

DELTA METHRIN

Bandu®



Net contents: 1 litre

A broad spectrum pyrethroid insecticide for the control of aphids, caterpillars and a range of other pests in a wide range of agricultural and horticultural crops.

MAPP 16153

An emulsifiable concentrate formulation containing 25 g/L (2.8% w/w) deltamethrin. The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

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 CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate. However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection. TAKE OFF IMMEDIATELY all contaminated clothing. WHEN USING, DO NOT EAT, DRINK OR SMOKE. WASH CONCENTRATE from skin or eyes immediately. DO NOT BREATHE SPRAY. WASH HANDS AND EXPOSED SKIN before meals and after work. IF YOU FEEL UNWELL, seek medical advice (show the label where possible).

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 LERAP requirements DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within the distance specified for the crop to the top of the bank of a static or flowing water body, or within 1 m of the top of a ditch which is dry at the time of application. Aim spray away from water. ALL CROPS WITH A BUFFER ZONE GREATER THAN 5M ARE NOT ELIGIBLE FOR BUFFER ZONE REDUCTION UNDER THE LERAP HORIZONTAL BOOM SPRAYERS SCHEME. DO NOT ALLOW DIRECT SPRAY from broadcast air-assisted sprayers to fall within 30m of the top of the bank of a static or flowing waterbody when applied to raspberry and 50m when applied to apple and pear, unless a local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 5m of the top of a ditch which is dry at the time of application. Aim spray away from water.



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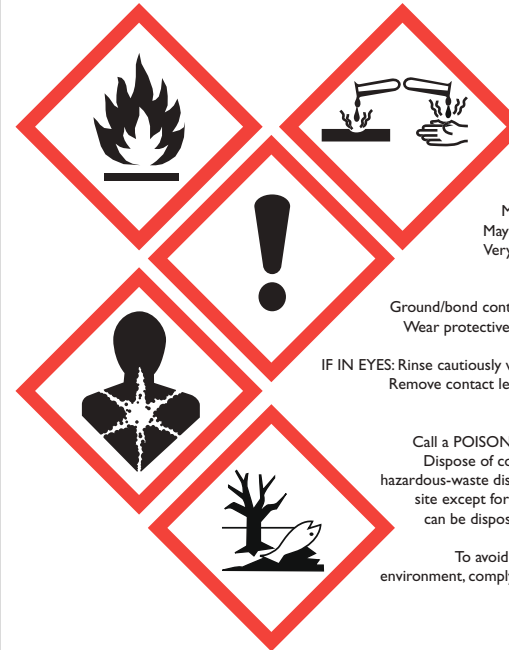
This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer or broadcast air assisted sprayer, either a LERAP must be carried out in accordance with CRD's published guidance or the statutory buffer zone as appropriate to the crop must be maintained. NOTE ALL BUFFER ZONES OF MORE THAN 5M VIA HORIZONTAL BOOM SPRAYER ARE NOT REDUCIBLE. The results of the LERAP must be recorded and kept available for three years. RISK TO NON-TARGET INSECTS OR OTHER ARTHROPODS when applied to crops other than cereals. See Directions for use

Storage and Disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS. KEEP OUT OF REACH OF CHILDREN. KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place. RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing 3 times. Add washings to the sprayer at the time of filling and dispose of safely. DO NOT RE-USE CONTAINER for any purpose. Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty containers which can be disposed of as non-hazardous waste.

Safety Information
BANDU

Contains 25 g/L (2.8% w/w) deltamethrin and solvent naphtha (petroleum), light aromatic.



Danger

Flammable liquid and vapour
 Harmful if swallowed
 May be fatal if swallowed and enters airways
 Causes skin irritation
 Caused serious eye damage
 Harmful if inhaled
 May cause respiratory irritation
 May cause drowsiness or dizziness
 Very toxic to aquatic life with long lasting effects

Ground/bond container and receiving equipment
 Wear protective gloves/protective clothing/eye protection
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF exposed concerned:
 Call a POISON CENTER or doctor/physician
 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.

