CEASE®
Fungicide/Bactericide
Revision Date: May 6, 2015

SAFETY DATA SHEET

1. IDENTIFICATION

GENERAL USE: Fungicide/Bactericide
COMMON NAME: CEASE®

MANUFACTURED BY:
Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
USA

DISTRIBUTED BY:
BioWorks, Inc.
100 Rawson Rd, Suite 205
Victor, NY 14564

EMERGENCY TELEPHONE NUMBERS: Bayer Environmental Science: 800-334-7577
BioWorks, Inc: 800-877-9443
CHEMTREC: 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification:	This material is not hazardous under the criterial of the Federal OSHA Hazard Communication standard 29CFR 1910.1200
Signal Word:	None
Pictogram:	None
Hazard Statement:	None
Precautionary Statements:	Micro-Organisms may have the potential to provoke sensitizing reactions.
Unclassified Hazards:	None
Ingredients with Unknown Toxicity:	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product contains the following ingredients:

COMPONENT	CAS No.	%
Bacillus subtilis strain QST 713	Not Applicable	1.34% (Nominal)

4. 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.

MOST IMPORTANT SYSMPTOMS AND EFECTS, BOTH ACUTE AND DELAYED SYMPTOMS

No symptoms known or expected.

IMMEDIATE MEDICAL ATTENTION NEEDED:

Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

5. FIRE-FIGHTING MEASURES

Extinguishing media Suitable	Water spray, Foam, Dry chemical, Carbon dioxide (CO2)
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 fire-fighters	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.
FLASH POINT	no data available
AUTOIGNITIONTEMPERATURE	no data available

LOWER EXPLOSION LIMIT	no data available
UPPEREXPLOSION LIMIT	no data available
EXPLOSIVITY	not applicable

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 CLEANUP	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. Do not allow to enter soil, waterways or waste water canal.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:

Advice on safe handling	No specific precautions required when handling unopened packs/containers; follow relevant manual handling advice. Ensure adequate ventilation.
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.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Store in original container and out of the reach of children, preferably in a locked storage area. Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Control parameters	No control parameters known.

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	Chemical-resistant gloves made of waterproof material such as neoprene, butyl rubber, barrier laminate or nitrile rubber.
Eye protection	Safety glasses with side-shields
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	brown
PHYSICAL STATE	suspension
ODOR	sweet earthy
ODOR THRESHOLD	no data available
pH	5.2 - 5.4
VAPOR PRESSURE	no data available
VAPOR DENSITY	no data available
BULK DENSITY	ca. 1.050 g/cm³ at 20 °C
EVAPORATION RATE	no data available
BOILING POINT	>= 100 °C / 212 °F
MELTING / FREEZING POINT	no data available
SOLUBILITY in water:	dispersible
MINIMUM IGNITION ENERGY	not applicable
PARTITION COEFFICIENT	not applicable
AUTO-IGNITION TEMPERATURE	no data available
LOWER EXPLOSION LIMIT	no data available
UPPER EXPLOSION LIMIT	no data available
EXPLOSIVITY	not applicable
OTHER INFORMATION	Further safety related physical-chemical data are not known.

10. STABILITY AND REACTIVITY

REACTIVITY	
THERMAL DECOMPOSITION	no data available
CHEMICAL STABILITY	Stable under recommended storage conditions.
POSSIBILITY OF HAZARDOUS REACTIONS	
	No hazardous reactions when stored and handled according to prescribed instructions.
CONDITIONS TO AVOID	freezing

	Extremes of temperature and direct sunlight.
INCOMPATIBLE MATERIALS	no data available

HAZARDOUS DECOMPOSITION PRODUCTS

No decomposition products expected under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

EXPOSURE ROUTES	Inhalation, Eye contact, Skin contact
IMMEDIATE EFFECTS	
EYE	May cause mild irritation to eyes.
SKIN	May cause mild irritation to the skin.
INHALATION	Harmful if inhaled.Mists may cause respiratory tract irritation.

INFORMATION ON TOXICOLOGICAL EFFECTS

Acute oral toxicity	LD50 (rat) > 5,000 mg/kg
	Test conducted with a similar formulation.
Acute inhalation toxicity	LC50 (rat) > 1.45 mg/l
	Determined in the form of liquid aerosol.
	Highest attainable concentration.
	No deaths
	Test conducted with a similar formulation.
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 repeated dose toxicity:
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.
OSHA
None.
Assessment toxicity to reproduction
Bacillus subtilis: Test not required for microorganisms.
Assessment developmental toxicity
Bacillus subtilis: Test not required for microorganisms.

12. ECOLOGICAL INFORMATION

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 (Scenedesmus subspicatus) >= 100 mg/l The value mentioned relates to the active ingredient. LOEC (Scenedesmus subspicatus) > 100 mg/l The value mentioned relates to the active ingredient.
Biodegradability	Bacillus subtilis: ; Evaluation of biodegradability is not relevant for microorganisms.
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 microorganisms.
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. Do not apply when weather conditions favor runoff or drift. Apply this product as specified on the label.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	It is best to use all of the product in accordance with label directions. If It is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Never place unused product down any indoor or outdoor drain.
Contaminated packaging	Triple rinse containers.

	Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke. Follow advice on product label and/or leaflet.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

14. TRANSPORT INFORMATION

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

15. REGULATORY INFORMATION

EPA Registration No. 264-1155-68539

US Federal Regulations
TSCA list
None.
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.
SARA Title III - Section 302 - Notification and Information
None.
SARA Title III - Section 313 - Toxic Chemical Release Reporting
None.

US States Regulatory Reporting
CA Prop65
This product does not contain any substances known to the State of California to cause cancer.
This product does not contain any substances known to the State of California to cause reproductive harm.
US State Right-To-Know Ingredients
None.

Canadian Regulations
Canadian Domestic Substance List
None.

Environmental
CERCLA
None.

Clean Water Section 307 Priority Pollutants
None.
Safe Drinking Water Act Maximum Contaminant Levels
None.
EPA/FIFRA Information:
This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification
criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide
chemicals. Following is the hazard information required on the pesticide label:
Signal word: Caution!
Hazard statements: Harmful if inhaled.
Avoid breathing spray mist.
Remove and wash contaminated clothing before re-use.

16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):
Health - 1 Flammability - 1 Instability - 0 Others - none
HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)
Health - 0 Flammability - 1 Physical Hazard - 0 PPE -
0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: New Safety Data Sheet.

Revision Date: 03/26/2015
This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

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