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MATERIAL SAFETY DATA SHEET

® DuPont Registered Trademark
N/R In Product Identification section means Not Regulated as a Dangerous Good and no UN number is allocated.

ISSUED DUPONT 17/09/04

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PRODUCT: DUPONT AVATAR® INSECTICIDE

Hazardous According to Criteria of NOHSC

PRODUCT IDENTIFICATION

UN No: N/R Poisons: S6 (Fed)

Tradenames: Avatar® insecticide
Manuf.: DuPont
ManCode:

Use: For the control of Lepidopteran insect pests in broccoli, Brussels sprouts, cabbages, cauliflower, apples and pears

Ingredients: Indoxacarb
Inert Ingredients
CAS No: 173584-44-6
Proportion: 400 g/kg
to 1 kg

Physical Description / Properties

Appearance:

Odour: Mild Lignin
Colour: Dark Brown
Form: Granular

Other Properties:

Bulk Density: 0.8 g/mL
Solubility in Water: 0.2 ppm (a.i.)
Vapour Pressure: 2.5×10^{-8} Pa (a.i.)

HEALTH HAZARD INFORMATION

Acute Effects

Eye:

May cause mild eye irritation with tearing, pain or blurred vision.

Skin:

May cause slight skin irritation with itching, redness or swelling. Avoid contact with skin. Not classified as hazardous according to the criteria of NOHSC.

Inhaled:

May cause irritation of the upper respiratory passages with coughing and discomfort. Not classified as hazardous according to the criteria of NOHSC.

Swallowed:

Ingestion of large amounts may cause alterations in blood cell counts and/or anemia. Hazardous if swallowed according to the criteria of NOHSC.

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PRODUCT: DUPONT AVATAR® INSECTICIDE**HEALTH HAZARD INFORMATION: (Continued)****Chronic Effects**

None established for formulated product.

Based on animal data from indoxacarb, the following chronic effects may occur in animals. Ingestion of indoxacarb by dogs for one year caused haemolytic anaemia with secondary histopathological changes and decreased body weights. The NOEL for both male and female dogs was 40 ppm. Effects in male and female rats that were fed indoxacarb in their diets for two years include decreased body weight, in addition females also had some haemolysis. The NOEL for the two year rat feeding study was 60 ppm for male rats and 40 ppm for female rats. Male and female mice fed indoxacarb for eighteen months had decreased body weight, in addition females showed signs of neurotoxicity, some mortality and a few incidences of histopathologic changes in the brain (probably secondary to seizures). The NOEL for the eighteen month mouse feeding study was 20 ppm in male and female mice. Tests have shown that indoxacarb does not cause genetic damage in bacterial or mammalian cell cultures or in animals. Based on animal data, indoxacarb is not considered a carcinogenic, reproductive or developmental hazard. The maternal and developmental NOEL was 2.0 mg/kg.

Other Health Effects

Avatar® insecticide is an eye irritant, and a slight to mild skin irritant. It is not a skin sensitiser. Avatar® insecticide in high single oral doses caused nasal and ocular discharge, altered righting reflex, incoordination, tremors or convulsions. Single oral dosing studies with indoxacarb to assess potential neurotoxicity were conducted in male and female rats. The NOEL for neurotoxicity was 100 mg/kg for male rats and 12.5 mg/kg for female rats. Repeated oral dosing with indoxacarb caused milk hemolytic anemia and reduced body weight gain in male and female rats, additionally, female rats experienced weakness and incoordination while male rats exhibited some changes in clinical chemical measurements. The NOEL in a 90 day repeated oral dosing study was 100 ppm for male rats and 25 ppm for female rats. Single exposure to Avatar® insecticide by inhalation caused no significant effects.

First Aid**Eye:**

If product in eyes, hold eye open and rinse slowly and gently with water for 15-20 minutes. If poisoning occurs, contact a doctor or Poisons Information Centre (ph 13 11 26).

Skin:

In case of contact, remove contaminated clothing. Rinse skin immediately with soap and plenty of water for 15-20 minutes. Wash contaminated clothing before reuse.

Inhaled:

If inhaled, remove person to fresh air. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek Medical attention.

