

**SECTION 1 - PRODUCT & COMPANY IDENTIFICATION**

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**Substance:** imidacloprid  
**Product Name:** COMPLETE 350 SC  
**Product Use:** Insecticide  
**Creation Date:** November 2005  
**Revision Date:** August 2017

**24 Hr Emergency Number:**
**In case of Poisoning:**

Poisons Helpline 0861 555 777

**In case of Spillage:**

HAZMAT: 0800 147 112

**SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS**

**Common Name** imidacloprid  
**Chemical Name** 1-(6-chloro-3-pyridylmethyl)-N-nitroimidazolidin-2-ylideneamine (IUPAC)  
**Chemical Family** neonicotinoid  
**Formulation Type** Suspension Concentrate (liquid)

Ingredient	CAS NO.	% (w/v or v/v)	Hazards and Symbols	Risk Phrases
Imidacloprid	138261-41-3	> 35 %	N, Xn- Environmentally dangerous substance, harmful	R20/22, R36/37/38, R52, R57
Water	-	± 60 %	none	none

**SECTION 3 - HAZARD IDENTIFICATION**
**Toxicity class:**

WHO (a.i.) II; EPA (formulation): II

**Main Hazard:**

Moderately toxic. Harmful if swallowed. Due to inerts, the product may cause mild skin and eye irritation. May cause irritation of nose and throat if inhaled.

**Environmental hazards:**

Extremely toxic to aquatic invertebrates. Highly toxic to bees. Toxic to birds. Moderately toxic to fish.

**Effects and Symptoms:**

No human poisoning was reported. Signs and symptoms of poisoning would be expected to be similar to nicotinic signs of poisoning. When large quantities were swallowed, vomiting, diarrhea, abdominal pain, depressed muscular tone, muscle cramps and respiratory disturbances and trembling may occur.

**SECTION 4 - FIRST AID MEASURES AND PRECAUTIONS**
**Inhalation:**

Remove source of contamination, or leave contaminated area to fresh air as rapidly as possible. Keep the affected person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately if effects or irritation persist.

**Skin contact:**

Remove contaminated clothing, shoes and leather goods immediately. Gently wipe of excess chemical. Wash skin gently and thoroughly with clean water and non-abrasive soap until no evidence of chemical remains (approximately 15 to 20 minutes). Do not rub skin. Obtain medical advice if necessary.

**Eye contact:**
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Flush eyes immediately with large amounts of gently flowing cold water, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15 to 20 minutes). Obtain medical advice immediately.

**Ingestion:**

Do not induce vomiting. **Obtain medical advice immediately** and make the container, or label or this Data Sheet available. Never give anything by mouth to a semi-conscious or unconscious person. Treat respiratory difficulty with artificial respiration or closed chest cardiac massage if necessary. Do not apply direct mouth to mouth respiration. If person is alert, rinse mouth with water and give water to drink. Immediately take the patient to the nearest physician.

**Advice to physician:**

This product contains imidacloprid, which belongs to the chloronicotinyl or neonicotinoid chemical group.

There is no specific antidote available. Treat symptomatically and supportively. The stomach should be emptied as soon as possible by careful gastric lavage. Provide supportive measures for respiratory function and cardiac action.

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**SECTION 5 - FIRE-FIGHTING MEASURES**

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**Flammable properties: Not flammable.**

**Extinguishing agents:**

Extinguish fires with carbon dioxide, dry powder, or alcohol-resistant foam. Water spray as a fog can be used for cooling of unaffected stock, but avoid water coming in contact with the product. do not use direct jet of water. Contain water used for fire-fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

**Fire fighting:**

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. Avoid inhaling hazardous vapours. Keep upwind.

Remove container from fire area if possible and without risk. Dyke fire control water for later disposal. Do not scatter the material. Avoid pollution of waterways.

Do not use high volume water jet, due to contamination risk. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site

**Personal protective equipment:**

Fire-fighters and others that may be exposed should wear full chemical protective clothing, including respiratory protection. See section 8 for recommendations regarding Exposure Controls/Personal Protection.

This product will emit toxic fumes when burned, including hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides. May produce irritating or poisonous mists or other products of combustion.

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**SECTION 6 - ACCIDENTAL RELEASE MEASURES (SPILLAGE)**

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**Personal precautions:**

Do not inhale fumes. Avoid contact with skin, eyes or clothes. Ventilate area of spill or leak, especially confined areas. For personal protection see Section 8.

