

## MATERIAL SAFETY DATA SHEET

### 1. PRODUCT IDENTIFICATION

**Product name:** Imidacloprid TC

**CAS code:** 138261-41-3

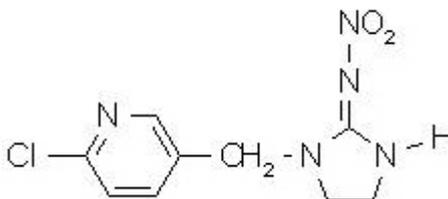
**Chemical name:** 1-[(6-chloro-3-pyridinyl)methyl]-N-nitro-2-imidazolidinimine

**Chemical family:** neonicotinoid

**Molecular weight:** 255.7

**Chemical formulation:** C<sub>9</sub>H<sub>10</sub>ClN<sub>5</sub>O<sub>2</sub>

**Chemical structure:**



**Use:**

Control of sucking insects, including rice-, leaf- and planthoppers, aphids, thrips and whitefly. Also effective against soil insects, termites and some species of biting insects. Has no effect on nematodes and spider mites. Used as a seed dressing in different crops, e.g. rice, cotton, cereals, maize, sugar beet, potatoes, vegetables, citrus fruit, pome fruit and stone fruit.

**MANUFACTURER:**

NANJING BESTGREEN CHEMICAL CO., LTD

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### 2. COMPOSITION AND INGREDIENT INFORMATION

**Hazardous Component Name :** Imidacloprid

**CAS-No.:** 138261-41-3

**Average by Weight:** 95%

### 3. HEALTH HAZARD INFORMATION

**Inhalation:** Not expected to be harmful if inhaled.

**Skin Contact:** Repeated skin exposure may cause irritation and allergic disorders.

**Eye Contact:** May be slightly irritating to the eyes.

**Ingestion:** Harmful if swallowed.

**Chronic effects of Overexposure:**

Animal studies show no evidence of oncogenic effect, no evidence of carcinogenic effects and no teratogenic potential.

**Signs and Symptoms:** No adverse health effects are expected if this product is used in accordance with the label. Symptoms of intoxication that may arise if the product is mishandled include: apathetic state, depressed muscular tone, respiratory disturbances and trembling. Muscular cramps are also possible in severe cases of poisoning.

### 4. FIRST AID MEASURES

**Ingestion:**

Give plenty of water to drink. Never give anything by mouth to an unconscious person.

**Skin Contact:**

Remove patient's clothing and wash skin thoroughly with soap and water.

**Eye contact:**

Irrigate eyes immediately with water for 15 minutes.

**Inhalation:**

Remove patient to fresh air. Keep rested and warm.

**Note to Physician:**

Symptomatic (nicotine-like effects). Check blood pressure and pulse rate frequently since bradycardia and hypotonia are possible. Provide supportive measures for the respiratory function and cardiac action. Give artificial respiration if signs of paralysis appear. Additional therapeutic measures involve elimination of the substance from the body or acceleration of its excretion.

### 5. FIRE AND EXPLOSION INFORMATION

**Flash point:**

Not applicable

**Extinguishing media:**

Sprayed water jet, foam, extinguishing powder, carbon dioxide, and sand

**Special fire fighting procedures:**

Wear full protective clothing and self-contained breathing apparatus.

**Unusual fire and explosion hazards:**

Fight large fires from a protected location or safe distance. Stay away from the ends of tanks. Dike for later disposal. Do not scatter spilled material with high-pressure water streams. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas

## 6. ACCIDENTAL RELEASE MEASURES

### **General and Disposal Evacuation procedures and safety:**

Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapor with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Small dry spills: Move container away from spill to a safe area. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering.

### **Spill and Leak procedures:**

Prevent spill from spreading or entering waterways or drains. Take up with absorbent material such as sawdust, peat or binding agent for chemicals. Fill material along with any contaminated soil etc. into sealable containers. Clean affected area with an aqueous detergent and a small amount of water. On completion of clean-up remove and wash all protective clothing and equipment with detergent and water. Any heavily contaminated clothing should be placed in a plastic garbage bag and placed in a sealable drum. Do not smoke, eat or drink during clean-up operation.

