

# Safety Data Sheet



## Serenade® Opti Biofungicide

Version 1 / AUS  
102000028243

Revision Date: 02.12.2022  
Print Date: 02.12.2022

### SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

#### 1.1 Product identifier

**Trade name** Serenade® Opti Biofungicide  
**Product code (UVP)** 80921837

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

**Use** Fungicide, Bactericide  
**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 1, 8 Redfern Road  
3123 Hawthorn East  
Victoria  
Australia

**Telephone** (03) 9248 6888  
**Telefax** (03) 9248 6800  
**Responsible Department** 1800 804 479 Technical Information Service  
**Website** [www.crop.bayer.com.au](http://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

Acute toxicity: Category 4  
H332 Harmful if inhaled.

Skin sensitisation: Category 1  
H317 May cause an allergic skin reaction.

#### 2.2 Label elements

##### Labelling according to specific Australian legislation

Hazard label for supply/use required.

##### Hazardous components which must be listed on the label:

Bacillus amyloliquefaciens strain QST 713

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**Signal word:** Warning

### Hazard statements

H332 Harmful if inhaled.  
H317 May cause an allergic skin reaction.

### Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P302 + P352 IF ON SKIN: Wash with plenty of water/ soap.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 Call a POISON CENTER/doctor/physician if you feel unwell.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P501 Dispose of contents/container in accordance with local regulation.

### 2.3 Other hazards

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

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Chemical nature

BACILLUS SUBTILIS QST713  $\geq 1.3E+10$  CFU/g  
Wettable powder (WP)

Chemical name	CAS-No.	Concentration [%]
Bacillus amyloliquefaciens strain QST 713		26.20
Diatomaceous earth	61790-53-2	$\geq 10.00 - \leq 30.00$
Starch	9005-25-8	$\geq 10.00 - \leq 30.00$
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. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

**Inhalation** Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.

**Skin contact** Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water.

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**Eye contact** Rinse immediately with plenty of water, also under the eyelids, 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** Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center immediately.

### 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. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. 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

**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** Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

**Further information** Use appropriate extinguishing media for material that is supplying fuel. Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. 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** Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

**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** Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

**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** Ensure adequate ventilation. Handle and open container in a manner as to prevent spillage.

**Hygiene measures** Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.  
Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

**7.2 Conditions for safe storage, including any incompatibilities**

**Requirements for storage areas and containers** Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.  
Keep away from direct sunlight. Protect from freezing.

**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 <sup>3</sup>		OES BCS*
Diatomaceous earth (Inhalable dust.)	61790-53-2	10 mg/m <sup>3</sup> (TWA)	04 2013	AU NOEL
Starch (Inhalable dust.)	9005-25-8	10 mg/m <sup>3</sup> (TWA)	12 2011	AU NOEL

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

**8.2 Exposure controls**



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<b>Respiratory protection</b>	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.
<b>Hand protection</b>	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.
<b>Eye protection</b>	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).
<b>Skin and body protection</b>	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.
<b>General protective measures</b>	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry. In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the above mentioned recommendations would apply.
<b>Engineering Controls</b>	
<b>Advice on safe handling</b>	Ensure adequate ventilation. Handle and open container in a manner as to prevent spillage.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

<b>Form</b>	powder
<b>Colour</b>	light brown
<b>Odour</b>	sweet, earthy
<b>Odour Threshold</b>	No data available

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<b>pH</b>	4.8 - 8.0 (1 %)
<b>Melting point/range</b>	No data available
<b>Boiling Point</b>	Not applicable
<b>Flash point</b>	Not applicable
<b>Flammability</b>	No data available
<b>Auto-ignition temperature</b>	No data available
<b>Thermal decomposition</b>	No data available
<b>Minimum ignition energy</b>	No data available
<b>Self-accelarating decomposition temperature (SADT)</b>	No data available
<b>Upper explosion limit</b>	Not applicable
<b>Lower explosion limit</b>	Not applicable
<b>Vapour pressure</b>	No data available
<b>Evaporation rate</b>	Not applicable
<b>Relative vapour density</b>	No data available
<b>Relative density</b>	No data available
<b>Density</b>	No data available
<b>Bulk density</b>	$\geq 0.40$ g/ml (loose)
<b>Water solubility</b>	dispersible
<b>Partition coefficient: n-octanol/water</b>	Not applicable
<b>Viscosity, dynamic</b>	No data available
<b>Viscosity, kinematic</b>	No data available
<b>Oxidizing properties</b>	No data available
<b>Explosivity</b>	No data available
<b>9.2 Other information</b>	Further safety related physical-chemical data are not known.

### SECTION 10. STABILITY AND REACTIVITY

<b>10.1 Reactivity</b>	Stable under normal conditions.
<b>10.2 Chemical stability</b>	Stable under recommended storage conditions.



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<b>10.3 Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4 Conditions to avoid</b>	Extremes of temperature and direct sunlight. freezing
<b>10.5 Incompatible materials</b>	No data available
<b>10.6 Hazardous decomposition products</b>	No decomposition products expected under normal conditions of use.

### SECTION 11. TOXICOLOGICAL INFORMATION

#### 11.1 Information on toxicological effects

<b>Acute oral toxicity</b>	LD50 (Rat) > 5,000 mg/kg
<b>Acute inhalation toxicity</b>	LC50 (Rat) 2.15 mg/l Determined in the form of liquid aerosol. highest concentration tested
<b>Acute dermal toxicity</b>	LD50 (Rabbit) > 5,050 mg/kg
<b>Skin corrosion/irritation</b>	slight irritation (Rabbit)
<b>Serious eye damage/eye irritation</b>	Moderate eye irritation (Rabbit)
<b>Respiratory or skin sensitisation</b>	Sensitising (Guinea pig) OECD Test Guideline 406, Buehler test

#### 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.

#### 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



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May be harmful if inhaled. Mists may cause respiratory tract irritation.  
Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.  
May cause eye irritation.  
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

Micro-organisms may have the potential to provoke skin and respiratory sensitisation.

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

<b>Toxicity to fish</b>	LC50 (Oncorhynchus mykiss (rainbow trout)) 162 mg/l Exposure time: 30 d The value mentioned relates to the active ingredient.
<b>Toxicity to aquatic invertebrates</b>	LC50 (Daphnia magna (Water flea)) 108 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient.
<b>Toxicity to aquatic plants</b>	NOEC (Desmodesmus subspicatus (green algae)) $\geq$ 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



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is not relevant for micro-organisms.

### 12.5 Other adverse effects

**Additional ecological information** No other effects to be mentioned.

## SECTION 13. DISPOSAL CONSIDERATIONS

Plastic and foil bags:

Single rinse before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. Puncture and bury empty bags 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 bags and product should not be burnt. Do not reuse container for any other purpose.

## 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: 82242

### 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

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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 %
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.