



SAFETY DATA SHEET

SAMURAI 20 SC

Revision Date : 18/06/2022
Revision Number : 01

1. PRODUCT AND COMPANY IDENTIFICATION

Identification of the product/preparation

Product Name: **SAMURAI 20 SC**
Registration Number: L10384
Product use: Insecticide

Active Ingredient

Clothianidin
CAS Number: 210880-92-5

Supplier

Company Name: PHILAGRO SOUTH AFRICA (PTY) LTD
Address: 1st Floor, The Corner Office
410 Lynnwood Road
LYNNWOOD RIDGE 0040
Telephone: +27(0) 12 348 8808
Fax: +27(0) 12 348 3500
E-mail Address: info@philagro.co.za

Emergency Telephone Numbers:

Medical information in case of poisoning

Griffon Poison Information Centre: +27(0) 82 446 8946
Tygerberg Hospital Poison Centre: +27(0) 86 155 5777

Relevant identified uses of the product and uses advised against

A systemic suspension concentrate insecticide for the control of insect pests in citrus, grapes, bananas and macadamias as listed. The product should not be used for any other purpose or in any other manner contrary to the information supplied on the product label.

2. HAZARD IDENTIFICATION

Classification of the substance or mixture

This product is classified as hazardous according to the criteria in South Africa - GHS classification and labelling of chemicals – SANS10234 and the Regulations for Hazardous Chemical Agents - 2021.

Classification

HAZARD CLASS	CATEGORY	HAZARD STATEMENT NUMBER
Reproductive Toxicity	2	H361fd
STOT SE	1	H370
Aquatic Toxicity Acute	1	H400
Aquatic Toxicity Chronic	1	H410

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Label Elements

South Africa. GHS classification and labelling of chemicals – SANS10234, and the Regulations for Hazardous Chemical Agents - 2021.

Pictogram/s:



Signal Word:

Danger

Hazard Statements:

Statement Number	Hazard Statement
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H370	Causes damage to organs (Central Nervous System).
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention

Statement Number	Statement
P203	Obtain, read, and follow all safety instructions before use.
P260	Do not breathe vapours/spray.
P264	Wash hands and face thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P273	Avoid release to the environment – if this is not the intended use.
P280	Wear protective gloves, protective clothing, eye protection and face protection.

Response

Statement Number	Statement
P391	Collect spillage.
P308 + P316	IF exposed or concerned: Get emergency medical help immediately.

Storage

Statement Number	Statement
P405	Store locked up.

Disposal

Statement Number	Statement
P501	Dispose of contents or container to an approved waste disposal facility and in accordance with national regulations.



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Other Hazards

None known.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixture

Trade Name: SAMURAI 20 SC
IUPAC/Chemical Name (active ingredient): (E)-1-(2-Chloro-1,3-thiazol-5-ylmethyl)-3- methyl-2-nitroguanidine
Molecular Formula: C₈H₈ClN₅O₂S
Chemical Family: Neonicotinoid (thiazole)
Formulation: Suspension Concentrate

Ingredients with Hazard Concerns (GHS):

According to UN GHS criteria.

Hazardous Component	CAS Number	Weight - %	GHS Classification
Clothianidin	210880-92-5	20%	Acute Toxicity, Oral, Category 4. Reproductive Toxicity, Category 2. STOT SE, Category 1. Aquatic Toxicity, Acute, Category 1. Aquatic Toxicity, Chronic Category 1.

NOTE 1: The other ingredients not included above, do not cause or contribute towards the correct GHS classification of SAMURI 20 SC and are therefore, in terms of the South African Regulations for Hazardous Chemical Agents - 2021; Regulation 14(b), not listed.

4. FIRST AID MEASURES

Description of First-Aid Measures

General Advice Immediately remove contaminated clothing and move the affected person from the contamination area. Keep the person warm, calm, and covered up. First aid personnel should pay attention to their own safety. In case of accident or if unwell, seek medical advice. Provide this SDS and the label to medical personnel for treatment.

Eye Contact Rinse/flush the eyes gently with water from the eye wash fountain for several minutes (at least 15 minutes), while holding the eyelids apart. If relevant - remove contact lenses if easy to do so. Continue rinsing. Obtain medical attention in case of irritation or discomfort that occurs and persists.

Skin Contact Immediately remove all contaminated clothing. Rinse the skin with plenty of cold water for 15 to 20 minutes under the safety shower. Do not rub the skin. Contact a poison control center or medical practitioner if irritation occurs and persists. Wash contaminated clothing before re-use.



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Inhalation Remove the affected victim from exposure to an area with fresh air. If breathing is difficult have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the product; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If the patient is conscious, rinse nose, mouth, and throat with water.

