

## Safety Data Sheet

### ZENIT - Reg. No: L 9073 (Act No 36 of 1947)

Date of issue: 30/07/2010

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1) IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER.	
<b>Product name:</b>	ZENIT
<b>Other means of identification:</b>	Deltamethrin 25 g/L EW
<b>UN number:</b>	3351
<b>Recommended use:</b>	Insecticide
<b>Restrictions on use:</b>	Agriculture
<b>Distributed by:</b>	MERIDIAN AGRITECH P O BOX 436 MODDERFONTEIN TEL 011 8228509 FAX 0866901386 MOBILE: 0834006056 <a href="http://www.agritech.co.za">www.agritech.co.za</a>
<b>Emergency Number:</b>	POISON CENTRE (UNITAS HOSPITAL) 012 664 1100 WESTERN CAPE POISONS TELEPHONE SERVICE 0861 555 777 RAPID SPILL RESPONSE 0800 775 3305 GRIFFON POISON CENTRE: 082 446 8946
<b>Chemical Name:</b>	S)- $\alpha$ -cyano-3-phenoxybenzyl (1 <i>R</i> ,3 <i>R</i> )-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate (IUPAC)
2) Classification of the substance / mixture:	
<b>Classification of the product:</b>	Xn F R11, R20/22, R36/37, R43, R51, R57 <b>Safety – Phrase:</b> S 1/2,S13, S 16, S 23, S24/25, S 36/37/39 H301. H331 H400 H410 Full text of symbols and R-phrases: see section 15.
<b>Label elements:</b>	  Signal word: Danger
<b>Health effects: eyes:</b>	May cause severe irritation to eyes.
<b>Health effects: skin:</b>	Harmful if absorbed through skin. Irritating to skin. May cause burning, tingling or itching sensations. These usually readily disappear within several hours or one day following exposure.

<b>Health effects: ingestion</b>	Harmful if swallowed. Symptoms of poisoning: May include dizziness, headache, nausea, fatigue, vomiting and increased stomach secretion, listlessness, muscular fasciculation of limbs, unconsciousness, coma and convulsions (at very high dosages).
<b>Health effects: inhalation</b>	May be harmful. May cause nasal discharge, scratchy throat, ataxia, urinary incontinence, convulsions, tremors and nervous irritability.
<b>Health effects: Other</b>	No data available

### 3) COMPOSITION / INFORMATION ON INGREDIENTS:

Mixture:

Chemical name	% composition	CAS No.	EC No.	Classification according to Regulation EC 1272/2008 (CLP)	Classification according to 67/548/EEC
Deltamethrin	2.5%	52918-63-5	258-256-6	Acute Tox. 3 H301. Acute Tox. 3 H331 Aquatic Acute 1 H400 Aquatic Chronic 1 H410	Danger

Full text of R- and S-phrases: see section 15.

### 4) First Aid Measures:

<b>Eye contact:</b>	Flush eyes with plenty of water for at least 15-20 minutes holding eyelids open. Remove contact lenses. Seek medical assistance if irritation persists.
<b>Skin contact:</b>	Immediately remove contaminated clothing, shoes and leather goods and wash body gently but thoroughly with cold water and a non-abrasive soap. Apply olive oil to the affected area as this should afford some relief. After washing the affected area as above, apply olive oil. Wash contaminated clothing thoroughly before re-use. Seek medical assistance if irritation persists.
<b>Ingestion:</b>	Never give anything by mouth to an unconscious person. If safe to do so, rinse mouth out with water. <b>Do not induce vomiting.</b> If patient is conscious, give the patient water to drink and keep the patient at rest. For advice, contact the National Poisons Centre. <b>Seek medical assistance immediately.</b>
<b>Inhalation:</b>	Remove patient to fresh air. Loosen clothing around neck. Lie down and keep warm and rested. If breathing is shallow or has stopped ensure airway is clear and apply resuscitation. Seek medical assistance if irritation persists.
<b>Most important symptoms and effects, acute and delayed:</b>	None known
<b>Indication of immediate medical attention and special treatment needed: Advice to physician</b>	Treat symptomatically after decontamination. No specific antidote is available. <b>Ingestion</b> Consider: Gastric lavage with water or 5% sodium bicarbonate solution. Treat convulsions with anti-convulsants. Vomiting may be induced by the use of Ipecac syrup. Over-exposure: May cause local skin irritation (burning sensation on the face and elsewhere) and irritation of the respiratory tract (may cause rhinorrhea, dyspnea and chest tightness.)

