

SAFETY DATA SHEET



SERENADE PRIME

Version 2 / NZ
102000027846

1/10
Revision Date: 28.08.2023
Print Date: 28.08.2023

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name SERENADE PRIME
Product code (UVP) 80924771

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use Other
EPA-Nr. HSR000656

Restrictions on use See product label for restrictions.

1.3 Details of the supplier of the safety data sheet

Supplier Bayer New Zealand Limited
CropScience Division
B:HIVE Building
74 Taharoto Rd
Smales Farm
Takapuna
Auckland, 0622
New Zealand
Telephone 0800 428 246
Telefax (09) 441 8645

1.4 Emergency telephone no.

Emergency Number 0800 734 607 (24hr)
Global Incident Response Hotline (24h) +1 (760) 476-3964 (Company 3E for Bayer AG, Crop Science Division)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classified as hazardous according to the criteria in the Hazardous Substances (Minimum Degrees of Hazard) Notice 2020 as amended

Eye Irrit. 2
H320 Causes eye irritation.
Skin Sens. 1
H317 May cause an allergic skin reaction.
H443 Harmful to terrestrial invertebrates.

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2.2 Label elements

Labelling in accordance with the Hazardous Substances (Safety Data Sheets) Notice 2020 as amended

Hazard label for supply/use required.



Signal word: Warning

Hazard statements

H320 Causes eye irritation.
H317 May cause an allergic skin reaction.
H443 Harmful to terrestrial invertebrates.

Precautionary statements

P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor/ physician.
P321 Specific treatment (see supplemental first aid instructions on this label).

2.3 Other hazards

Micro-organisms may have the potential to provoke sensitising reactions.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Suspension concentrate (=flowable concentrate)(SC)
Bacillus amyloliquefaciens strain QST 713 >= 1.0E+09 CFU/g

Hazardous components

Chemical name	CAS-No.	Conc. [%]
Bacillus amyloliquefaciens strain QST 713		1.34

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Move out of dangerous area. Victim to lie down in the recovery position, cover and keep him warm.

Inhalation Move to fresh air. Keep patient warm and at rest. If symptoms persist, call a physician.

Skin contact Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.

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- Eye contact** Wash off immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.
- Ingestion** Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment Treat symptomatically. There is no specific antidote.
Contact the National Poisons and Hazardous Chemicals Information center in Dunedin, PO Box 913, Dunedin. Phone 0800 POISON (0800 764 766).

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

- Suitable** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable** High volume water jet

5.2 Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

5.3 Advice for firefighters

- Special protective equipment for firefighters** In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.
- Further information** Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.
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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions Avoid contact with spilled product or contaminated surfaces. Ensure adequate ventilation. Use personal protective equipment.

6.2 Environmental precautions Do not allow to get into surface water, drains and ground water. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.

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6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations. Clean with disinfectants.

Additional advice Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal.

6.4 Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice.

Advice on protection against fire and explosion No special precautions required.

Hygiene measures Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Wash thoroughly with soap and water after handling. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a place accessible by authorized persons only. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Protect from frost.

Advice on common storage Keep away from food, drink and animal feedingstuffs.

Suitable materials HDPE (high density polyethylene)

7.3 Specific end use(s) Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Bacillus amyloliquefaciens strain QST 713		20,000,000 CFU/m ³		OES BCS*

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

8.2 Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

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Respiratory protection	Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance. Wear respirator with a particle filter mask (protection factor 20) conforming to European Norm EN149FFP3 or EN140P3 or equivalent.
Eye protection	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
Skin and body protection	Wear standard coveralls and Category 3 Type 5 suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently. If there is a risk of significant exposure, consider a higher protective type suit.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	suspension
Colour	light brown
Odour	sweet, earthy
Odour Threshold	No data available
pH	5.2 - 5.4 (100 %) (23 °C)
Melting point/range	No data available
Boiling point/boiling range	91 °C
Flash point	> 91 °C No flash point - Determination conducted up to the boiling point.
Flammability	No data available
Auto-ignition temperature	475 °C
Thermal decomposition	No data available
Minimum ignition energy	Not applicable
Self-accelerating decomposition temperature (SADT)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available

