



Serenade[®] ASO

Replaces all previous editions

SECTION 1: IDENTIFICATION OF SUBSTANCE / PREPARATION AND COMPANY / UNDERTAKING

Product Name:	Serenade [®] ASO	Synonyms:	QST 713 AS organic; QRD143AS; QRD 145AS
Product Use:	Fungicide / Bactericide		
Manufacturer: Address:	AgraQuest, Inc. 1540 Drew Avenue Davis, California 95618, USA	Distributor: Address:	Not Applicable
Telephone:	1.530.750.0150	Telephone:	Not Applicable
Emergency Phone: (CHEMTREC)	In USA call CHEMTREC 24-hour toll-free hotline at 1.800.424.9300 Outside USA, call 1.703.527.3887 (collect calls accepted)		
Registrations:	See Section 15		

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient:</u>	<u>CAS No.</u>	<u>Percent</u>
1. <i>Bacillus subtilis</i> , strain QST 713	Not Applicable	1.34% (Nominal)
2. Mixture of inert, non-reactive ingredients	Not Applicable to mixtures	98.66%

Section 2 Notes: This preparation contains no hazardous substances per Directive 67/548/EEC.

SECTION 3: HAZARDS IDENTIFICATION

Emergency Overview: This preparation is not considered to be hazardous to humans or the environment. Product has very low toxicity via ingestion, skin contact, or inhalation.

Possible Routes of Entry: Inhalation, eyes, and skin

Potential Health Effects from Over-exposure

Skin/ Eye Irritation: Direct contact with skin or eyes may cause mild irritation in some individuals.

Inhalation: Inhalation of spray mist may cause respiratory tract irritation in some individuals.

Section 3 Notes: In the unlikely event that over-exposure occurs, follow first aid measures in section 4.

SECTION 4: FIRST AID MEASURES

General: Remove from source of exposure. If irritation or other signs of toxicity occur, seek medical attention.

Eyes: Hold eye open and rinse slowly and gently with plenty of water for at least 15 minutes. If present, remove contact lenses and continue rinsing eye.

Skin: Remove contaminated clothing. Thoroughly wash skin with plenty of soap and water.

Inhalation: Move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration.

Ingestion: Call a doctor immediately if a large amount is swallowed. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person.

Note to Physicians and First Aid Providers: This product has low oral, dermal, and inhalation toxicity. Direct contact with eyes may cause temporary irritation. Provide symptomatic and supportive care as necessary.

SECTION 5: FIRE-FIGHTING MEASURES

General: Use methods and protective gear that are appropriate for the conditions and size of the fire.

Extinguishing Media: Use appropriate media for underlying cause and combustibles involved in the fire.

Special Equipment: Self-contained breathing apparatus and full protective gear according to the conditions and size of the fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear suitable protective clothing such as long-sleeved shirt, pants, waterproof gloves and shoes with socks.

Methods for Clean Up: Carefully mop or sweep up spill and place in a closed container for disposal. Rinse area with water.

Section 6 Notes: Refer to section 8 for personal protection and section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Handling: Use handling procedures that minimize exposure to the product.

Storage: Store in a cool, dry, well-ventilated place in original container. Keep container closed when not in use. Do not contaminate other pesticides, fertilizers, water, or feed by storage or disposal.

Section 7 Notes: Avoid contact with skin, eyes and clothing. Avoid inhalation of spray mist. Wash any contamination from skin or eyes immediately. Wash hands and exposed skin before eating, drinking, smoking or using the toilet.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

General: Protective clothing should be selected according to the conditions likely to be encountered in the workplace. Ensure good ventilation. No exposure limits have been established.