### 5) Fire-Fighting Measures:

<p><b>Suitable extinguishing media:</b></p> <p><b>Unsuitable extinguishing media:</b></p> <p><b>Special hazards arising from the substance or mixture:</b></p>	<p>Carbon dioxide, dry powder, alcohol-resistant foam. Water spray can be used to cool unaffected stock but do not allow water to come into contact with the product. Use as little water as possible</p> <p>Avoid the use of a solid water stream as this may cause spreading.</p> <p>This product may produce irritating or poisonous vapours (toxic fumes of carbon as well as nitrogen oxides) mists, or other combustion products if exposed to fire.</p>
<p><b>Fire-fighting:</b></p> <p><b>Protective clothing:</b></p>	<p>Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal.</p> <p>Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool containers but must be contained for later disposal. Do not scatter the material. Dispose of extinguishing agent and spillage in a safe way at a later stage.</p> <p>Full protective clothing and self-contained breathing apparatus</p>
<p><b>6) Accidental Release Measures:</b></p>	
<p><b>Personal precautions:</b></p> <p><b>Environmental precautions:</b></p> <p><b>Cleaning procedure:</b></p> <p><b>Disposal:</b></p>	<p>Avoid contact with skin and eyes. Do not breathe in the fumes or spray. For personal protection see Section 8.</p> <p>Do not contaminate waterways, drains and groundwater. Heavily contaminated soil layers should be removed and disposed of in an approved way. If contamination of waterways, drains, rivers or lakes is unavoidable, warn the local authorities (Police and Department of Water/Environmental affairs) immediately.</p> <p>Do not eat, drink or smoke during the clean-up process. Clear area of unprotected personnel. <b>Remove all sources of possible ignition.</b> Keep people and animals away. Reposition leaking containers to minimize further leakage. Small liquid spills: Soak up with lime, sand or damp earth or other non-combustible absorbent materials and place into specially marked and sealable containers for later disposal. Large liquid spills: Contain the liquid for later disposal. When the product comes into contact with water: Contain the contaminated water for later disposal. Do not flush spilled material in drains.</p> <p>Deal with spillages immediately.</p> <p><b>Waste Disposal:</b></p> <p>In accordance with local and national regulations. Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Product waste should be burned in a high temperature incinerator (&gt; 1000 °C) with effluent gas scrubbing. Never pour untreated waste or surplus products into public sewers or where there is any danger of running-off or seepage into water systems. Comply with local legislation applying to waste disposal.</p> <p><b>Container Disposal:</b> Refer to the product label for instructions.</p> <p>Emptied containers retain vapour and product residues, therefore observe all labelled safeguards until the container is destroyed. Combustible containers should be disposed of in pesticide incinerators. Non-combustible containers must first be triple-rinsed with water, then punctured and transported to a scrap metal facility for recycling or</p>