Swallowed:

If poisoning occurs, contact a doctor or Poisons Information Centre (ph 13 11 26). Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Toxicity Data

Oral LD₅₀ (male rat): 1867 mg/kg

Oral LD₅₀ (female rat): 687 mg/kg

Dermal LD₅₀ (rats): > 5000 mg/kg

4 hr inhalation LC₅₀ (rat): > 5.6 mg/L

Aquatic Toxicology:

96 hour LC₅₀ – Rainbow trout: 0.65 mg/L

96 hour LC₅₀ – Bluegill sunfish: 0.90 mg/L

48 hour LC₅₀ – Daphnia magna: 0.60 mg/L

Avian Toxicology:

Acute Oral LD₅₀ – Bobwhite Quail: 98 mg/kg

Acute Dietary LC₅₀ – Bobwhite Quail: 808 ppm

Acute Dietary LC₅₀ – Mallard Duck: >5620 ppm

(Please note: the above Aquatic & Avian Toxicity is for indoxacarb)

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**PRODUCT: DUPONT AVATAR® INSECTICIDE**

HEALTH HAZARD INFORMATION: (Continued)

Ecological Data

Dangerous to bees. Avoid direct application or drift of the spray mix onto bee hives. After the spray has dried, bees can safely forage flowering crops. AVOID SPRAY DRIFT ONTO ADJOINING PROPERTIES OR STOCK AREAS. Keep animals out of operational areas during treatment. DO NOT contaminate streams, rivers or waterways with the chemical or used containers. Retain irrigation water and DO NOT allow the chemical to enter adjacent paddocks, crops or water supplies. DO NOT apply under weather conditions, or from spraying equipment, that may cause spray to drift onto nearby non-target plants/crops, cropping lands or pastures.

PRECAUTIONS FOR USE

Exposure Standards:

PEL (OSHA):	15 mg/m ³ TWA, total dust
	5 mg/ m ³ TWA respirable dust
AEL* (DuPont):	1 mg/m ³ (8 and 12 hr TWA, respirable)

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

Engineering Controls:

Use only with adequate ventilation. Keep container tightly closed. Do not generate dust.

Personal Protection:

When opening the container, and preparing the spray, wear cotton overalls buttoned to the neck and wrists, a washable hat, elbow length PVC gloves and a face shield or goggles. When using the prepared spray, wear cotton overalls buttoned to the neck and wrists, a washable hat and elbow length PVC gloves. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

Flammability

Non flammable.

SAFE HANDLING INFORMATION

Storage and Transport:

Store product in the closed, original container in a cool, dry, well ventilated area out of direct sunlight. Keep from contact with fertilisers, fungicides and seeds.

Spills and Disposal:

Review FIRE AND EXPLOSION HAZARDS and SAFETY PRECAUTIONS before proceeding with cleanup. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up (chemical resistant overalls, waterproof gloves, boots and face/eye protection. If dusting occurs, a cartridge respirator or SCBA should be used). Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Clean up promptly by scoop or vacuum. Use approved industrial vacuum cleaner for removal. Shovel into suitable container for disposal. Never return to container for reuse. DO NOT flush to surface water or sanitary sewer system. If product is on fire, wear self-contained breathing apparatus and full protective equipment. Use water spray. Control runoff. Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State and local regulations.

Fire/Explosion Hazard:

Extinguishing media are water spray, foam, dry chemical, CO₂. Use media appropriate for surrounding material. Do not use high volume water jet (contamination risk). Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear full protective equipment. Shut off source of fuel if possible, and without risk. If area is heavily exposed to fire and if conditions permit, let fire burn itself out, since water may increase the contamination hazard. Burning chemicals may produce by-products more toxic than the original material. Cool tank/container with water spray.

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Reactivity Data:

Stable at normal temperatures and storage conditions. Decomposition will not occur.

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The information contained herein is offered only as a guide to handling this specific material. It does not relate to use of the material in combination with any other material or in any process. Persons using this information must determine for themselves whether the material is suitable for any particular application.

**PRODUCT: DUPONT AVATAR® INSECTICIDE****REGULATORY INFORMATION**

Package and Labelling: UNSCH (Fed)
Contains: Indoxacarb 40 %

Risk Phrases:
R22 Harmful if swallowed

SOURCE INFORMATION

Technical Data:
Source MSDS: US-DU008280, revised 02/07/2004

ADDITIONAL INFORMATION

Contact Points:
For sales, technical, and product related enquiries contact DuPont's North Sydney office on (02) 9923 6111. Outside the Sydney metropolitan area 1800 252 997 is a toll free number to North Sydney Office. To assist communications, ask for the Customer Service, Technical, or Marketing personnel for the product family relative to the inquiry.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.