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

IMPORTANT INFORMATION:**FOR USE ONLY AS AN AGRICULTURAL AND HORTICULTURAL INSECTICIDE**

Crops:	Maximum individual dose	Maximum total dose	Latest time of application
Broad bean, field bean, combining pea, vining pea	300 ml/ha	600 ml/ha/crop	7 days before harvest
Cauliflower	300 ml/ha	900 ml/ha/crop	7 days before harvest
Brussels sprout, cabbage	300 ml/ha	600 ml/ha/crop	7 days before harvest
Lettuce (outdoor)	250 ml/ha	750 ml/ha/crop	7 days before harvest
Mustard (spring), oilseed rape (spring)	300 ml/ha	900 ml/ha/crop	End of flowering (not less than 45 days before harvest)
Mustard (winter), oilseed rape (winter)	300 ml/ha	1200 ml/ha/crop	End of flowering (not less than 45 days before harvest)
Sugar beet, swede, turnip	300 ml/ha	300 ml/ha/crop	30 days before harvest
Wheat (winter), barley (winter) and oats (winter)	250 ml/ha	750 ml/ha/crop	Up to and including early dough stage (GS 83) (not less than 30 days before harvest)
Barley (spring), oats (spring) and wheat (spring)	250 ml/ha	500 ml/ha/crop	Up to and including early dough stage (GS 83) (not less than 30 days before harvest)
Apples and pears	350 ml/ha	1050 ml/ha/crop	7 days before harvest
Raspberries	500 ml/ha	1500 ml/ha/crop	7 days before harvest
Cucumber (protected), tomato (protected)	70 ml/100 litres water	Maximum number of treatments 3 per crop	7 days before harvest
Pepper (protected)	50 ml/100 litres water	Maximum number of treatments 3 per crop	7 days before harvest
Amenity vegetation (outdoor), ornamental plant production (outdoor), ornamental plant production (protected)	70 ml/100 litres water	Maximum number of treatments 3 per year	-

The following Non-Reducible Aquatic Buffer Zones must be observed:

Crops/situations:	Aquatic buffer zone distance (metres):
Amenity vegetation (outdoor), barley (spring), barley (winter), broad bean, Brussels sprout, cabbage, cauliflower, combining pea, field bean, lettuce (outdoor), mustard (spring), mustard (winter), oats (spring), oats (winter), oilseed rape (spring), oilseed rape (winter), ornamental plant production (outdoor), sugar beet, swede, turnip, vining pea, wheat (spring), wheat (winter)	7

Other Specific Restrictions:

When used on crops with a greater than 5m non-reducible aquatic buffer zone this product must not be applied via hand-held equipment.

To protect non-target insects/arthropods when applied to cereals, respect an untreated buffer zone of 5 meters to non-crop land

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.

DIRECTIONS FOR USE

IMPORTANT: This leaflet is approved as part of the label. All instructions on this leaflet and on the label should be read carefully in order to obtain successful results from the use of this product.

RESTRICTIONS

DO NOT spray crops suffering from drought or other physical or chemical stress.

DO NOT spray wet crops liable to run-off. Some varieties of ornamentals are particularly sensitive to chemical sprays, so treat a small number of plants first to determine the reaction.

Do not apply this product in tank mixture with a triazole-containing fungicide when bees are likely to be actively foraging in the crop. Consult manufacturer.

PROTECT FROM FROST

STORE IN A SAFE DRY PLACE designated as an agrochemical store

Bandu is rainfast 1 hour after spraying. It can be applied in frosty weather provided foliage is not covered with ice.

Very high temperatures, greater than 35°C (greater than 95°F) may reduce efficacy or persistence.

Avoid spraying within 5 m of the field boundary to reduce effects on non-target insects or other arthropods when applied to the following crops: Amenity vegetation (outdoor), broad bean, Brussels sprout, cabbage, cauliflower, combining pea, field bean, lettuce (outdoor), mustard (spring), mustard (winter), oilseed rape (spring), oilseed rape (winter), ornamental plant production (outdoor), sugar beet, swede, turnip and vining pea.

The best available application technique, which minimises off-target drift should be used to reduce effects on non-target insects or other arthropods when applying to apple, pear and raspberry.

PESTS CONTROLLED

The possible development of pests resistant to Bandu cannot be excluded or predicted. Where such resistant strains occur, Bandu is unlikely to give satisfactory control. When certain insects may develop resistance to Headland Agrochemicals products and since such circumstances are beyond our control, Headland Agrochemicals will be under no liability for any loss or damage whatsoever.

Opomyza spp. (Yellow cereal fly), Aphids, Whitefly, *Phyllotreta* spp., Brassica flea beetle, Pea and Bean Weevil, Pea Moth, Pollen Beetle, Cabbage Seed Weevil, Brassica Pod Midge, Cabbage Stem Flea Beetle, Rape Winter Stem Weevil, Caterpillars (various), *Psylla* spp., (Apple and Pear Suckers), *Cydia pomonella* (Codling Moth), Tortrix moth complex, Capsid Bugs, Scale Insects, Mealy Bugs, Cutworms (Noctuid larvae), Thrips, Sawfly, Raspberry Beetle, Pea Midge.

Qualified minor use recommendation:

Based on limited data control of *Phyllotreta* spp. in Spring Oilseed Rape would also

be expected from applications of Bandu applied in accordance with the Crop Specific Information section.

CROP SPECIFIC INFORMATION

APPLICATION

Sprayers should be THOROUGHLY CLEANED before use and filters and jets checked for damage and blockages.

200-1500 litres of water per hectare depending on crop and pest.

A pressure of 2-3 bar (30-40 psi) is recommended.