Ingestion If swallowed, seek medical attention, and show the container label, or this Safety Data Sheet to the medical practitioner. If conscious, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Treat symptomatically and supportively. For advice, contact a Poisons Centre or a medical practitioner.

Medical Advice

No specific antidote. Symptomatic treatment and supportive therapy as indicated.

Most important symptoms/effects, acute and delayed

None known.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media For small fires, use carbon dioxide, dry chemical (powder) foam or water spray. Foam and dry chemicals are recommended to minimize the environmental impact. For large fires use foam or water fog. Do not use high volume water jets due to potential contamination. If water is used for firefighting, dike and collect water to prevent run-off from the site.

Specific hazards arising from the chemical Combustion and/or pyrolysis of the product in case of fire generates irritating, toxic and corrosive fumes (or gasses) that may include oxides of nitrogen and carbon and hydrogen sulphide. Harmful substances in the water runoff from fire control may have adverse environmental and biological effects.

Special protective equipment and precautions for fire-fighters Firefighters must wear emergency equipment including positive pressure self-contained breathing apparatus with a full-face mask. Remove unaffected containers from fire area if possible. Keep fire exposed containers cool by spraying with water. Evacuate the area and fight the fire upwind and from a safe distance to avoid exposure to hazardous combustion products and the inhalation of hazardous vapours and fumes from burning material. Avoid pollution of waterways by run-off from the site. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local and national regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures Do not breathe in fumes/spray/mist and avoid contact with eyes, skin and clothes. Ventilate the area of the spill, especially when in confined areas. Do not touch or walk through spilled material. Contain spills if it can be done without risk. Wear appropriate protective clothing recommended in Section 8 of the SDS.



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Environmental precautions	Prevent further spillage if safe to do so. Do not allow the spilt product to enter water courses and drains and avoid contact with soil. Do not allow the spilt product to spread to other areas - keep the spilt material contained and isolated. Report spills and releases as required to appropriate authorities if the spilt product has caused environmental pollution (sewers, water ways, soil, or air).
Methods for cleaning up	<p>For small spills, cover with absorbent material and shovel up. Place into a labelled waste container. Seal the container and dispose of the collected spilt material as hazardous waste.</p> <p>For large spills, do not wash away into sewers. Contain the spill using absorbent cushions/socks/pads in the spill kit. Collect the spilt product in suitable containers for proper disposal.</p> <p>If spill is in water, contain contaminated water for disposal as hazardous waste.</p>

7. HANDLING AND STORAGE

Precautions for safe handling	<p>Read the label before use. Use in a well-ventilated area (preferably outdoors). Prevent contact with eyes, skin, and clothing. Do not breathe in fumes/mist/spray. Wear protective clothing and equipment during handling as described in Section 8 of the SDS. If clothing gets contaminated with the product, change to clean clothing promptly. Do not eat or drink during use. Wash the hands and face thoroughly after handling with soap. Keep containers closed when not in use. Do not permit smoking in use or storage areas.</p> <p>Locate emergency showers and eye-rinsing facility near the work/handling area. Maintain good normal industrial hygiene and housekeeping practices in areas where the product is used/handled.</p>
Conditions for safe storage, including any incompatibilities	The entrance to storage facilities should be granted only to appropriately trained personnel. Always store locked up and keep containers tightly closed. Store in the original, closed container. The formulation is stable if stored well ventilated, cool, and free of moisture and high humidity. Store below 30°C. Keep out of reach of children, uninformed persons, and animals. Protect containers from physical damage. Check the condition of storage containers periodically. Do not store with seed, fertilisers, or foodstuffs to prevent contamination.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters – National Occupational Exposure Limits

No occupational exposure limit for any of the ingredients contributing towards the classification of SAMURAI 20 SC have been established. The ingredients may however pose a health risk.

Appropriate engineering controls

Use with general or adequate local exhaust ventilation to maintain airborne concentrations as low as possible. Ensure adequate ventilation in confined areas. Good general ventilation should be sufficient to control worker exposure to airborne contaminants.



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Personal Protective Equipment

Respiratory Protection

In operations where the risk assessment indicates that there could be a high level of exposure (e.g., when exposure to mist or spray is expected), an approved respirator (half/full face mask) with a particulate filter and an organic vapour cartridge or supplied air respirator should be used. Respirator selection and use should be based on contaminant type, form, and concentration. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

Skin and Hand Protection

Wear impervious chemical resistant gloves (e.g., butyl rubber or nitrile rubber). Information on glove penetration time is available from the manufacturer of the glove. Wash gloves when contaminated and dispose of and replace immediately when contaminated inside, when perforated, when contamination on the outside cannot be removed or when signs of damage. Impervious coveralls, apron, shoes, and socks are required to prevent skin contact and contamination of personal clothing.

