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 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

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
No hazard label for supply/use required.

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

SECTION 3. COMPOSITION/INFO MATION ON INGREDIENTS

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
</table>
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: 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.

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: In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.
### 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.

**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.

**SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacillus amyloliquefaciens strain QST 713</td>
<td></td>
<td>20,000,000 CFU/m³</td>
<td></td>
<td>OES BCS*</td>
</tr>
</tbody>
</table>

*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.

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.

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.

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)
Boiling point/boiling range  >= 100 °C
Minimum ignition energy  Not applicable
Safety Data Sheet

Serenade® Prime Soil Ameliorant and Biofungicide

Version 2 / AUS
102000027846
Revision Date: 21.02.2019
Print Date: 25.02.2019

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
Density  ca. 1.05 g/cm³ (20 °C)
Water solubility  dispersible
Partition coefficient: n-octanol/water  Not applicable
Viscosity, dynamic  10 - 100 mPa.s (21 °C)
Impact sensitivity  Not impact sensitive.
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
Thermal decomposition  No data available

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

Assessment carcinogenicity
No data available

Assessment toxicity to reproduction
No data available

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 10^9 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

**12.3 Bioaccumulative potential**

Bioaccumulation
No data available

**12.4 Mobility in soil**

Mobility in soil
No data available

**12.5 Other adverse effects**

Additional ecological information
No other effects to be mentioned.

---

**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, 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.

---

**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 %
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 sensitisr
SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure.

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: 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.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

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