Apply as a **MEDIUM** quality spray (as defined by BCPC). Bandu is not systemic and it is, therefore, important that the amount of water is sufficient to permit good spray coverage of the foliage, particularly in beans, peas, glasshouse crops and ornamentals. Use only nozzles designed and recommended for the volume to be applied.

Wheat and Barley

For the control of Barley yellow dwarf virus (and some control of *Opomyza*).

Where BYDV has previously been a problem: For crops drilled before mid-September, spray when aphids are first found in the crop or in mid-October. If the crop is sprayed before early October, a second spray in early November may be beneficial. For crops drilled mid-September to early October, spray any time from mid-October to early November.

Where BYDV has not been a problem or if drilled after early October: Spray any time from late October to early November if aphids found or on specialist advice.

In mild winters further sprays may be needed

Dose: 200 ml/ha in 200 litres of water

For the control of *Opomyza* (yellow cereal fly). Apply at start of egg hatch (normally late January to February) or according to specialist advice. Crops most at risk are those drilled before mid-October in fields with a history of *Opomyza*.

Dose: 250 ml/ha in at least 200 litres of water.

Wheat, Barley and oats

For the control of Aphids on ears. Apply when two-thirds or more of heads are infested and numbers increasing (equivalent to 5 aphids per head).

Dose: 250 ml/ha in at least 200 litres of water.

Brussels sprouts, cabbage, cauliflower, swedes and turnips

For the control of Caterpillars (and some control of aphids ++ and whitefly).

For **Non-routine treatment**; apply at the first stage of attack or as a preventative spray.

Dose: 300 ml/ha in at least 400 litres of water

For **pre-harvest clean-up**, a reduced dose may be used when only short persistence of the product is required and applied 7 days prior to harvest.

Dose: 150 ml/ha in at least 400 litres of water

For the control of Brassica flea beetle (*Phyllotreta* spp.), apply when damage is first seen.

Repeat at 14-day intervals if necessary
Dose: 300 ml/ha in 200-400 litres of water

Refer to Important information box for maximum total dose for each crop type.

Peas and Bean (broad, and field)

For the control of pea and bean weevil, apply at first signs of adult damage (leaf notching).

Repeat after 2-3 weeks if prolonged and heavy attack.

Dose: 300 ml/ha in 200-400 litres of water

Pea midge; Apply sprays when local warnings indicate for control of pea midge and improvement in pod numbers. A second application may be necessary if the risk remains high

Dose: 250 ml/ha in 200 - 400 litres of water

Peas

For the control of Pea moth (and some control of pea aphids). Apply according to the pea moth pheromone trapping system in conjunction with specialist advice.

Dose: 250 ml/ha in at least 400 litres of water

Sugar Beet

For the control of Flea beetle, apply at the first signs of damage.

Dose: 300 ml/ha in 200-400 litres of water

Spring Oilseed Rape and Mustard

For the control of Pollen beetle, Apply at green bud stage: If pollen beetle numbers are at threshold levels. A second application may be necessary if pest attack is prolonged.

Dose: 300 ml/ha in at least 200 litres of water.

For the control of Cabbage seed weevil, brassica pod midge, Apply at green to yellow bud stage if cabbage seed weevil numbers are at threshold levels. Repeat during flowering if pest attack is prolonged. Applications during flowering will also give control of brassica pod midge.

Dose: 300 ml/ha in at least 200 litres of water when applied during flowering

Qualified Minor use recommendation:

For the control of Brassica flea beetle (*Phyllotreta* spp.), apply when damage is first seen.

Repeat at 14-day intervals if necessary

Dose: 300 ml/ha in 200-400 litres of water

This recommendation is based on limited effectiveness data.

Winter Oilseed Rape

For some control of Beet Western Yellows Virus (BWYV), Best results will be obtained by spraying at the 2-4 leaf stage, but spraying at 5-10 leaves can give good control.

Dose: 250 ml/ha in 200 litres of water.

For control of Cabbage stem flea beetle and useful control, of rape winter stem weevil,

Apply when adults are seen to be causing leaf damage, usually late August to October.

Spray for flea beetle larvae once they can be found in leaf stalks, usually late October/early November. A second spray may be necessary to control later hatches

Dose: 250 ml/ha in 200 litres of water

For control of Pollen beetle, Apply at green bud stage: If pollen beetle numbers are at threshold levels. A second application may be necessary if pest attack is prolonged.

Dose: 300 ml/ha in at least 200 litres of water.

For control of Cabbage seed weevil, brassica pod midge, Bandu can be applied at any time during the flowering period if cabbage seed weevil numbers are at threshold levels, but best results will be obtained from applications made at the end of flowering on the main raceme (GS 49), usually 75% petal fall. Later applications may not prove effective as Bandu is primarily a contact insecticide. There is no spray threshold for brassica pod midge. Treatment decision should be based on previous local experience.

