Date: Mar.4th, 2025

MATERIAL SAFETY DATA SHEET

Section 1. Chemical Product and Company Identification

HEBEI JRAIN TECHNOLOGY CO.,LTD.

Address: No. 66 XIANGTAI ROAD, YUHUA DISTRICT, SHIJIAZHUANG CITY, HEBEI PROVINCE,CHINA

Tel: 0086-311-80680379 Fax: 0086-311-80680380

Product Name: Imidacloprid

Chemical Name of Active Ingredient (IUPAC):

1-(6-chloro-3-pyridylmethyl)-N-nitroimidazolidin-2-ylideneamine

Chemical Formula of Active Ingredient: $C_9H_{10}ClN_5O_2$

CAS/EPA/EU Registry Number of Active Ingredient: 138261-41-3

Section 2. Composition/Information on Ingredients

Component	CAS Number	Content (%)
Imidacloprid	138261-41-3	95%
Ingredient	Not available	5%

Section 3. Hazards Identification

EMERGENCY OVERVIEW: Caution! Harmful if swallowed or absorbed through skin. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling.

Routes of Exposure

Ingestion, Skin contact, Skin Absorption, Eye contact

Immediate Effects

Eye

Causes eye irritation. Do not get in eyes.

Skin

Harmful if absorbed through skin. Avoid contact with skin and clothing

Refer to section 11 for toxicological and section 12 for environmental information.

Section 4. First Aid Measures

Eye Contact: Flush with plenty of water for at least 15 minutes, call a physician if irritation develops.

Skin Contact: Wash with plenty of soap and water. Get medical attention if irritation develops.

Inhalation: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.

Ingestion: Call a physician or poison control center. Drink one or two glasses of water. Do not induce vomiting. Do not give anything by mouth to an unconscious person.

Antidote: There is no special antidote.

Section 5. Fire Fighting Measures

Fire and Explosion Hazards: In a fire, formation of hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides can be expected.

Firefighting Media: Sprayed water jet, foam, extinguishing powder, carbon dioxide, sand.

Firefighting Precaution: Firefighters should wear full protective gear, including self-contained breathing apparatus. Keep unnecessary people away. If it can be done safely, remove intact containers from the fire. Otherwise, use water spray to cool them. Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire control water or other extinguishing agent and spillage safely later. Do not release contaminated water into the environment.

Section 6. Accidental Release Measures

Personal Precautions

Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods for Cleaning Up

Take up with absorbent material (e.g. sand, earth or a proprietary absorbent material). Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

Additional Advice

Use personal protective equipment. Avoid breathing vapors and avoid skin contact. Do not allow material to enter streams, sewers, or other waterways.

Section 7. Handling and Storage

Handling Procedures

Handle and open container in a manner as to prevent spillage. Keep out of reach of children. It will irritate the eyes, nose, throat and skin. Avoid contact with eyes and skin. Do not inhale dust. If in eyes, wash it out immediately with water. Wash hands after use. After each day's use, wash gloves, goggles and contaminated clothing.

Storage Precautions: Store in the closed, original container in a cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. When treated seed is stored it should be kept apart from other grain and the bags or other containers should be clearly marked to indicate the contents have been treated with this product. Do NOT allow seed treated with this product to contaminate seed intended for human or animal consumption. Bags that have held treated seed are not to be used for any other purpose. If the seed is not used immediately after treatment it should be stored in a dry, well-ventilated place.

Section 8. Exposure Controls/Personal Protection

Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

Eye/Face: Wear goggles. Wear a disposable mask if inhalation is possible.

Skin Protection: Wear cotton overalls buttoned to the neck and wrist and a washable hat if skin exposure is likely. Wear elbow-length PVC gloves.

Respiratory Protection: Wear self-contained breathing apparatus

Section 9. Physical and Chemical Properties

Appearance: White Crystal

Odor: Slight characteristic odor

Vapor pressure: 8.4×10^{-4} Pa (25 ^{o}C)

Molecular Weight: 255.7

M.p. 143.8^{0}C±0.1^{0}C

KOW Log Pow = 0.61(pH 8.08)

S.g./density 1.41 g/cm³ at 20°C

Solubility In water 553.1 mg/L (20^{0}C, pH6.39), Dichloromethane 6.7×10^{4} mg/L, isopropanol 2.3×10^{4} mg/L, toluene 6.9×10^{2} mg/L.

Stability Stable to hydrolysis at pH 5-11.

Section 10. Stability and Reactivity

Stability: under normal conditions of use.

Incompatibilities: Avoid strong oxidizing agents.

Hazard Decomposition: None under normal conditions. In a fire, formation of hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides can be expected.

Hazard Polymerization: None.

Section 11. Toxicological Information

Acute Oral Toxicity: Acute oral LD50 for rat ＞500-2000 mg/kg

Acute Dermal Toxicity: Acute dermal LD50 for rat ＞ 2000 mg/kg

Acute Inhalation Toxicity: ＞ 3.61 mg/L 4 hours(for rat).

Skin Irritation: Not irritating to skin (rabbit)

Eye Irritation: Not irritating to eye (rat)

Skin sensetization: Negative (Guinea pig)

Section 12. Ecological Information

Birds: LD_{50} 42.5 mg/kg (Coturnix coturnix japonica); LD_{50}＞2000 mg/kg b.w.mg/kg (Mallard Duck)

Fish: LC_{50} ＞100mg/L (Brachydonio rerio, 96 h); LC_{50} ＞100mg/L (rainbow trout, 96 h)

Bees: LD_{50}: 0.159 μg/bee (Honeybee 48 h)

Plants: Imidacloprid penetrates the plant, and moves from the stem to the tips of the plant. It has been tested in a variety of application and crop types, and is metabolized following the same pathways. The most important steps were loss of the nitro group, hydroxylation at the imidazolidine ring, hydrolysis to 6- chloronicotinic acid and formation of conjugates.

Soil/Environment: The half-life of imidacloprid in soil is 48-190 days, depending on the amount of ground cover (it breaks down faster in soils with plant ground cover than in fallow soils). Organic material aging may also affect the breakdown rate of imidacloprid. Plots treated with cow manure and allowed to age before sowing showed longer persistence of imidacloprid in soils than in plots where the manure was more recently applied, and not allowed to age. 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 with imidacloprid if used as directed. The chemical is moderately soluble, and has moderate binding affinity to organic materials in soils. However,

there is a potential for the compound to move through sensitive soil types including porous, gravelly, or cobbly soils, depending on irrigation practices.

Section 13. Disposal Considerations

Rinse container before disposal. Add rinsing to mixing vessel. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt. Dispose of waste product through a reputable waste contractor.

Section 14. Transport Information

The data provided in this section is for information only. Please apply the appropriate regulations to properly

UN Class: 9 3077

Section 15. Regulator Information

Follow all regulations in your country.

Section 16. Other Information

Disclaimer: The information provided by HEBEI JRAIN TECHNOLOGY CO.,LTD. contained herein is given in good faith and to the best of our knowledge. However, no warranty is expressed or implied.

Prepared by: Registration Department

Updated on: April, 2013

HEBEI JRAIN TECHNOLOGY CO.,LTD.