

# Safety Data Sheet (SDS) StarBug

According to UN GHS 8th Ed

Revision Date: 16/08/2022

First print date: 01/03/2021

Version: 1.1

## SECTION 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

### Product identifier:

**Identification as on the label/Trade name:** StarBug

**Common Name:** Imidacloprid 350g/ℓ SC

### Relevant identification uses of the substance and uses advised against:

**Identified uses:** Herbicide

**Uses advised against:** Use only as directed.

### Details of the supplier of the Safety Data Sheet:

Enviro Bio-Chem (Pty) Ltd, 44 Kerk Street,  
Lichtenburg, North West, South Africa, 2740

### Details of the Registration Holder:

Erintrade cc t/a RT Chemicals, 44 Kerk Street,  
Lichtenburg, North West, South Africa, 2740

### Contact Details:

Telephone: +27 87 231 7261

Fax: 086 541 7948

Website: www.envirobiochem.co.za

### Emergency telephone numbers:

**24 Hour Emergency Number: Bateleur: +27 83 123 3911**

Griffon Poison Information Centre: +27 82 446 8946

Poisons Information Helpline: 0861 555 777

Tygerberg Hospital: +27 21 931 6129

## SECTION 2. HAZARD IDENTIFICATION

### Classification of the substances or mixture

**The mixture is classified according to SANS 10234:2019, Regulation EC 1272/2008 [EU-GHS/CLP]**

Hazard classes/Hazard categories	Hazard statement
Acute toxicity oral (Category 4)	H302
Aquatic Toxicity Acute (Category 1)	H400
Aquatic Toxicity Chronic (Category 1)	H410

*For full text of H statements see section 16*

### The most important adverse effects

**The most important adverse physiochemical effects:** None known

**The most important adverse human health effects:** Harmful if swallowed.

### Label elements



**Hazard pictograms**

**Signal Word:** Warning

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**Hazard Statements:**

H302	Harmful if swallowed
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

**Precautionary Statements:**

P102	Keep out of reach of children
P103	Read label before use
P264	Wash hands, forearms, and face thoroughly after handling
P270	Do not eat, drink, or smoke when using this product.
P273	Avoid release to the environment.
P391	Collect spillage
P501	Dispose of contents/container in accordance with local/regional/ national regulations

**SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS**
**Substance/Mixture:** Mixture

**Ingredients:**

Substance name (IUPAC)	CAS Number.	Concentration % by weight	Classification EC1272/2008
Imidacloprid	138261-41-3	32%	Acute Toxicity Oral (Category 3) H301 Aquatic Acute (Category 1) H400 Aquatic Chronic (Category 1) H410
Ethylene glycol	107-21-1	< 5 %	Acute Toxicity oral (Category 4) H302
Sodium benzoate	532-32-1	< 1 %	Eye Irritation (Category 2A) H319

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

**SECTION 4. FIRST AID MEASURES**
**Description of first aid measures:**

**In case of inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if you feel unwell.

**In case of skin contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Seek medical attention immediately.

**In case of eye contact:** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

**In case of ingestion:** Seek medical advice immediately. Rinse mouth thoroughly. If large amounts of herbicide have been ingested, and if the patient is fully alert, induce emesis with Syrup of Ipecac, followed by several glasses of water. Dosage for adults and children over 12 years: 30 ml; dosage for children under 12 years: 15 ml. When vomiting has stopped, give activated charcoal. If the amount of ingested herbicides was small, if effective emesis has already occurred, or if treatment is delayed, administer the activated charcoal and sorbitol by mouth. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt, or waistband.

**Most important symptoms and effects, both acute and delayed:**

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**Ingestion:** Harmful if swallowed

**Delayed effects:** None known

**Indication of any immediate medical attention and special treatment needed:**

There are no specific antidotes for poisoning by these herbicides.