Applications for seed weevil will also control brassica pod midge.

Dose: 300 ml/ha in at least 200 litres of water

Lettuce (outdoor):

For the control of Cutworms. Apply when pest first seen.

Dose: 250 ml/ha in at least 1000 litres of water.

HORTICULTURAL CROPS

Apples:

For the control of caterpillars, apple sucker, apple grass aphid. Apply at green cluster.

For the control of codling and tortrix moth, sawfly, late capsid. Apply at about mid-June or 10-14 days after light or pheromone traps first record a steady emergence of moths.

A further application may be applied three weeks later. A third spray may be necessary in late July or early August if tortrix moths are a problem.

Dose: 350 ml/ha in at least 200 litres of water or High Volume: 20 ml per 100 litres of water

Pears:

For the control of Pear sucker# (overwintered adults, eggs and nymphs). Apply Pre-blossom - At any stage between bud burst and white bud or Post-blossom - At first signs of pest build-up, any time from petal fall onwards. Do not apply during blossom period.

Dose: 350 ml/ha in at least 200 litres of water or High Volume: 20 ml per 100 litres of water

Raspberries:

For the control of Raspberry beetle. Apply when about 80% of the blossom is over (usually mid June). (One spray when pink fruit is seen is usually adequate although for high quality dessert fruit two sprays may be applied). A further application may be made when the first fruit is colouring, (usually about 2 weeks later).

Dose: Conventional volume only: 500 ml/ha in 1000 litres of water

Glasshouse crops :-cucumbers, tomatoes, and ornamental plant production

(ornamentals and pot plants):

For the control of Whitefly†, scale insects, aphids, caterpillars, mealy bugs. Apply when pest first seen. For whitefly, thoroughly wet plants, especially leaf under-surface. Repeat application as required:

Dose: High volume only 70 ml per 100 litres of water.

Glasshouse crops :- peppers

For the reduction of caterpillars: apply when pest first seen. Repeat application as required.

Some effect on Whitefly‡, scale insects, aphids and mealy bugs may also be seen.

Dose: High volume only 50 ml per 100 litres of water.

Ornamentals plant production (outdoor ornamentals, trees, shrubs and nursery stock) and amenity vegetation (outdoor ornamentals, trees and shrubs)

For the control of Whitefly‡, scale insects, caterpillars, capsids, thrips, aphids, mealy bugs. Apply when pest first seen. For whitefly, thoroughly wet plants, especially leaf under-surface. Repeat as required.

Dose: High volume only 70 ml/per 100 litres of water*

†† Strains of some aphid species are resistant to many aphicides. Where aphids resistant to products containing pyrethroid insecticides occur, Bandu is unlikely to give satisfactory control.

‡ Glasshouse whitefly strains resistant to one or more groups of insecticides are widespread. Where strains resistant to products containing pyrethroid insecticides occur, Bandu is unlikely to give satisfactory control.

Note: resistant strains of the tobacco whitefly are also known to occur.

Pear suckers resistant to one or more groups of insecticides are widespread. Where strains resistant to products containing pyrethroid insecticides occur, Bandu is unlikely to give satisfactory control. Where repeat treatments are necessary use different active ingredients.

RESISTANCE MANAGEMENT STRATEGY

Total reliance on one pesticide will hasten the development of resistance; pesticides of different chemical types or alternative control measures should be included in a planned programme.

Alternating insecticides with different modes of action is a recognised anti-resistance strategy and Bandu should always be used in alternation with other insecticides of a different mode of action where available. Bandu should always be applied at the recommended rate of use and in sufficient water volume to achieve the required spray penetration into the crop and uniform coverage necessary for optimal pest control.

MIXING

Prior to mixing EC formulations, such as Bandu, it is particularly important to thoroughly wash out the sprayer using a recommended detergent. Solvents in EC formulations can remove pesticides adhering to the tank and other parts of the sprayer.

Shake well before use. Add the required quantity immediately at the beginning of filling the spray tank with water. Keep the spray agitation in action and add the required quantity of water. Continue agitation until spraying is completed. After spraying, thoroughly wash out the spray tank.

Section 6 of the Health and Safety at Work Act

Additional Product Safety Information (This section does not form part of the approved product label). The product label provides information on a specific pesticidal use of the product; do not use otherwise, unless you have assessed any potential hazard involved, the safety measures required and that the particular use has "off-label" approval or is otherwise permitted. The information on this label is based on the best available information including data from test results.