Eye/Face Protection

Safety eyewear compliant with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to dust. Safety glasses is recommended.

General Safety and Hygiene Measures

Handle the product in accordance with good industrial hygiene and safety practice. An eye wash fountain and safety showers should be available and easily accessible. Avoid contact with the skin, eyes and clothing and immediately remove all contaminated clothing. Wash the hands and/or face before breaks and at the end of the shift.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/physical state	Liquid suspension
Odour characteristics	Mild aromatic
Colour	White
Density (g/ml)	1.04 at 20°C
Solubility in water (g/100mL) @ 20°C	Miscible in / with water
Flammability	Not "highly flammable"
Flash point (°C)	Does not flash
Flammable limits-LEL	Not determined
Vapour pressure (mPa) at 25°C	Not determined
Decomposition temperature (°C)	Not determined
Boiling point range(°C)	Not determined
Melting point (°C)	Not applicable - liquid
pH (at 20 ± °C)	7
Partition coefficient and 20°C (Log P _{OW}):	Not determined
Viscosity	Not determined

10. STABILITY AND REACTIVITY

Reactivity

The product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Could decompose at elevated temperatures.



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Chemical Stability

Hazardous polymerization will not occur. Stable for a minimum of 2 years under recommended storage and handling conditions.

Possibility of Hazardous Reactions

None known under conditions of normal use.

Conditions to Avoid

There are no known conditions that are likely to result in a hazardous situation.

Incompatible Materials

No specific material or group of materials is likely to react with the product to produce a hazardous situation.

Hazardous Decomposition Products

Does not decompose when used for intended uses.

Decomposes on heating. Under burning conditions, this product may form toxic and irritating fumes including, nitrogen oxides, carbon monoxide, carbon dioxide and sulphur oxides.

11. TOXOLOGICAL INFORMATION

Information on likely routes of exposure

The product may be absorbed into the body by inhalation or by ingestion. The product may come into contact with the skin or eyes.

Information on toxicological effects

Acute toxicity:

No experimental toxicological data is available for the product. The assessment is based on calculation considering the individual ingredients and on toxicity data of the active ingredient.

SAMURAI 20 SC has a low acute toxicity following dermal, or inhalation exposures. The product could be harmful if ingested.

Assessment of acute toxicity:

Product/ingredient Name	Dose Acute -	Species	Test Result
SAMURAI 20 SC	>2000 mg/kg	Rat	ATE _(MIX) Oral
Clothianidin 98%	>2000mg/kg	Rat	LD ₅₀ Dermal
Clothianidin 98%	>5.54mg/L	Rat	LC ₅₀ Inhalation (Dust/Mist)

Skin Corrosion/Irritation:

Assessment of serious damage to skin:

Based on available data, the classification criteria are not met.

Serious Eye Damage/Irritation:

Assessment of serious damage to eyes/eye irritation:

Based on available data, the classification criteria are not met.



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Respiratory/Skin Sensitization:

Assessment of sensitization:
Based on available data, the classification criteria are not met.

Germ cell mutagenicity:

Assessment of mutagenicity:
Based on available data, the classification criteria are not met.

Carcinogenicity:

Assessment of carcinogenicity:
Based on available data, the classification criteria are not met.

Reproductive toxicity and Developmental toxicity:

Assessment of reproduction toxicity:
Based on available data, the classification criteria are met.
Suspected of damaging fertility and the unborn child.
Clothianidin: Multigeneration study in rats - delayed sexual maturation in males and developmental findings (higher incidence of stillbirths, decreased perinatal viability) in the absence of excessive parental toxicity.

Specific target organ toxicity (single exposure):

Based on available data, the classification criteria are met.
Clothianidin: Based on signs of neurotoxicity (impairment of motor activity) in mice (starting at 50 mg/kg bw) and rats (starting at 100 mg/kg bw) after oral administration. The dose levels did not induce mortalities in tested animals.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure):

Based on available data, the classification criteria are not met.

Aspiration hazard:

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product is very toxic to the aquatic environment with long lasting effects.
The product will not enter the environment under normal use if used as indicated on the label. Care should however be taken to avoid any additional release to ground water or sewage systems for example through inappropriate disposal.

No eco-toxicological data is available for the formulated product. This ecological assessment is based on data for the active ingredient (Clothianidin).

Ingredient	Species and Genus	Exposure (hours/days)	Result in fresh water	Data Source/Test
Clothianidin	Crustacea (Daphnia magna)	48h	Acute EC ₅₀ : >40mg/L	PPDB*
Clothianidin	Fish (Oncorhynchus mykiss)	96h	Acute LC ₅₀ : 104mg/L	PPDB
Clothianidin	Algae (Pseudokirchneriella subcapitata)	72h	Acute EC ₅₀ : 55mg/L	PPDB

*PPDB: Pesticide Properties Data Base.