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to reduce airborne exposure at locations/operations where spray mist may be generated.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION continued

Personal Protective Equipment:

- Respiratory: Not normally required. However, if needed, use a dust/mist filtering face mask or respirator.
- Eyes and Face: Chemical safety goggles or safety glasses with side shields.
- Hands/Skin: Gloves made from chemically resistant material such as neoprene, vinyl, rubber, or nitrile.
- Other Clothing: Wear suitable protective clothing such as long-sleeved shirt, pants, and shoes with socks.
- Hygienic Practices: Wash hands and exposed skin before eating, drinking, smoking or using the toilet.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Light to medium brown aqueous dispersion
- Odor: Sweet, earthy odor
- Melting Point: Not Applicable
- Boiling Point: $\geq 100^{\circ}\text{C}$ ($\geq 212^{\circ}\text{F}$)
- Density: $1.0 - 1.3\text{ g/cm}^3$
- Solubility in Water: Dispersible in water
- pH as Supplied: 4.8 – 6.0

SECTION 10: STABILITY AND REACTIVITY

- Stability: Stable, material is non-reactive.
- Conditions to Avoid: None that are known.
- Materials to Avoid: None that are known.
- Hazardous Decomposition Products: None that are known.
- Hazardous Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Possible Routes of Entry: Inhalation, eyes, and skin

Potential Health Effects from Over-exposure

- Skin/ Eye Irritation: Direct contact with skin or eyes may cause slight to mild irritation in some individuals.
- Inhalation: Inhalation of spray mist may cause respiratory tract irritation in some individuals.

Acute studies on a similar formulation:

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|--|--------------------------|-----------------------------|-------------|
| Acute Oral LD ₅₀ (Rat): | > 5,000 mg/kg | Eye Irritation (Rabbit): | Nonirritant |
| Acute Dermal LD ₅₀ (Rabbit): | > 5,000 mg/kg | Dermal Irritation (Rabbit): | Nonirritant |
| Acute Inhalation LD ₅₀ (Rat): | > 1.4 mg/L (Limit test)* | | |

Section 11 Notes: None of the components of this product are listed as carcinogenic by NTP, IARC, or OSHA.

* 1.4 mg/L was the maximum attainable aerosol concentration for this test due to the physical nature of the product. No deaths or toxic effects were observed in the test animals during the study period.

SECTION 12: ECOLOGICAL INFORMATION

Ecological Information: With regard to environmental fate and behavior this product is not expected to impose any environmental risk.

Ecotoxicity Information: Tests with the technical active ingredient in various aquatic and terrestrial vertebrates and invertebrates showed this product to be non-toxic to all the species tested.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal Method: Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to label instructions, one acceptable method of disposal is to incinerate in accordance with local, regional, and national environmental regulations.

Empty Container: Completely empty container into application equipment, rinse with water and add rinsate to application equipment. Dispose of empty container in accordance with applicable environmental regulations.

Section 13 Notes: Regulatory requirements are subject to change and acceptable methods of disposal may vary by location. The appropriate agencies should be contacted for advisement prior to disposal.

SECTION 14: TRANSPORT INFORMATION

Land:	ADR / RID Class:	Not controlled under ADR (Europe)
Water:	IMDG Class:	Not controlled under IMDG
Air:	IATA – DGR Class:	Not controlled under IATA
Other:	U.S. DOT:	Not Regulated
	Freight Classification:	Insecticides, Fungicides N.O.I., Other Than Poisons. NMFC 155050 Class 60
	Canadian TDG:	Not regulated under Canadian Transport of Dangerous Goods Regulations

SECTION 15: REGULATORY INFORMATION

Labeling According to EC Directives:

Symbol: Not Required
R-phrases: Not Required

S:phrases: S 2 Keep out of reach of children
(Recommended) S 20/21 When using do not eat, drink or smoke
S 24/25 Avoid contact with skin and eyes
S 29/35 Do not empty into drains; dispose of this material and its container in a safe way

U.S. EPA SARA: No acute or chronic health hazards. No fire, release of pressure, or reactivity hazards.
(Title III Classification)

Registration Information

US: EPA Reg. No. 69592-12
Canada: PCP No. 28626

SECTION 16: OTHER INFORMATION

Reason for Revision: New logo Updated freight classification number. Supersedes MSDS dated: September 17, 2009

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