1. If large amounts of herbicide have been ingested, and if the patient is fully alert, induce emesis with Syrup of Ipecac, followed by several glasses of water. Dosage for adults and children over 12 years: 30 ml; dosage for children under 12 years: 15 ml. When vomiting has stopped, give activated charcoal. Add sorbitol to the charcoal slurry unless diarrhoea has already commenced. If, for some reason, the patient is not fully alert, put in place a cuffed endotracheal tube to protect the airway, then aspirate and lavage the stomach with a slurry of charcoal. Leave a quantity of charcoal, with sorbitol, in the stomach before withdrawing the stomach tube. Repeated administration of charcoal at half or more the initial dosage every 2 to 4 hours may be beneficial.
2. If the amount of ingested herbicides was small, if effective emesis has already occurred, or if treatment is delayed, administer the activated charcoal and sorbitol by mouth.
3. If serious dehydration and electrolyte depletion have occurred because of vomiting and diarrhoea, monitor blood electrolytes and fluid balance and administer intravenous infusions of glucose, normal saline, Ringer's solution, or Ringer's-lactate to restore extracellular fluid volume and electrolytes. Follow this with oral nutrients as soon as fluids can be retained. Fluids serve to support excretion of the toxicants.
4. Supportive measures are ordinarily sufficient for successful management of excessive exposures to these herbicides. If the patient's condition deteriorates despite good supportive care, the operation of an alternative or additional toxicant should be suspected

## SECTION 5. FIRE FIGHTING MEASURES

**Extinguisher media:**

**Suitable** extinguisher media: Foam. Dry powder. Carbon dioxide. Water spray.

**Small Fire:** Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam.

**Large Fire:** Water fog or foam can be used for larger fires or cooling of unaffected stock but avoid the accumulation of polluted run-off from the site.

**Unsuitable** extinguishing media: Do not use high volume water jet, due to contamination risk.

**Special hazards arising from the mixture:**

Fire Hazard: The material does not burn or burns with difficulty. It is not explosive. Airborne Bromacil dust may ignite.

Hazardous decomposition products in case of fire: Refer to Section 10: Stability and Reactivity.

**Advice for fire-fighters:**

Avoid inhaling hazardous vapours and fumes. Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Use an approved/certified respirator or equivalent.

Contain fire control agents for later disposal according to Section 13.

Water can be used to cool unaffected containers.

## SECTION 6. ACCIDENTAL RELEASE

**Personal precautions, protective equipment, and emergency procedures:**

**For non-emergency personnel:** Keep all personnel away .Avoid contact with eyes and skin.

**For emergency responders:** Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Use an approved/certified respirator or equivalent Avoid contact with eyes and skin. Do not breathe in fumes. Refer to section 8 for recommended personal protective equipment. Evacuate unnecessary personnel.

**Environmental precautions:**

Stop leak if without risk. Prevent entry into drains, watercourses, or confined areas; dike if needed. If the product contaminates public water, inform appropriate authorities immediately in accordance with local regulations.

Dispose in a safe manner in accordance with local/national regulations.

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### Methods for containment and cleaning up:

**For small spills:** Clean up promptly. Do not use water to collect spilled product. Absorb with materials such as: sand, earth, vermiculite, or diatomaceous earth. Do not flush spilled product into drains. If spill area is on ground near trees or other valuable plants, remove top 5 cm of soil after initial clean-up. Wear PPE. Collect in suitable and properly labelled containers.

**For large spills:** Isolate area and keep unauthorized personnel away. Contain spilled material if possible. Clean up promptly. Do not use water to collect spilled product. Absorb with materials such as: sand, earth, vermiculite, or diatomaceous earth. Do not flush spilled product into drains. If spill area is on ground near trees or other valuable plants, remove top 5 cm of soil after initial clean-up. Wear PPE. Collect in suitable and properly labelled containers.

### Reference to other sections:

See section 1 for emergency contact details

See section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

See section 13 for information on disposal.