	<p>disposal. If the container is to be refilled, do not rinse with any material or introduce any pesticide other than this product. <b>DO NO REUSE THE CONTAINER FOR ANY OTHER PURPOSE.</b> Do not transport if this container is damaged or leaking.</p>
<b>7) Handling &amp; Storage:</b>	
<p><b>Handling:</b></p> <p><b>Storage:</b></p>	<p>Do not use near sources of sparks or open flames. Harmful by eye or skin contact and by inhalation or ingestion. Thus, avoid contact with eyes and skin, and inhalation of spray and vapour. Use only with adequate ventilation. Wash hands thoroughly with soap and water before eating, drinking, chewing gum, smoking, using the toilet or breaks and immediately after handling the product. Do not eat, drink, smoke or apply cosmetics when there is a possibility of exposure to the product. Wash goggles or face shield and contaminated clothing thoroughly after each day's use. Remove clothing immediately if this product gets inside. Following this, wash the skin with water and a non-abrasive soap. Do not apply this product directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Any water that is used to clean equipment must be disposed of correctly in order to avoid contamination. Suitable protective clothing should be worn when handling this product (see section 8)</p> <p>Do not store near open flames or sources of sparks or heat. Store in original container tightly closed and in a locked, isolated, dry, cool and well-ventilated area away from unauthorised persons, children, animals, foodstuffs and water supplies .</p> <p>Ensure that local regulations are complied with.</p>
<b>8) Exposure Control / Personal Protection:</b>	
<p>It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.</p> <p><b><u>PERSONAL PROTECTIVE EQUIPMENT:</u></b></p> <p><b>Clothing:</b></p> <p><b>Gloves:</b></p> <p><b>Eye protection:</b></p> <p><b>Respiratory protection:</b></p> <p><b>Emergency eye wash:</b></p>	<p>If the engineering controls and work practices are not effective in controlling exposure to this material, then suitable personal protective equipment, including a suitable approved respirator must be worn.</p> <p>Consult supplier to confirm that the equipment is suitable.</p> <p>Impervious clothing and equipment must be worn in order to prevent prolonged or repeated skin contact with this product.</p> <p>Appropriate synthetic protective gloves.</p> <p>The use of safety goggles with side shields is recommended.</p> <p>An approved respirator that is suitable for protection from pesticide mists is adequate. Any limitations of respirator use that are specified by the approved agency and the manufacturer must be observed.</p> <p>Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.</p>
<b>9) Physical &amp; Chemical Properties:</b>	

<b>Form:</b> <b>Colour:</b> <b>Odour:</b> <b>Odour threshold:</b> <b>pH:</b> <b>Melting point / Freezing point</b> <b>Initial boiling point and boiling range</b> <b>Flash point:</b> <b>Evaporation rate:</b> <b>Flammability (solid, gas)</b> <b>Upper/ lower flammability or explosive limits:</b> <b>Vapour pressure:</b> <b>Vapour density:</b> <b>Relative density:</b> <b>Solubility(ies)</b> <b>Partition coefficient: n-octanol/water</b> <b>Auto-ignition temperature:</b> <b>Viscosity:</b>	Liquid White Characteristic No data available 7.5 No data available No data available 30.5 °C No data available Flammable and combustible No data available No data available No data available No data available Forms an emulsion in water No data available No data available No data available
<b>10) Stability &amp; Reactivity:</b>	
<b>Reactivity:</b>  <b>Chemical stability:</b>  <b>Hazardous decomposition product(s):</b>  <b>Conditions to avoid:</b>  <b>Incompatible materials:</b>	No data available.  When stored appropriately this product should show no significant degradation for 2 years from the date of manufacture. Stable in neutral and weak acidic media (pH 5-8). Stable in light and water.  Combustion or thermal decomposition will evolve irritant and toxic vapors such as oxides of carbon and nitrogen.  Heat, flames, sparks and other sources of ignition.  No data available
<b>11) Toxicological Information:</b>	
Acute: Oral LD50 > 700 mg/kg, rat (Calculated based on the formulated product. Technical active ingredient = 87.4 mg/kg, rats). Dermal LD50 >4000mg/kg, rabbit (Calculated based on the formulated product. Technical active ingredient = >2000 mg/kg, rats).  Inhalation LC50 (4h): LC50 (4h): 5 mg/L Calculated based on the formulated product. Technical active ingredient = 0,232 mg/L air, rats).  Skin irritation : Mild irritant, may cause sensitizations Eye irritation : Irritant. Sensitisation : Did not cause sensitization on laboratory animals, guinea pig. May cause sensitisation during over-exposure. Mutagenicity : Non-mutagenic according to the Ames bacterial reverse mutation assay. Non-teratogenic	
<b>12) Ecological Information:</b>	

**Information below based on active ingredient:**

**Bees:** Toxic to bees in laboratory tests. LD<sub>50</sub> (oral): 79 ng/bee; (contact) 51 ng/bee. But values under laboratory conditions do not represent a significant hazard to bees in normal field use. (Based on active ingredient)

**Birds:** Acute oral LD<sub>50</sub> for mallard ducks >4640 mg/kg. Dietary LC<sub>50</sub> (8 d) for mallard ducks >8039, quail >5620 mg/kg diet. NOEL for reproduction for mallard ducks >70, bobwhite quail >55 mg/kg daily (based on active ingredient).