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Environmental Effect	Environmental Effect Applicable to Ingredient	Description
Persistence and Degradability:	Clothianidin	Clothianidin is not readily biodegradable. Reported half-lives for the biodegradation of clothianidin in soil range from 148 to 1155 days, suggesting that biodegradation is not an important environmental fate process in soil and water. Clothianidin is not expected to volatilize from dry soil surfaces based upon its vapor pressure. An aquatic half-life of 27 days has been reported for clothianidin.
Bioaccumulative Potential:	Clothianidin	An estimated BCF of 3 suggests the potential for bioconcentration in aquatic organisms is low.
Mobility in Soil:	Clothianidin	If released to soil, clothianidin is expected to have high mobility based upon an estimated K_{oc} of 60. If released into water, clothianidin is not expected to adsorb to suspended solids and sediment.
Other Adverse Effects:	Clothianidin	Toxicity to aquatic insects is high. Extremely toxic to bees.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local regulations. Do not contaminate water sources food, or feed by storage of the product or disposal of used containers. The product or empty containers must not be disposed of as part of general waste.
 General container handling: Non-refillable container. Do not reuse for any purposes or refill the container. Triple rinse container (or equivalent) promptly after emptying.
 Empty containers: Offer for recycling, if available. Dispose of in accordance with procedures approved by the local authorities.
 Contaminated packaging: Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the product.

14. TRANSPORT INFORMATION

	Land Transport (ADR/RID)	Inland Waterways (AND/ADNR)	Sea Transport (IMDG)	Air Transport (ICAO-TI/IATA-DGR)
UN Number	3082	3082	3082	3082
UN Proper Shipping Name	Environmentally Hazardous Substance, Liquid, Clothianidin Pesticide, N.O.S	Environmentally Hazardous Substance, Liquid, Clothianidin Pesticide, N.O.S	Environmentally Hazardous Substance, Liquid, Clothianidin Pesticide, N.O.S	Environmentally Hazardous Substance, Liquid, Clothianidin Pesticide, N.O.S
Transport Hazard Class	9	9	9 (Marine Pollutant)	9
Transport Hazard Class Pictogram				
Transport Subsidiary	None	None	None	None



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Class				
Packaging Group	III	III	III	III
Environmental Hazard	YES	YES	Marine Pollutant	YES

15. REGULATORY INFORMATION

Symbol

T - Toxic for reproduction. N – Dangerous for the environment. Xn – Harmful.

R-Phrase Number

R50	Very toxic to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment.
R60	May impair fertility.
R61	May cause harm to the unborn child.

Relevant regulatory information regarding authorization, Safety Data Sheets, Occupational Exposure Limits, Hazardous Substances, Dangerous Goods Transport and Waste:

South Africa: Occupational Health and Safety Act 1993. Regulations for Hazardous Chemical Agents - 2021. Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 1947). Hazardous Substances Act, 1973 (Act No.15 of 1973). Regulations for Hazardous Chemical Agents – 2021. SANS11014:2010. Safety Data Sheet for Chemical Products – Content and Order of Sections. SANS10206: 2020. The Handling, Storage and Disposal of Pesticides. 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.

Zambia: The Pesticides and Toxic Substances Regulations. Statutory Instrument 20 of 1994 (Act No. 13 of 1994). Environmental Management (Licensing) Regulations, Statutory Instrument No. 112 of 2013 (“S.I 112 of 2013”). ZS 708 – Globally Harmonized System of Classification and Labelling of Chemicals. Environmental Management Act (EMA) of 2011.

Kenya: The Occupational Safety and Health Act, 2007 (Act No. 15 of 2007). The Factories and Other places of Work Act (CAP.514).

Angola: Executive Decree No.128/06 of November 23, general regulations of safety and health signals at work. 20041123.

Namibia: Labour Act 11 of 2007. Regulations relating to the Health and Safety of Employees at Work. Regulations relating to the Health and Safety of Employees at Work Government Notice 156 of 1997.

Botswana: Pesticides and Toxic Substances Regulations. 1994 (2006). Agrochemicals Regulations (under Section 31) (8th August, 2003). Environmental and Pollution Control Act. 1990. Environmental Management (Licensing) Regulations. (S.I. No 112 of 2013). Statutory Instrument 20 of 1994 Act No. 13 of 1994.

16. OTHER INFORMATION

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 instruction 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 or omissions or the consequence thereof.



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Key to Abbreviations

AND	European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
COD	Chemical Oxygen Demand
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
Log _{Pow}	Logarithm of the octanol/water partition coefficient
LD ₅₀	Lethal Dose 50
LC ₅₀	Lethal Concentration 50
RID	The Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
TG	Technical Grade
UN	United Nations

Issued: June 2022