SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

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: Soil Ameliorant
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

No other hazards known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacillus subtilis, strain QST 713</td>
<td></td>
<td>1.34</td>
</tr>
</tbody>
</table>
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. 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.

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. 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

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.

Additional advice

Use personal protective equipment. If material 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
No control parameters known.

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.
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.

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 at 1 % (23 °C) (deionized water)
Boiling point/boiling range  >= 100 °C
Flash point  No data available
Minimum ignition energy  Not applicable
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. 1.03 g/cm³ at 20 °C
Water solubility  dispersible
Partition coefficient: n-octanol/water  Not applicable
Viscosity, dynamic  10 - 100 mPa×s at 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
Determined in the form of liquid aerosol.

**Acute dermal toxicity**  
LD50 (Rabbit) > 2,000 mg/kg

**Skin irritation**  
No skin irritation (Rabbit)

**Eye irritation**  
No eye irritation (Rabbit)

**Sensitisation**  
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)) \(162 \text{ mg/l } 3.24 \times 10^9 \text{ CFU/L}\)

Exposure time: 30 d

The value mentioned relates to the active ingredient.
Toxicity to aquatic invertebrates

- NOEC (Oncorhynchus mykiss (rainbow trout)) 86 mg/l $1.72 \times 10^9$ CFU/L
  Exposure time: 30 d
  The value mentioned relates to the active ingredient.

- EC50 (Daphnia magna (Water flea)) 108 mg/l $2.16 \times 10^9$ CFU/L
  Exposure time: 48 h
  The value mentioned relates to the active ingredient.

- NOEC (Daphnia magna (Water flea)) 13 mg/l $2.6 \times 10^8$ CFU/L
  Exposure time: 48 h
  The value mentioned relates to the active ingredient.

- EC50 (Daphnia magna (Water flea)) $1.6 \times 10^6$ CFU/mL
  Exposure time: 21 d
  The value mentioned relates to the active ingredient.

- NOEC (Daphnia magna (Water flea)) $7.9 \times 10^5$ CFU/mL
  Exposure time: 21 d
  The value mentioned relates to the active ingredient.

Toxicity to aquatic plants

- NOEC (Desmodesmus subspicatus (green algae)) $\geq 100$ 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

- 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 or preferably pressure rinse containers before disposal. Dispose of rinsings in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots. 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 for appropriate disposal 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 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**

Registration not required according to the Agricultural and Veterinary Chemicals Code Act 1994

**SECTION 16. OTHER INFORMATION**

**Trademark information**

Serenade® is a Registered Trademark of the Bayer Group.

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.

**Abbreviations and acronyms**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways</td>
</tr>
<tr>
<td>ADR</td>
<td>European Agreement concerning the International Carriage of Dangerous Goods by Road</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute toxicity estimate</td>
</tr>
<tr>
<td>AU OEL</td>
<td>Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)</td>
</tr>
<tr>
<td>CAS-Nr.</td>
<td>Chemical Abstracts Service number</td>
</tr>
<tr>
<td>CEILING</td>
<td>Ceiling Limit Value</td>
</tr>
<tr>
<td>Conc.</td>
<td>Concentration</td>
</tr>
<tr>
<td>EC-No.</td>
<td>European community number</td>
</tr>
<tr>
<td>ECx</td>
<td>Effective concentration to x %</td>
</tr>
<tr>
<td>EINECS</td>
<td>European inventory of existing commercial substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European list of notified chemical substances</td>
</tr>
<tr>
<td>EN</td>
<td>European Standard</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IBC</td>
<td>International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)</td>
</tr>
<tr>
<td>ICx</td>
<td>Inhibition concentration to x %</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods</td>
</tr>
<tr>
<td>LCx</td>
<td>Lethal concentration to x %</td>
</tr>
</tbody>
</table>
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 CropScience "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 sensitisier
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

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

END OF SDS