## 7. HANDLING AND STORAGE

Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### **Eye Protection:**

Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

### **Skin protection:**

Wear long sleeves and trousers to prevent skin contact.

### **Ventilation:**

Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

### **Additional protective measures:**

Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of the product. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Form:** Colourless crystals, with a weak characteristic odour.

**M.p.:** 144 °C

**V.p.:**  $4 \times 10^{-7}$  mPa (20 °C);  $9 \times 10^{-7}$  mPa (25 °C)

**Kow logP:** Kow logP = 0.57 (21 °C)

**Henry:**  $2 \times 10^{-10}$  Pa m<sup>3</sup> mol<sup>-1</sup> (20 °C, calc.)

**S.g./density:** 1.54 (23 °C)

**Solubility:**

In water 0.61 g/l (20 °C). In dichloromethane 55, isopropanol 1.2, toluene 0.68, n-hexane <0.1 (all in g/l, 20 °C).

**Stability:** Stable to hydrolysis at pH 5-11.

## 10. STABILITY AND REACTIVITY INFORMATION

**Stability:**

Stable at normal temperatures and pressure and hydrolysis at pH 5-11

**Conditions to Avoid:**

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

**Incompatibility:** none known.

**Decomposition products** proposed: HCl, HCN, CO, Nox

**Hazardous Polymerization:** will not polymerize.

## 11. TOXICOLOGICAL INFORMATION

**Oral (acute):** rat: 2000 mg/kg ie. practically non-toxic

**Dermal (acute):** rat: > 5000 mg/kg ie. practically non-toxic

**Inhalation(acute):**

Acute LC50 inhalation - rat: approx. 6000 mg/cubic metre ie. practically non-toxic

**Skin** Irritation of the skin/rabbit: non-irritant

**Eye Irritation:** Rabbit: Mild irritation to the conjunctiva was observed with all irritation resolving within 7 days.

**Sensitization:** Guinea pig: Not a dermal sensitizer.

## **12. ECOLOGICAL INFORMATION**

### **Effects on Birds:**

Imidacloprid is toxic to upland game birds. The LD50 is 152 mg/kg for bobwhite quail, and 31 mg/kg in Japanese quail. In studies with red-winged blackbirds and brown-headed cowbirds, it was observed that birds learned to avoid imidacloprid treated seeds after experiencing transitory gastrointestinal distress (retching) and ataxia (loss of coordination). It was concluded that the risk of dietary exposure to birds via treated seeds was minimal. Based on these studies, imidacloprid appears to have potential as a bird repellent seed treatment.

### **Effects on Aquatic Organisms:**

The toxicity of imidacloprid to fish is moderately low. The 96-hour LC50 of imidacloprid is 211 mg/l for rainbow trout, 280 mg/l for carp, and 237 mg/l for golden orfe. In tests with the aquatic invertebrate Daphnia, the 48-hour EC50 (effective concentration to cause toxicity in 50% of the test organisms) was 85 mg/l. Products containing imidacloprid may be very toxic to aquatic invertebrates.

### **Effects on Other Animals (Nontarget species):**

Imidacloprid is highly toxic to bees if used as a foliar application, especially during flowering, but is not considered a hazard to bees when used as a seed treatment

## **13. DISPOSAL CONSIDERATIONS**

### **After intended use:**

Rinse container before disposal. Add rinsings to the spray tank. Do not dispose of undiluted chemicals on site. Break, puncture, crush and bury rinsed container in a local authority landfill (check local statutory requirements). If not available, bury the container below 500 mm in a marked disposal pit specifically set up for this purpose, clear of waterways, vegetation and roots. Empty container and product should not be burnt.

### **After spill or accident:**

Dispose of sealed containers at an approved local waste disposal site.

## **14. TRANSPORT INFORMATION**

Do not transport with food and feedstuffs.

Class: 6.1

UN NO.: 2588

## **15. REGULATORY INFORMATION**

Symbol: T

R phrases: R23/25-48

S phrases: S2/7/9/13/36/39

## **16. OTHER INFORMATION**

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS 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. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.