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

BANDU

Version 3 / GB Revision Date: 16.05.2014 102000025895

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name BANDU

Product code (UVP) 80183062

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

Use Insecticide

1.3 Details of the supplier of the safety data sheet

Supplier Bayer CropScience Limited, 230 Cambridge Science Park, Milton Road, Cambridge, Cambridgeshire, CB4 0WB, United Kingdom

Telephone +44(0)1223 226500

Telefax +44(0)1223 426240

Responsible Department Email: ukinfo@bayercropscience.com

1.4 Emergency telephone no.: Emergency telephone no. 0800-220876 (UK 24 hr.) +44(0)1635-563000 (Overseas 24 hr)

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Flammable liquids: Category 3. H226: Flammable liquid and vapour.

Acute toxicity: Category 4. H302: Harmful if swallowed.

Aspiration hazard: Category 1. H304: May be fatal if swallowed and enters airways.

Skin irritation: Category 2. H315: Causes skin irritation.

Serious eye damage: Category 1. H318: Causes serious eye damage.

Acute toxicity: Category 4. H332: Harmful if inhaled.

Specific target organ toxicity - single exposure: Category 3. H335: May cause respiratory irritation.

Specific target organ toxicity - single exposure: Category 3. H336: May cause drowsiness or dizziness.

Acute aquatic toxicity: Category 1. H400: Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1. H410: Very toxic to aquatic life with long lasting effects.

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

R10. Xn Harmful, R20/22. Xi Irritant, R37/38. Xi Irritant, R41. N Dangerous for the environment, R50/53. Xn Harmful, R65

2.2 Label elements. Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended. Hazard label for supply/use required.

Hazardous components which must be listed on the label: Deltamethrin. Solvent Naphtha (petroleum), light aromatic



Signal word: Danger

Hazard statements

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H410 Very toxic to aquatic life with long lasting effects.

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

Precautionary statements

P240 Ground/bond container and receiving equipment.
 P280 Wear protective gloves/protective clothing/eye protection.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.
 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 nonhazardous waste.

2.3 Other hazards: Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures. Chemical nature: Emulsifiable concentrate (EC). Deltamethrin 25 g/l

Hazardous components

R-phrases according to EC directive 67/548/EEC

Hazard statements according to Regulation (EC) No. 1907/2006

Name	CAS-No. / EC-No.	Classification		Conc. [%]
		EC Directive 67/548/EEC	Regulation (EC) No 1272/2008	
Deltamethrin	52918-63-5 258-256-6	T; R23/25 N; R50/53	Acute Tox. 3, H331 Acute Tox. 3, H301 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	2.81
Tetrapropylene benzene sulfonate, calcium salt	11117-11-6 234-360-7	Xn; R21 Xi; R38, R41 R52/53	Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 3, H412	> 1.00 - < 5.00
2-Methylpropan-1-ol	78-83-1 201-148-0	R10 Xi; R37/38, R41 R67	Flam. Liq. 3, H226 STOT SE 3, H335 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H336	> 1.00 - < 5.00
2,6-Di-tert-butyl-4-methylphenol	128-37-0 204-881-4	N; R50/53	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	> 0.10 - < 0.25
Solvent Naphtha (petroleum), light aromatic	64742-95-6 265-199-0	R10 Xi; R37 Xn; R65 R66 R67 N; R51/53	Flam. Liq. 3, H226 STOT SE 3, H336 STOT SE 3, H335 Asp. Tox. 1, H304 Aquatic Chronic 2, H411	> 25.00

Further information

Deltamethrin	52918-63-5	M-Factor: 1,000,000 (acute)
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For the full text of the R-phrases/ Hazard statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures**

General advice Remove contaminated clothing immediately and dispose of safely.
 Move the victim to fresh air and keep at rest. Call a physician or poison control center immediately.
Inhalation Immediately wash with plenty of soap and water for at least 15 minutes. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. In case of skin irritation, application of oils or lotions containing vitamin E may be considered. If symptoms persist, call a physician.
Skin contact

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. Apply soothing eye drops, if needed anaesthetic eye drops. Get medical attention if irritation develops and persists.

Ingestion Rinse out mouth and give water in small sips to drink. Do NOT induce vomiting. Risk of product entering the lungs on vomiting after ingestion. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms Local:, Skin and eye paraesthesia which may be severe, Usually transient with resolution within 24 hours, Skin, eye and mucous membrane irritation, Cough, Sneezing Systemic:, Discomfort in the chest, Tachycardia, Hypotension, Nausea, Abdominal pain, Diarrhoea, Vomiting, Dizziness, Blurred vision, Headache, Anorexia, Somnolence, Coma, Convulsions, Tremors, Prostration, Airway hyperreaction, Pulmonary oedema, Palpitation, Muscular fasciculation, Apathy

4.3 Indication of any immediate medical attention and special treatment needed

Risks This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.

Treatment Local treatment: Initial treatment: symptomatic. Systemic treatment: Initial treatment: symptomatic. Monitor: respiratory and cardiac functions. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Keep respiratory tract clear. Oxygen or artificial respiration if needed. In case of convulsions, a benzodiazepine (e.g. diazepam) should be given according to standard regimens. If not effective, phenobarbital may be used. Contraindication: atropine. Contraindication: derivatives of adrenaline. There is no specific antidote. Recovery is spontaneous and without sequelae.