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Density	ca. 1.05 g/cm ³ (20 °C)
Water solubility	dispersible
Partition coefficient: n-octanol/water	Not applicable
Viscosity, dynamic	10 - 100 mPa.s (21 °C) 10 - 100 mPa.s (21 °C)
Viscosity, kinematic	No data available
Surface tension	34 mN/m (25 °C) Determined in the undiluted form.
Impact sensitivity	Not impact sensitive.
Oxidizing properties	No data available
Explosivity	Not explosive 92/69/EEC, A.14 / OECD 113
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
10.4 Conditions to avoid	freezing Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Store only in the original container.
10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	LD50 (Rat) > 5,000 mg/kg
Acute inhalation toxicity	LC50 (Rat) > 5.19 mg/l Exposure time: 4 h Determined in the form of liquid aerosol.
Acute dermal toxicity	LD50 (Rabbit) > 2,000 mg/kg

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Skin corrosion/irritation No skin irritation (Rabbit)
Serious eye damage/eye irritation No eye irritation (Rabbit)
Respiratory or skin sensitisation Skin: Non-sensitizing. (Guinea pig)
Test conducted with a similar formulation.

Assessment STOT Specific target organ toxicity – single exposure

Bacillus amyloliquefaciens strain QST 713: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Bacillus amyloliquefaciens strain QST 713 did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Bacillus amyloliquefaciens strain QST 713: Test not required for microorganisms.

Assessment carcinogenicity

Bacillus amyloliquefaciens strain QST 713: Test not required for microorganisms.

Assessment toxicity to reproduction

Bacillus amyloliquefaciens strain QST 713: Test not required for microorganisms.

Assessment developmental toxicity

Bacillus amyloliquefaciens strain QST 713: Test not required for microorganisms.

Aspiration hazard

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

11.2 Information on other hazards

Endocrine disrupting properties

Assessment The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 (Oncorhynchus mykiss (rainbow trout)) 162 mg/l 3.24 x 10⁹ CFU/L
Exposure time: 30 d
The value mentioned relates to the active ingredient.
NOEC (Oncorhynchus mykiss (rainbow trout)) 86 mg/l 1.72 x 10⁹ CFU/L
Exposure time: 30 d
The value mentioned relates to the active ingredient.

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Toxicity to aquatic invertebrates

EC50 (Daphnia magna (Water flea)) 108 mg/l 2.16 x 10⁹ CFU/L
Exposure time: 48 h
The value mentioned relates to the active ingredient.

NOEC (Daphnia magna (Water flea)) 13 mg/l 2.6 x 10⁸ CFU/L
Exposure time: 48 h
The value mentioned relates to the active ingredient.

EC50 (Daphnia magna (Water flea)) 1.6 x 10⁶ CFU/mL
Exposure time: 21 d
The value mentioned relates to the active ingredient.

NOEC (Daphnia magna (Water flea)) 7.9 x 10⁵ CFU/mL
Exposure time: 21 d
The value mentioned relates to the active ingredient.

Toxicity to aquatic plants

NOEC (Desmodesmus subspicatus (green algae)) >= 100 mg/l
The value mentioned relates to the active ingredient.

LOEC (Desmodesmus subspicatus (green algae)) > 100 mg/l
The value mentioned relates to the active ingredient.

12.2 Persistence and degradability

Biodegradability

Bacillus amyloliquefaciens strain QST 713:
Evaluation of biodegradability is not relevant for micro-organisms.

12.3 Bioaccumulative potential

Bioaccumulation

Bacillus amyloliquefaciens strain QST 713:
Evaluation of bioaccumulation is not relevant for micro-organisms.

12.4 Mobility in soil

Mobility in soil

Bacillus amyloliquefaciens strain QST 713: Evaluation of mobility in soil is not relevant for micro-organisms.

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment

Bacillus amyloliquefaciens strain QST 713: Evaluation of PBT/vPvB properties is not relevant for micro-organisms.

12.6 Endocrine disrupting properties

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Additional ecological information

No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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Product	Dispose of this product only by using according to the label, or at an approved landfill or other approved facility.
Contaminated packaging	Triple rinse containers. Recycle if possible. If allowed under local authority, burn if circumstances, especially wind direction permit, otherwise crush and bury in an approved local authority facility. Do not use container for any other purpose.

SECTION 14: TRANSPORT INFORMATION

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

According to ADN/ADR/RID/IMDG/IATA not classified as dangerous goods.

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

14.1 – 14.5 Not applicable.

14.6 Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to IMO instruments

No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Further information

HSNO approval-Nr.	HSR000656
HSNO Controls	See www.epa.govt.nz
ACVM Reg.	Not required
ACVM Condition	See www.foodsafety.govt.nz

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
ECx	Effective concentration to x %
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard

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EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance of the product.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.