## SECTION 7. HANDLING AND STORAGE

### Suitable material:

This product should only be stored or applied using stainless steel, aluminum, fiberglass, or plastic lined containers.

Do not mix, store, or apply in galvanized or unlined mild steel containers or spray tanks. The product can react with such containers and tanks or produce hydrogen gas, which may form a highly combustible mixture that can flash or explode, if ignited by open flames, sparks, a welder's torch, or another ignition source.

### Precautions for safe handling:

Harmful if swallowed. Avoid contact with skin, eyes, and clothing. Keep away from heat and open flames. Do not leave the product in the applicator for long period. Use with adequate ventilation. Provide appropriate exhaust ventilation at places where dust is formed. 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.

Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Workers should wash hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

**Protective measures:** Observe directions on label and instructions for use.

**Advice on general occupational hygiene:** Do not eat drink or smoke when handling this product.

### Conditions for safe storage, including incompatibilities:

Store in original containers. Store product in a segregated and approved area. Keep container in a cool, well-ventilated area at temperatures not exceeding 40 °C. Keep container tightly closed and sealed until ready for use. Keep under lock and key out of reach of unauthorized persons, children, and animals. Store away from incompatible substances.

Provide adequate exhaust ventilation in areas where dust may form. Do not leave in applicators for extended periods.

## SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters:

Acceptable Daily Intake (ADI): 0.13 mg/kg body weight daily.

Occupational Exposure Limits (Bromacil): NIOSH REL 1 ppm (10 mg/m<sup>3</sup>) TWA

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### Exposure control:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. A Risk Assessment should be conducted before handling is to commence to determine specific exposure control.

**Appropriate engineering controls:** Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Hygiene measures:** Wash hands, forearms, and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection:** Use splash proof safety glasses and face shield .

**Hand protection:** Use chemical resistant gloves. Examples of preferred glove barrier materials include Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, Polyvinyl alcohol, Polyvinyl chloride.

**Body protection:** Appropriate impervious clothing is required to prevent skin contact with the product, apron, rubber boots.

**Respiratory protection** Wear an organic cartridge respirator suitable for protection from mists/ vapours of pesticides if inhalation is likely to occur.

**Environmental exposure controls:** Prevent product from entry into sewers and water courses.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Appearance	Liquid suspension
Colour	White to slightly beige
Odour	Slight characteristic odour
Odour threshold	No data available
pH	5.5 – 7.5
Melting point / freezing point (° C)	Not applicable
Boiling point (° C)	No data available
Flash point (° C)	No flash points up to 100°C.
Evaporation rate	No data available
Flammability	No data available
Upper /lower flammability limits	No data available
Vapour pressure	4×10 <sup>-7</sup> mPa at 20°C.
Vapour density	No data available
Relative density g/ml (20°C)	1.13
Water solubility (g/l) at 25°C	Miscible with water
Partition coefficient : n-octanol/water	Log Pow = 0.57 at 21°C (imidacloprid).
Auto-ignition temperature (° C)	No data available
Decomposition temperature (° C)	No data available
Viscosity, dynamic (mPa s)	No data available
Explosive properties	No data available
Oxidising properties	No data available
Explosive limits	No data available

## SECTION 10. STABILITY AND REACTIVITY

**Reactivity:** None known

**Chemical stability:** Product is stable at ambient temperature and pressure, under normal storage and handling conditions

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**Possibility of hazardous reactions:** None known

**Conditions to avoid:** Avoid excessive heat and ignition sources.

**Incompatible materials:** Avoid contact with strong oxidising agents.

**Hazardous decomposition products:** In a fire, the product may form toxic fumes of hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Toxicokinetics, metabolism and distribution:** No data available

**Information on toxicological effects:**

**Assessment of acute toxicity:**

The product has not been tested. The data reported is for the main ingredients in the mixture.

