

SAFETY DATA SHEET



SERENADE® OPTI

Version 2.1 / CDN
102000028243

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Revision Date: 11/21/2023
Print Date: 02/15/2024

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

Product identifier

Trade name	SERENADE® OPTI
Product code (UVP)	80921837
SDS Number	102000028243
PCP Registration No.	31666

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

Use	Fungicide, Bactericide
Restrictions on use	See product label for restrictions.
Information on supplier	
Supplier	Bayer CropScience Inc #200, 160 Quarry Park Blvd, SE Calgary, Alberta T2C 3G3 Canada
Responsible Department	Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days)	1-800-334-7577
Product Information Telephone Number	1-888-283-6847

SECTION 2: HAZARDS IDENTIFICATION

Classified in accordance with Part 2 of the Hazardous Products Regulations

Skin sensitisation: Category 1
Acute toxicity(Inhalation): Category 4

Labelling in accordance with Part 3 of the Hazardous Products Regulations



Signal word: Warning

Hazard statements

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May cause an allergic skin reaction.
Harmful if inhaled.

Precautionary statements

Avoid breathing dust.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.
Use only outdoors or in a well-ventilated area.
IF ON SKIN: Wash with plenty of water/ soap.
If skin irritation or rash occurs: Get medical advice/ attention.
Specific treatment (see supplemental first aid instructions on this label).
Wash contaminated clothing before reuse.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)

Micro-organisms may have the potential to provoke sensitising reactions.
No physical hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Bacillus subtilis strain QST 713		26.2
BACILLUS SUBTILIS QST713 $\geq 1.3E+10$ CFU/g		

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
Eye contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

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Most important symptoms and effects, both acute and delayed

Symptoms To date no symptoms are known.

Indication of any immediate medical attention and special treatment needed

Treatment Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for firefighters In the event of fire and/or explosion do not breathe fumes. 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.

Specific hazards from the substance or mixture which can increase the fire

Flash point Not applicable

Auto-ignition temperature No data available

Lower explosion limit Not applicable

Upper explosion limit Not applicable

Explosivity No data available

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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

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. 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.

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

Precautions for safe handling

Advice on safe handling Avoid dust formation. Use only in area provided with appropriate exhaust 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.

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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
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Bacillus subtilis strain QST 713		20,000,000 CFU/m ³		OES BCS*
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*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

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	Respiratory protection is not required under anticipated circumstances of exposure. When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.
Hand protection	Waterproof gloves
Eye protection	Tightly fitting safety goggles
Skin and body protection	Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures	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

Information on basic physical and chemical properties

Form	powder
Colour	light brown
Odour	sweet, earthy
Odour Threshold	No data available
pH	4.8 - 8.0 (1 %)
Melting point/range	No data available
Boiling Point	Not applicable
Flash point	Not applicable
Flammability	No data available
Auto-ignition temperature	No data available
Thermal decomposition	No data available
Minimum ignition energy	No data available
Self-accelarating	No data available

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decomposition temperature (SADT)

Upper explosion limit	Not applicable
Lower explosion limit	Not applicable
Vapour pressure	No data available
Evaporation rate	Not applicable
Relative vapour density	No data available
Relative density	No data available
Density	No data available
Bulk density	≥ 0.40 g/ml (loose)
Water solubility	dispersible
Partition coefficient: n-octanol/water	Not applicable
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Oxidizing properties	No data available
Explosivity	No data available
Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Protect from sunlight. Do not expose to temperatures exceeding 40 °C/ 104 °F. freezing
Incompatible materials	No incompatible materials known.
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

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SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Eye contact, Skin contact, Inhalation, Ingestion
Immediate Effects	
Eye	May cause temporary eye irritation.
Skin	May cause sensitisation by skin contact.
Ingestion	Not expected to produce significant adverse effects when recommended use instructions are followed.
Inhalation	May be harmful if inhaled. Mists may cause respiratory tract irritation.

Information on toxicological effects

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

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.

ACGIH

None.

NTP

None.

IARC

None.

ACGIH

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None.

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

Bacillus subtilis: Test not required for microorganisms.

Assessment developmental toxicity

Bacillus subtilis: Test not required for microorganisms.

Aspiration hazard

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

Further information

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

SECTION 12: ECOLOGICAL INFORMATION

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.
Biodegradability	Bacillus subtilis: Evaluation of biodegradability is not relevant for micro-organisms.
Bioaccumulation	Bacillus subtilis: Evaluation of bioaccumulation is not relevant for micro-organisms.
Mobility in soil	Bacillus subtilis: Evaluation of mobility in soil is not relevant for micro-organisms.
Results of PBT and vPvB assessment	
PBT and vPvB assessment	Bacillus subtilis: Evaluation of PBT/vPvB properties is not relevant for micro-organisms.

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Additional ecological information	No other effects to be mentioned.
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.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Dispose in accordance with all local, state/provincial and federal regulations.
Contaminated packaging	Consult state and local regulations regarding the proper disposal of container. Follow advice on product label and/or leaflet.

SECTION 14: TRANSPORT INFORMATION

According to national and international transport regulations this material is not classified as dangerous goods / hazardous material.

SECTION 15: REGULATORY INFORMATION

PCP Registration No. 31666

PMRA Information:

Read the label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

This chemical is a pest control product regulated by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. The following is the hazard information required on the pest control product label:

Hazard statements:	Potential skin sensitizer. May cause eye irritation.
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There are Canada-specific environmental requirements for handling, use, and disposal of this pest control product that are indicated on the label.

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SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Fourth Edition Ratings Guide)

Health - 2 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard,
* = chronic health hazard

Reason for Revision: The following sections have been revised: Section 11: Toxicological Information.
Section 15: Regulatory information. Reviewed and updated for general editorial purposes.

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