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture: Dangerous gases are evolved in the event of a fire.

5.3 Advice for firefighters. Special protective equipment for fire-fighters: In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

Further information Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Precautions Keep people away from and upwind of spill/leak. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke.

6.2 Environmental precautions

Do not allow to get into surface water, drains and ground water. If spillage enters drains leading to sewage works inform local water company immediately. If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning: up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Clean floors and contaminated objects with plenty of water.

Additional advice: Check also for any local site procedures.

6.4 Reference to other sections

Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling. Advice on safe handling: No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.

Advice on protection against fire and explosion: Keep away from heat and sources of ignition. Vapours may form explosive mixture with air. Take measures to prevent the build up of electrostatic charge. Use only explosion-proof equipment.

Hygiene measures: When using, do not eat, drink or smoke. Remove soiled clothing immediately and clean thoroughly before using again. Contaminated work clothing should not be allowed out of the workplace. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Wash hands immediately after work, if necessary take a shower.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Store in a place accessible by authorized persons only. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from freezing. Keep away from direct sunlight.

Advice on common storage: Keep away from food, drink and animal feedingstuffs.

Suitable materials: Coextruded containers with an internal barrier layer made of ethylene vinyl alcohol copolymer (EVOH) Black mild steel sheet with interior coating

7.3 Specific end uses: Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION: 8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Deltamethrin	52918-63-5	0.02 mg/m ³ (TWA)		OES BCS*
2-Methylpropan-1-ol	78-83-1	231 mg/m ³ /75 ppm (STEL)	12 2011	EH40 WEL
2-Methylpropan-1-ol	78-83-1	154 mg/m ³ /50 ppm (TWA)	12 2011	EH40 WEL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Additional advice: Observe: Exposure Limits In Air, Group 3: 100 mg/m³/ 20 ppm. (aromatic-rich hydrocarbon mixes with > 25% aromatics TRGS 901, No. 72).

8.2 Exposure controls

Refer to COSHH assessment (Control of Substances Hazardous to Health (Amendment) Regulations 2004).

Engineering controls should be used in preference to personal protective equipment wherever practicable. Refer also to COSHH Essentials.

Personal protective equipment: In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection: Wear respirator with an organic vapours and gas filter mask (protection factor 10) conforming to EN140 type A or equivalent. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection: Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0.4 mm). Wash when contaminated and dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Eye protection: Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection: Wear standard coveralls and Category 3 Type 6 suit. If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently. If chemical protection suit is splashed, sprayed or significantly contaminated, decontaminate as far as possible, then carefully remove and dispose of as advised by manufacturer.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	Liquid
Colour	yellow
Odour	aromatic
pH	4.0 - 6.0 at 1 % (23 °C) (deionized water)
Flash point	48 °C
Ignition temperature	> 450 °C. The data refer to solvent naphtha petroleum.
Upper explosion limit	7.00 %(V). The data refer to solvent naphtha petroleum.
Lower explosion limit	0.8 %(V). The data refer to solvent naphtha petroleum.
Relative vapour density	1.00. The data refer to solvent naphtha petroleum.
Density	ca. 0.89 g/cm ³ at 20 °C
Water solubility	miscible
Partition coefficient: n-octanol/ water	Deltamethrin: log Pow: 6.4 at 25 °C
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition Stable under normal conditions.

10.2 Chemical stability Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions No hazardous reactions when stored and handled according to prescribed instructions.

10.4 Conditions to avoid Extremes of temperature and direct sunlight.

10.5 Incompatible materials Store only in the original container.

10.6 Hazardous decomposition products No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity LD50 (rat) 416 mg/kg

Acute inhalation toxicity LC50 (rat) 2.69 mg/l. Exposure time: 4 h. Irritating to respiratory system.

Acute dermal toxicity LD50 (rat) > 2,000 mg/kg.

Skin irritation Irritating to skin. (rabbit)

Eye irritation Severe eye irritation. (rabbit)

Sensitisation Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity: Deltamethrin caused neurobehavioral effects and/or neuropathological changes in animal studies. The toxic effects of Deltamethrin are related to transient hyperactivity typical for pyrethroid neurotoxicity.

Assessment Mutagenicity: Deltamethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity: Deltamethrin was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction: Deltamethrin did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity: Deltamethrin caused developmental toxicity only at dose levels toxic to the dams.

The developmental effects seen with Deltamethrin are related to maternal toxicity.

Further information: The toxicological data refer to a similar formulation.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

LC50 (Rainbow trout (*Oncorhynchus mykiss*)) 0.00925 mg/l.

Exposure time: 96 h. Test conducted with a similar formulation.

