental hazards</b>	spinosad
<b>14.6 Special precautions for user</b>	EmS: F-A, S-F
<b>14.7 Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	

Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

<b>14.1 UN number</b>	UN 3082
<b>14.2 Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.(spinosad)
<b>14.3 Class</b>	9
<b>14.4 Packing group</b>	III
<b>14.5 Environmental hazards</b>	Not applicable
<b>14.6 Special precautions for user</b>	No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

**SECTION 15. REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Other regulations**

Registration Number: MAPP 12438

This product contains only components that have been either pre-registered, registered, are exempt from registration or are regarded as registered according to Regulation (EC) No. 1907/2006 (REACH). The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

**15.2 Chemical Safety Assessment**

For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

**SECTION 16. OTHER INFORMATION**

**Full text of H-Statements referred to under sections 2 and 3.**

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Full text of R-phrases referred to under sections 2 and 3**

R50	Very toxic to aquatic organisms.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	May cause long-term adverse effects in the aquatic environment.

**Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]**

Aquatic Acute - 1 - H400 - On basis of test data.  
Aquatic Chronic - 1 - H410 - Calculation method

**Revision**

Identification Number: 101193334 / A293 / Issue Date: 20.08.2014 / Version: 4.1

DAS Code: GF-976

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

Dow IHG	Dow Industrial Hygiene Guideline
GB EH40	UK. EH40 WEL - Workplace Exposure Limits
TWA	Long-term exposure limit (8-hour TWA reference period)
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW AGROSCIENCES LIMITED urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.