<b>Imidacloprid CAS No. 105827-78-9</b>	
<b>Acute toxicity:</b>	
Acute Oral LD50 (rat-female)	410 mg/kg
Acute Dermal LD50 (rabbit):	>5000 mg/kg
Acute Inhalation LC50 - 4 h (rat)	> 5.3 mg/l
Skin irritation/ corrosion	Not a skin irritant
Eye damage / irritation	Not an eye irritant
Respiratory or skin sensitization	Not a skin sensitiser
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific Target Organ Toxicity STOT single exposure	No data available
Specific Target Organ Toxicity STOT repeated exposure	No data available
Aspiration hazard	No data available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

<b>Ethylene Glycol CAS No. 107-21-1</b>	
<b>Acute toxicity:</b>	
Acute Oral LD50 (rat)	7712 mg
Acute Dermal LD50 (mouse)	3500 mg/kg
Acute Inhalation LC50 - 6 h (rat)	2.5 mg/l
Skin irritation/ corrosion (rabbit)	No skin irritation 20h
Eye damage / irritation	No eye irritation 24h
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific Target Organ Toxicity STOT single exposure	No data available
Specific Target Organ Toxicity STOT repeated exposure	No data available
Aspiration hazard	No data available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

<b>Sodium Benzoate CAS No. 532-32-1</b>	
<b>Acute toxicity:</b>	

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Acute Oral LD50 (rat - male)	3450 mg/kg
Acute Dermal LD50 (rat):	2000 mg/kg
Acute Inhalation LC50 - 4 h (rat)	12.2 mg/l air
Skin irritation/ corrosion (rabbit)	Not a skin irritant
Eye damage / irritation (rabbit)	Eye irritant
Respiratory or skin sensitization (Guinea pig)	Not a respiratory or skin sensitizer
Germ cell mutagenicity Test Type: Ames test Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: Mutagenicity (mammal cell test): chromosome aberration. Test system: Lungs Result: negative Remarks: (ECHA) Test Type: Chromosome aberration test Species: Rat Cell type: Bone marrow Application Route: Oral Method: OECD Test Guideline 475 Result: negative	
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific Target Organ Toxicity STOT single exposure	No data available
Specific Target Organ Toxicity STOT repeated exposure	No data available
Aspiration hazard	No data available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**SECTION 12. ECOLOGICAL INFORMATION**

<b>Imidacloprid CAS No. 105827-78-9</b>	
<b>Toxicity</b>	
Birds Acute oral LD50 Dietary LC50 8 days	31 mg/kg Japanese quail; 152 mg/kg Bobwhite quail >5000 mg/kg diet Mallard ducks; 2225 mg/kg Bobwhite quail
Aquatic Toxicity Fish LC <sub>50</sub> (96 hr) Aquatic Toxicity Daphnia LC <sub>50</sub> (48 hr) Toxicity to algae – static test ErC50 (72h)	2378 mg/l Golden Orfe ; 211 mg/l, Rainbow trout 85 mg/l >100mg/l for green algae <i>P. subcapitata</i>
Toxicity to bees LD <sub>50</sub> (contact)	Harmful to honeybees by direct contact, but no problems expected when exposure is avoided, that is, not sprayed into flowering crop or when used as a seed treatment.
Worms LC <sub>50</sub>	10.7 mg/kg dry soil <i>E. foetida</i>



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<b>Persistence and degradability</b>	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
<b>Bioaccumulation potential</b>	No data available
<b>Mobility in Soil</b>	No data available
<b>Result of PBT and vPvB assessment</b>	No data available
<b>Other adverse effects</b>	Not determined