Toxicity to aquatic invertebrates

EC50 (Water flea (*Daphnia magna*)) 0.00011 mg/l. Exposure time: 48 h

Test conducted with a similar formulation.

Toxicity to aquatic plants

EC50 (*Selenastrum capricornutum*) 60.5 mg/l. Exposure time: 96 h

Test conducted with a similar formulation.

12.2 Persistence and degradability

Biodegradability

Deltamethrin: not rapidly biodegradable

Koc

Deltamethrin: Koc: 10240000

12.3 Bioaccumulative potential

Bioaccumulation

Deltamethrin: Bioconcentration factor (BCF) 1,400. Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil

Deltamethrin: Immobile in soil

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment

Deltamethrin: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Other adverse effects

Additional ecological information No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant. Advice may be obtained from the local waste regulation authority (part of the Environment Agency in the UK).

Contaminated packaging: Small containers (< 10 l or < 10 kg) should be rinsed thoroughly using an integrated pressure rinsing device, or, by manually rinsing three times. Add washings to sprayer at time of filling. Dispose of empty and cleaned packaging safely. Large containers (> 25 l or > 25 kg) should not be rinsed or re-used for any other purpose. Return large containers to supplier. Follow advice on product label and/or leaflet.

Waste key for the unused product 020108 agrochemical waste containing dangerous substances

SECTION 14: TRANSPORT INFORMATION**ADR/RID/ADN**

14.1 UN number	1993
14.2 Proper shipping name	FLAMMABLE LIQUID, N.O.S. (DELTAMETHRIN, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)
14.3 Transport hazard class(es)	3
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Hazard no.	30
Tunnel Code	D/E
Special Provision	640E

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG

14.1 UN number	1993
14.2 Proper shipping name	FLAMMABLE LIQUID, N.O.S. (DELTAMETHRIN, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)
14.3 Transport hazard class(es)	3
14.4 Packing group	III
14.5 Marine pollutant	YES

IATA

14.1 UN number	1993
14.2 Proper shipping name	FLAMMABLE LIQUID, N.O.S. (DELTAMETHRIN, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)
14.3 Transport hazard class(es)	3
14.4 Packing group	III
14.5 Environm. Hazardous Mark	NO

UK 'Carriage' Regulations

14.1 UN number	1993
14.2 Proper shipping name	FLAMMABLE LIQUID, N.O.S. (DELTAMETHRIN, SOLVENT NAPHTHA (PETROLEUM) LIGHT AROMATIC SOLUTION)
14.3 Transport hazard class(es)	3
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Emergency action code	3Y

14.6 Special precautions for user: See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****UK and Northern Ireland Regulatory References**

This material may be subject to some or all of the following regulations (and any subsequent amendments). Users must ensure that any uses and restrictions as indicated on the label and/or leaflet are followed.

Transport	Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No 1348). Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997 (SI 1997 No 2367). Air Navigation Dangerous Goods Regulations 2002 (SI 2002 No 2786)
Supply and Use	Chemical (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No 716). Chemical (Hazard Information and Packaging for Supply) (Northern Ireland) Regulations 2009. Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No 2677). EH40 Occupational Exposure Limits - Table 1 List of approved workplace exposure limits. Control of Pesticide Regulations 1986. Dangerous Substances and Explosive Atmospheres Regulations 2002

Waste Treatment	Environmental Protection Act 1990, Part II. Environmental Protection (Duty of Care) Regulations 1991. The Waste Management Licensing Regulations 1994 (as amended). Hazardous Waste Regulations 2005 (Replacing Special Waste Regulations 1996 as amended) Landfill Directive Regulation on Substances That Deplete the Ozone Layer 1994 (EEC/3093/94) Water Resources Act 1991 Anti-Pollution Works Regulations 1999
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Further information: WHO-classification: II (Moderately hazardous).

5.2 Chemical Safety Assessment.

A chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION**Text of R-phrases mentioned in Section 3**

R10	Flammable.
R21	Harmful in contact with skin.
R23/25	Toxic by inhalation and if swallowed.
R37	Irritating to respiratory system.
R37/38	Irritating to respiratory system and skin.
R38	Irritating to skin.
R41	Risk of serious damage to eyes.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

Text of the hazard statements mentioned in Section 3

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

The above information is intended to give general health and safety guidance on the storage and transport of the product. It is not intended to apply to the use of the product for which purposes the product label and any appropriate technical usage literature available should be consulted and any relevant licenses, consents or approvals complied with. The requirements or recommendations of any relevant site or working procedure, system or policy in force or arising from any risk assessment involving the substance or product should take precedence over any of the guidance contained in this safety data sheet where there is a difference in the information given. The information provided in this safety data sheet is accurate at the date of publication and will be updated as and when appropriate. No liability will be accepted for any injury, loss or damage resulting from any failure to take account of information or advice contained in this safety data sheet. **Reason for Revision:** Section 12. Ecological information. Safety Data Sheet according to Regulation (EU) No. 453/2010. This version replaces all previous versions.