**Fish :** Toxic to fish under laboratory conditions; LC<sub>50</sub> (96 h) for rainbow trout 0.91, bluegill sunfish 1.4 µg/l. But product is non-toxic to fish under natural conditions (based on active ingredient).

**Algae :** No data available

**Worms:** LC<sub>50</sub> (14 d)>1290 mg/kg soil (based on active ingredient)..

**Other aquatic species:** *Daphnia magna*, LC<sub>50</sub> (48 h) 3.5 µg/l (based on active ingredient)

Persistence:

DT<sub>50</sub> In rats: Following oral administration, elimination occurs within 2–4 days. The phenyl ring is hydroxylated, the ester bond hydrolysed, and the acid moiety is eliminated as the glucuronide and glycine conjugates.

Plants: No uptake through leaves and roots occurs - non-systemic compound. No major metabolites, except in oily crops, where *trans*-deltamethrin is part of the residue definition.

Soil/Environment: In soil, product undergoes microbial degradation within 1–2 weeks. K<sub>d</sub> 3790–30 000, K<sub>oc</sub> 4.6 × 10<sup>5</sup> to 1.63 × 10<sup>7</sup> cm<sup>3</sup>/g, confirms strong adsorption by soil colloids and no risk of leaching. DT<sub>50</sub> (lab., aerobic) 21–25 d, (anaerobic) 31–36 d. In field, DT<sub>50</sub> <23 d. Soil photolysis DT<sub>50</sub> 9 d. No incidence on the soil microflora and nitrogen cycle.

**13) Disposal Considerations:**

**Waste Disposal :** In accordance with local and national regulations. Open dumping or burning of this product is prohibited.

Do not pour untreated waste or surplus product into public sewers or where there is any danger whatsoever of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with this product or the used containers.

Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of at an approved chemicals waste disposal facility.

**Container Disposal :** Triple rinse containers before disposal as follows: Invert the empty container over the spray or mixing tank and allow it to drain for at least 30 seconds after the flow has slowed down to a drip. Then, rinse the container three times with a volume of water equal to at least 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container in the prescribed manner Do not re-use the empty container for any other purpose. Destroy the container by perforation and flattening and bury in an approved dump site. Prevent contamination of food, feedstuffs, eating utensils and drinking water.

**14) Transportation Information:**

UN Number: 3351

**Road transport ADR/RID**

Class: 6.1

Packaging group: III

Shipping name: PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S. (Deltamethrin 25 g/L)

**Air transport: ICAO / IATA**

Class: 6.1

Packaging group: III

Shipping name: PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S. (Deltamethrin 25 g/L)

**Maritime transport: IMDG**

Class: 6.1

Packaging group: III

Shipping name: PESTICIDE, LIQUID, TOXIC, FLAMMABLE, N.O.S. (Deltamethrin 25 g/L)

Marine pollutant

**15) Regulatory Information:**

**Symbols:** Xn - Harmful

F - Flammable

**Risk – Phrase:**

R11 - Highly flammable.

R20/22 - Harmful by inhalation and if swallowed

R36/37 - Irritating to eyes and respiratory system.

R43 - May cause sensitisation by skin contact.

R51 - Toxic to aquatic organisms.

R57 - Toxic to bees.

**Safety – Phrase:**

S 1/2 - Keep locked up and out of reach of children.

S13 - Keep away from food, drink and animal feeding stuffs.

S 16 - Keep away from sources of ignition – no smoking.

S 23 - Do not breathe vapour/spray.

S24/25 - Avoid contact with skin and eyes.

S 36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

**Hazard Statements**

H301 - Toxic if swallowed

H331 - Toxic if inhaled

H400 - Very toxic to aquatic life

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

**16. Other Information**

All information and instructions provided in this Safety Data Sheet (SDS) are based on the current state of scientific and technical knowledge at the date indicated on the present SDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear.

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