**Environmental precautions:**

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

**Occupational spill:**

Keep spectators away and upwind. Remove all sources of flames and sparks. Do not touch spilled material; stop leak if you can do it without risk. Keep out unprotected persons and animals.

**For spills:** Soak up with absorptive material such as damp earth or sand or other suitable non-combustible absorbent material. Place the material into a clean, dry container and cover for subsequent disposal. In situations where product comes in contact with water, contain contaminated water for later disposal. Prevent material from spreading by damming in with absorptive material. Do not flush spilled material into drains.

Label drums with its content and dispose it in accordance with local regulations.

Open burning or dumping of this material is prohibited.

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**SECTION 7 - HANDLING AND STORAGE REQUIREMENTS**

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**Handling:**

Product is a mild irritant to skin and eyes. Product may be harmful if swallowed. Avoid contact with eyes and skin and inhalation of mist and vapour. Avoid exposure to spray. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the

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toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

**Storage:**

Store in its original container in isolated, dry, cool (avoid temperatures above 32 °C) and well-ventilated area. Avoid cross contamination with other pesticides and fertilizers. Keep under lock and key out of reach of unauthorized persons, children and animals. Store away from incompatible substances. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

**SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION**

**Engineering control measures:**

It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. . Only spark-resistant equipment should be used. Comply with occupational safety, environmental, fire and other applicable regulations.

**PERSONAL PROTECTIVE EQUIPMENT:**

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal equipment including approved respiratory protection.

**Respirator:**

It is usually safe to use the product without respirator. For splash, mist, or spray exposure wear, as a minimum, a properly fitted half-face or full-face face mask or face shield which is approved for pesticides. If the product is used in dusty or confined conditions or spillage and fire conditions a respirator suitable for protection from dusts and mists of pesticides is adequate.

**Clothing:**

Employee must wear appropriate protective (impervious) clothing (long sleeved cotton overalls, apron, rubber boots, face shield and hat or cap) and equipment to prevent skin contact with the substance.

**Gloves:**

Employee must wear appropriate chemical resistant protective gloves (PVC or neoprene gloves) to prevent contact with this substance.

**Eye protection:**

Employee must wear splash-proof safety goggles and face-shield to prevent contact with this substance.

**Emergency eye wash:** 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.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance</b>	: White, homogenous liquid (suspension)
<b>Odour</b>	: Slight characteristic odour
<b>Odour threshold</b>	: No data available
<b>pH</b>	: 7 to 8,5
<b>Melting point/freezing point</b>	: 144 °C
<b>Initial boiling point and Boiling Range</b>	: No data available
<b>Flash point</b>	: > 100 °C Not flammable. Water based
<b>Evaporation rate</b>	: No data available
<b>Flammability (solid,gas)</b>	: No data available
<b>Upper/lower flammability or explosive limits</b>	: No data available
<b>Vapour pressure</b>	: 4x10 <sup>-7</sup> mPa (20 °C); 9x10 <sup>-7</sup> mPa (25 °C)
<b>Vapour density</b>	: No data available
<b>Relative density</b>	:1.54 (23 °C )
<b>Solubility</b>	: Insoluble, forms a suspension in water
<b>Partition coefficient</b>	: logP= 0.57 (21 °C)
<b>Auto-ignition temperature</b>	: No data available
<b>Decomposition temperature</b>	: Not applicable
<b>Viscosity</b>	: No data available

**SECTION 10 - STABILITY AND REACTIVITY**

**Storage stability:**

Stable for up to 2 years under normal warehouse and field conditions. Avoid contact with strong oxidizing agents. Avoid extreme heat.

**Hazardous decomposition:**

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In a fire, the product forms toxic fumes of hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides.

## SECTION 11 - TOXICOLOGICAL INFORMATION

**Acute oral LD<sub>50</sub> rats:** Technical: 450 mg/kg

Formulation calculated: > 1000 mg/kg

**Acute dermal LD<sub>50</sub> rabbits:** Technical: > 5000 mg/kg

Formulation calculated: > 5000 mg/kg

**Inhalation LC<sub>50</sub> rats:** Technical: > 5323 mg/m<sup>3</sup> (4hours), dust

Formulation: Harmful. May cause irritation of respiratory tract

**Acute eye irritation:** Mild irritant

**Acute skin irritation:** Mild irritant

### Reproductivity:

A three generation study in rats, resulted in a NOEL of 100 ppm (equivalent to 8 mg/kg/day).