DELTA METHRIN

Bandu®



Net contents: 1 litre

A broad spectrum pyrethroid insecticide for the control of aphids, caterpillars and a range of other pests in a wide range of agricultural and horticultural crops.

MAPP 16153

An emulsifiable concentrate formulation containing 25 g/L (2.8% w/w) deltamethrin. The (COSHH) Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

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 CLOTHING (COVERALLS), SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling the concentrate. However, engineering controls may replace personal protective equipment if a COSHH assessment shows they provide an equal or higher standard of protection. TAKE OFF IMMEDIATELY all contaminated clothing. WHEN USING, DO NOT EAT, DRINK OR SMOKE. WASH CONCENTRATE from skin or eyes immediately. DO NOT BREATHE SPRAY. WASH HANDS AND EXPOSED SKIN before meals and after work. IF YOU FEEL UNWELL, seek medical advice (show the label where possible).

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 LERAP requirements DO NOT ALLOW DIRECT SPRAY from horizontal boom sprayers to fall within the distance specified for the crop to the top of the bank of a static or flowing water body, or within 1 m of the top of a ditch which is dry at the time of application. Aim spray away from water. ALL CROPS WITH A BUFFER ZONE GREATER THAN 5M ARE NOT ELIGIBLE FOR BUFFER ZONE REDUCTION UNDER THE LERAP HORIZONTAL BOOM SPRAYERS SCHEME. DO NOT ALLOW DIRECT SPRAY from broadcast air-assisted sprayers to fall within 30m of the top of the bank of a static or flowing waterbody when applied to raspberry and 50m when applied to apple and pear, unless a local Environment Risk Assessment for Pesticides (LERAP) permits a narrower buffer zone, or within 5m of the top of a ditch which is dry at the time of application. Aim spray away from water.



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 Rectors Lane, Pentre, Deeside, Flintshire CH5 2DH
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For 24 hour emergency information contact
 Telephone: 01244 537370

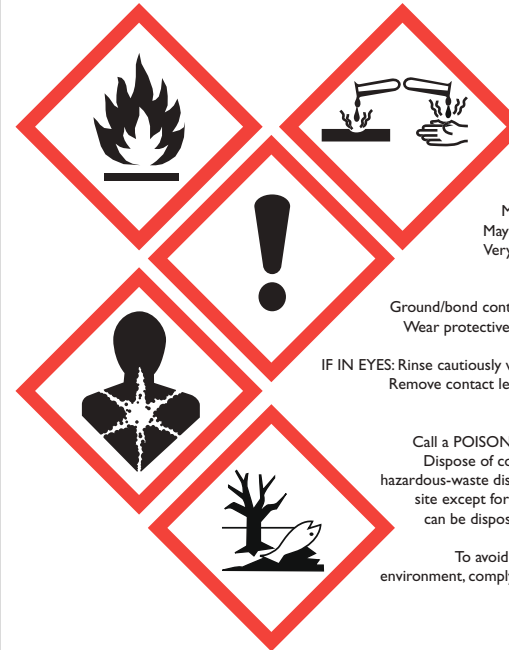
This product qualifies for inclusion within the Local Environment Risk Assessment for Pesticides (LERAP) scheme. Before each spraying operation from a horizontal boom sprayer or broadcast air assisted sprayer, either a LERAP must be carried out in accordance with CRD's published guidance or the statutory buffer zone as appropriate to the crop must be maintained. NOTE ALL BUFFER ZONES OF MORE THAN 5M VIA HORIZONTAL BOOM SPRAYER ARE NOT REDUCIBLE. The results of the LERAP must be recorded and kept available for three years. RISK TO NON-TARGET INSECTS OR OTHER ARTHROPODS when applied to crops other than cereals. See Directions for use

Storage and Disposal

KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDINGSTUFFS. KEEP OUT OF REACH OF CHILDREN. KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place. RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing 3 times. Add washings to the sprayer at the time of filling and dispose of safely. DO NOT RE-USE CONTAINER for any purpose. Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty containers which can be disposed of as non-hazardous waste.

Safety Information
BANDU

Contains 25 g/L (2.8% w/w) deltamethrin and solvent naphtha (petroleum), light aromatic.



Danger

Flammable liquid and vapour
 Harmful if swallowed
 May be fatal if swallowed and enters airways
 Causes skin irritation
 Caused serious eye damage
 Harmful if inhaled
 May cause respiratory irritation
 May cause drowsiness or dizziness
 Very toxic to aquatic life with long lasting effects

Ground/bond container and receiving equipment
 Wear protective gloves/protective clothing/eye protection
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF exposed concerned:
 Call a POISON CENTER or doctor/physician
 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.

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