

Safety Data Sheet



Serenade® Prime Soil Ameliorant and Biofungicide

Version 2 / AUS
102000027846

Revision Date: 25.10.2023
Print Date: 25.10.2023

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Trade name Serenade® Prime Soil Ameliorant and Biofungicide
Product code (UVP) 80924771

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

Use Other
Restrictions on use See product label for restrictions.

1.3 Details of the supplier of the safety data sheet

Supplier Bayer Cropscience Pty Ltd
ABN 87 000 226 022
Level 4, 109 Burwood Rd
Hawthorn 3122
Victoria
Australia
Telephone (03) 9248 6888
Telefax (03) 9248 6800
Responsible Department 1800 804 479 Technical Information Service
Website www.crop.bayer.com.au

1.4 Emergency telephone no.

Emergency telephone no. 1800 033 111 IXOM Operations Pty Ltd

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance with Australian GHS Regulation

Not classified, the classification criteria are not met.

2.2 Label elements

Labelling according to specific Australian legislation

No hazard label for supply/use required.

2.3 Other hazards

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



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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

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

Chemical name	CAS-No.	Concentration [%]
Bacillus amyloliquefaciens strain QST 713		1.34
Other ingredients (non-hazardous) to 100%		

SECTION 4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Safety Data Sheet to the doctor.

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.
- 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 To date no symptoms are known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment Treat symptomatically. There is no specific antidote.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

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



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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	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Evacuate personnel to safe areas. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth. Do not allow run-off from fire fighting to enter drains or water courses.

Hazchem Code Not applicable

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.

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 Use only in area provided with appropriate exhaust ventilation.

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).



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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.

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

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.

Hand protection Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0.4 mm
Directive	Protective gloves complying with EN 374.

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.

General protective measures In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the above mentioned recommendations would apply.



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Engineering Controls

Advice on safe handling Use only in area provided with appropriate exhaust ventilation.

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
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)
Viscosity, kinematic	No data available
Surface tension	34 mN/m (25 °C) Determined in the undiluted form.
Impact sensitivity	Not impact sensitive.



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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
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 mutagenicity

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

Assessment carcinogenicity

No data available

Assessment carcinogenicity

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



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Assessment toxicity to reproduction

No data available

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.

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.

Aspiration hazard

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

Information on likely routes of exposure

May be harmful if inhaled.

May cause skin irritation. May cause sensitisation by skin contact.

May cause eye irritation.

May be harmful if swallowed.

Early onset symptoms related to exposure

Refer to Section 4

Delayed health effects from exposure

Refer to Section 11

Exposure levels and health effects

Refer to Section 4

Interactive effects

Not known

When specific chemical data is not available

Not applicable

Mixture of chemicals

Refer to Section 2.1

Further information

No further toxicological information is available.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) 162 mg/l 3.24 x 10⁹



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	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 10 ⁹ CFU/L Exposure time: 30 d The value mentioned relates to the active ingredient.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 108 mg/l 2.16 x 10 ⁹ 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 10 ⁸ CFU/L Exposure time: 48 h The value mentioned relates to the active ingredient. EC50 (Daphnia magna (Water flea)) 1.6 x 10 ⁶ CFU/mL Exposure time: 21 d The value mentioned relates to the active ingredient. NOEC (Daphnia magna (Water flea)) 7.9 x 10 ⁵ 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	No data available
Biodegradability	Bacillus amyloliquefaciens strain QST 713: Evaluation of biodegradability is not relevant for micro-organisms.
12.3 Bioaccumulative potential	
Bioaccumulation	No data available
Bioaccumulation	Bacillus amyloliquefaciens strain QST 713: Evaluation of bioaccumulation is not relevant for micro-organisms.
12.4 Mobility in soil	
Mobility in soil	No data available
Mobility in soil	Bacillus amyloliquefaciens strain QST 713: Evaluation of mobility in soil is not relevant for micro-organisms.
12.5 Other adverse effects	
Additional ecological information	No further ecological information is available.

SECTION 13. DISPOSAL CONSIDERATIONS

Triple-rinse containers before disposal. Add rinsings to spray tank. 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 deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways,



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desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. Do not burn empty containers or product.

DO NOT burn empty containers or product.

Refillable containers:

Empty contents fully into application equipment. Close all valves and return to point of purchase. Refer to product label for further information.

SECTION 14. TRANSPORT INFORMATION

According to national and international transport regulations not classified as dangerous goods.

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994

Australian Pesticides and Veterinary Medicines Authority approval number: 85292

SUSMP classification (Poison Schedule)

Exempt (Standard for the Uniform Scheduling of Medicines and Poisons)

SECTION 16. OTHER INFORMATION

Trademark information Serenade® is a Registered Trademark of the Bayer Group.

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
AU OEL	Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)
CAS-Nr.	Chemical Abstracts Service number
CEILING	Ceiling Limit Value
Conc.	Concentration
EC-No.	European community number
ECx	Effective concentration to x %
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
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 %



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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
OES BCS	OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"
PEAK	PEAK: Exposure Standard - Peak means a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SK-SEN	Skin sensitiser
SKIN_DES	SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure.
STEL	STEL: Exposure standard - short term exposure limit (STEL): A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.
TWA	TWA: Exposure standard - time-weighted average (TWA): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

This SDS summarises our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this SDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

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