<b>Ethylene Glycol CAS No. 107-21-1</b>	
<b>Toxicity</b>	
Aquatic Toxicity Fish Static LC <sub>50</sub> (96 hr)	>72860 mg/l Pimephales promelas ( <i>fathead minnow</i> )
Aquatic Toxicity Daphnia LC <sub>50</sub> (48 hr)	>100 mg/l Daphnia magna (Water flea)
Toxicity to algae – static test EC <sub>50</sub> (72h)	>10000 mg/l - Scenedesmus quadricauda (Green algae)
Toxicity to bacteria static test EC20 activated sludge (30 minutes) ISO 8192	>1995 mg/l >84 µg/bee.
<b>Persistence and degradability</b> Biodegradability-aerobic 10 days	90-100 % - Readily biodegradable.
<b>Bioaccumulation potential</b>	No data available
<b>Mobility in Soil</b>	No data available
<b>Result of PBT and vPvB assessment</b>	No data available
<b>Other adverse effects</b>	No data available

<b>Sodium Benzoate CAS No. 532-32-1</b>	
<b>Toxicity</b>	
Aquatic Toxicity Fish flow through test LC <sub>50</sub> (96 h)	484 mg/l Pimephales promelas (fathead minnow)
Aquatic Toxicity Daphnia static test LC <sub>50</sub> (48h)	>100 mg/l Daphnia magna (Water flea)
Toxicity to algae – static test ErC50 (72h)	100mg/l Pseudokirchneriella subcapitata (green algae) -
Toxicity to bacteria static test EC50 (3h)	No data available
<b>Persistence and degradability</b>	Readily biodegradable 94% (Aerobic)
<b>Bioaccumulation potential</b>	No data available
<b>Mobility in Soil</b>	No data available
<b>Result of PBT and vPvB assessment</b>	No data available
<b>Other adverse effects</b>	No data available

**SECTION 13. DISPOSAL CONSIDERATIONS**
**Waste treatment methods:**
**Product:**

Keep out of drains, sewers, ditches, and waterways. Open dumping or burning of this pesticide is prohibited.



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Waste resulting from the use of this product cannot be re-used or reprocessed. Refer to container label for disposal information. Treat as hazardous waste and dispose of in accordance with local/ regional/ national/ international regulations.

## Container:

Refer to container label for disposal information. Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is cleaned, reconditioned, or destroyed. Rinse empty container three times with a volume of water equal to at least one tenth of that of the container. Pour rinse water into spray tank. Dispose of as hazardous waste. not contaminate water when disposing of rinse water. Dispose of using an approved waste disposal service provider. Follow all local/ regional/ national/ international regulations.

## SECTION 14. TRANSPORT INFORMATION

UN Number	3082
UN proper shipping name	Environmentally Hazardous Substance; Liquid; N.O.S. (Imidacloprid 350 g/l)
Transport hazard class	9
Packaging group	III
Marine pollutant	Yes

## SECTION 15. REGULATORY INFORMATION

### Safety, health, and environmental regulations/legislation for the mixture:

**Relevant information regarding authorization:** Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. UN Recommendations on the Transport of Dangerous Goods Model Regulations Rev. 21 (2019), Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 8, 2019.

### Relevant information regarding restrictions:

**EU regulations:** Regulation EC 1272/2008 [EU-GHS/CLP]

### Other National regulations:

National Road Traffic Act, 1996 (ACT NO. 93 of 1996).

SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes.

National Environmental Management Waste Act 59 of 2008.

Act 36 of 1947 of the Republic of South Africa. This product is registered under it is a violation of South African law to use this product in any manner inconsistent with its approved labelling. Read and follow all label directions

**Chemical Safety Assessment carried out?** No

## SECTION 16. OTHER INFORMATION

### Indication of changes:

Classification according to SANS 10234:2019, Regulation EC 1272/2008 [EU-GHS/CLP]

GHS aligned – all sections

### Relevant H statements (number and full text):

H301-Toxic if swallowed

H319-Causes serious eye irritation

Acute toxicity oral (Category 4): Harmful if swallowed

Aquatic Toxicity acute (Category 1): Very toxic to aquatic life

Aquatic Toxicity chronic (Category 1): Very toxic to aquatic life with long lasting effects

### Training instructions:

Use as indicated on the label, special training may be required for application.

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### Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product. 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, and 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.