### Teratogenicity:

A study in rats resulted in a NOEL of 30 mg/kg/day.

### Mutagenicity:

Imidacloprid may be weakly mutagenic.

### Carcinogenicity:

Imidacloprid is considered to be of minimal carcinogenic risk, and is thus categorized by EPA as a "Group E" carcinogen (evidence of noncarcinogenicity for humans). There were no carcinogenic effects in a 2-year carcinogenicity study in rats fed up to 1,800 ppm imidacloprid.

**ADI:** 0.06 mg/kg/day

## SECTION 12 - ECOLOGICAL INFORMATION

### Degradability:

The half-life of imidacloprid in soil is 48 to 190 days, depending on the amount of ground cover (it breaks down faster in soils with plant ground cover than in fallow soils). Imidacloprid is degraded stepwise to the primary metabolite 6-chloronicotinic acid, which eventually breaks down into carbon dioxide. There is generally not a high risk of groundwater contamination if used as directed. The chemical is moderately soluble, and has moderate binding affinity to organic materials in soils.

The half-life in water is much greater than 31 days at pH 5, 7 and 9.

Imidacloprid penetrates the plant, and moves from the stem to the tips of the plant. The most important steps were loss of the nitro group, hydroxylation at the imidazolidine ring, hydrolysis to 6-chloronicotinic acid and formation of conjugates.

### ECOTOXICOLOGY:

#### Birds: Toxic to birds.

Oral LD<sub>50</sub>: Japanese quail: 31 mg/kg

Bobwhite quail: 152 mg/kg

Risk of dietary exposure to birds via treated seeds was minimal.

#### Fish: Moderately toxic to fish.

LC<sub>50</sub> (96 hours): Golden orfe: 237 mg/l

Rainbow trout: 211 mg/l

#### Daphnia: May be toxic to aquatic invertebrates.

LC<sub>50</sub> (48 hours): *Daphnia magna* 85 mg/l

**Kow logP = 0,57 at 21 °C.**

#### Other aquatic organisms:

Extremely toxic to some species of crustacean, including *Hyalella azteca*s and *Mysidopsis bahia*.

**Bees: Highly toxic to bees, but not considered a hazard when used as a seed treatment.**

#### Algae:

E<sub>r</sub>C<sub>50</sub> (72 hours): *Pseudokirchneriella ssubcapitata* > 100 mg/l

**Earthworms:** LC<sub>50</sub>: *Eisenia foetida* 10.7 mg/kg dry soil.

## SECTION 13 - DISPOSAL CONSIDERATION

### Pesticide disposal:

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Open dumping or burning of this pesticide is prohibited. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Dispose of product waste only in a responsible manner and according to local legislation.

**Package product wastes:**

Emptied containers retain vapour and product residues. Observe all labelled safeguards. TRIPLE RINSE empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container.

Do not re-use the empty container for any other purpose. Do not burn the empty container. Dispose of the empty containers only in a responsible manner and according to local legislation.

Comply with any local legislation applying to disposal.

Prevent contamination of food, feedstuffs, drinking water and eating utensils.

**SECTION 14 - TRANSPORT INFORMATION**

**UN No.:** 3082  
**Class:** 9  
**Packing group:** III  
**Shipping name:** Environmentally Hazardous Substance, Liquid, N.O.S (imidacloprid 350 g/l)

**SECTION 15 - REGULATORY INFORMATION**

**Symbol:** N, Xn  
**Indication of Danger:** Environmentally dangerous substance, Harmful

**Risk phrases:**

**R 20/22** Harmful by inhalation and if swallowed.  
**R 36/37/38** Irritating to eyes, respiratory system and skin.  
**R 52** Harmful to aquatic organisms.  
**R 57** Toxic to bees.

**Safety phrases:**

**S 1/2** Keep locked up and out of reach of children.  
**S 13** Keep away from food, drink and animal feeding stuffs.  
**S 24/25** Avoid contact with skin and eyes.  
**S 36/37/39** Wear suitable protective clothing, gloves and eye/face protection.  
**S 61** Avoid release to the environment. Refer to special instructions / Safety data sheets.

**SECTION 16 - OTHER INFORMATION****Packing and Labelling**

Packed in 50 ml, 100 ml, 200 ml, 1 & 5 litre litre fluorinated plastic containers and labelled according to the South African regulations and guidelines.

**Disclaimer:**

The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.

Please read all labels carefully before using the product.

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