

# SAFETY DATA SHEET



## SERENADE OPTIMUM

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

#### 1.1 Product identifier

Trade name SERENADE OPTIMUM  
Product code (UVP) 80921837

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

Use Fungicide, Bactericide  
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  
3 Argus Place, Hillcrest  
Auckland 0627  
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)

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### 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) Regulations 2001

6.4A  
H320 Causes eye irritation.  
6.5B  
H317 May cause an allergic skin reaction.  
9.4C  
H443 Harmful to terrestrial invertebrates.

#### 2.2 Label elements

Labelling in accordance with Hazardous Substances Identification Regulations 2001

Hazard label for supply/use required.

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**Signal word:** Warning

### Hazard statements

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

### Precautionary statements

P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.  
P321 Specific treatment (see supplemental first aid instructions on this label).  
P501 Dispose of contents/container in accordance with local regulation.

### 2.3 Other hazards

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

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Mixtures

#### Chemical nature

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

#### Hazardous components

Name	CAS-No.	Conc. [%]
Bacillus subtilis strain QST 713		26.2

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## SECTION 4: FIRST AID MEASURES

### 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. If symptoms persist, call a physician.

**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.

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**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.

Contact the National Poisons and Hazardous Chemicals Information center in Dunedin, PO Box 913, Dunedin. Phone 0800 POISON (0800 764 766).

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## 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** 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.

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## 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** Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. 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** Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

### 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.

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

**Suitable materials** LDPE (low density polyethylene)

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Bacillus subtilis strain QST 713		20,000,000 CFU/m <sup>3</sup>		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.

**Respiratory protection** When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in

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accordance with the appropriate regulatory standards and/or industry recommendations.

<b>Hand protection</b>	Chemical resistant nitrile rubber gloves
<b>Eye protection</b>	Safety glasses with side-shields
<b>Skin and body protection</b>	Wear long-sleeved shirt and long pants and shoes plus socks.
<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.

## 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
<b>pH</b>	4.8 - 8.0 at 100 %
<b>Flash point</b>	Not applicable
<b>Minimum ignition energy</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>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>	Not applicable
<b>Explosivity</b>	No data available

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

**Thermal decomposition** No data available

**10.2 Chemical stability** 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>	freezing Extremes of temperature and direct sunlight.
<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.

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## 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 attainable concentration. No deaths
<b>Acute dermal toxicity</b>	LD50 (Rabbit) > 5,050 mg/kg
<b>Skin irritation</b>	slight irritation (Rabbit)
<b>Eye irritation</b>	Moderate eye irritation. (Rabbit)
<b>Sensitisation</b>	Sensitising (Guinea pig)

### Assessment STOT Specific target organ toxicity – single exposure

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

### Assessment STOT Specific target organ toxicity – repeated exposure

Bacillus subtilis did not cause specific target organ toxicity in experimental animal studies.

### Assessment mutagenicity

Bacillus subtilis: Test not required for microorganisms.

### Assessment carcinogenicity

Bacillus subtilis: Test not required for microorganisms.

### Assessment toxicity to reproduction

Bacillus subtilis: Test not required for microorganisms.

### Assessment developmental toxicity

Bacillus subtilis: Test not required for microorganisms.

### Further information

Acute toxicity studies have not been performed on this product as formulated.  
Micro-organisms may have the potential to provoke skin and respiratory sensitisation.

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### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1 Toxicity

**Toxicity to fish** LC50 (Oncorhynchus mykiss (rainbow trout)) 162 mg/l  
Exposure time: 30 d  
The value mentioned relates to the active ingredient.

**Toxicity to aquatic invertebrates** LC50 (Daphnia magna (Water flea)) 108 mg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient.

**Toxicity to aquatic plants** 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 subtilis:  
Evaluation of biodegradability is not relevant for micro-organisms.

#### 12.3 Bioaccumulative potential

**Bioaccumulation** Bacillus subtilis:  
Evaluation of bioaccumulation is not relevant for micro-organisms.

#### 12.4 Mobility in soil

**Mobility in soil** Bacillus subtilis: Evaluation of mobility in soil is not relevant for micro-organisms.

#### 12.5 Results of PBT and vPvB assessment

**PBT and vPvB assessment** Bacillus subtilis: Evaluation of PBT/vPvB properties is not relevant for micro-organisms.

#### 12.6 Other adverse effects

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

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### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

**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.

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### SECTION 14: TRANSPORT INFORMATION

This transportation information is not intended to convey all specific regulatory information relating to

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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 Annex II of MARPOL and the IBC Code**

No transport in bulk according to the IBC Code.

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## SECTION 15: REGULATORY INFORMATION

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

HSNO approval-Nr.	HSR000656
HSNO Controls	See <a href="http://www.epa.govt.nz">www.epa.govt.nz</a>
ACVM Reg.	P9409
ACVM Condition	See <a href="http://www.foodsafety.govt.nz">www.foodsafety.govt.nz</a>

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## 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
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



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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.
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