



Materials Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY INFORMATION

Product Name: E1, endocellulase enzyme

Product Supplier: Infinite Enzymes
PO Box 2654
State University, AR 72467

Phone: (870) 926-9566
Fax: (870) 680-4348

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview

May cause irritation to eyes or severe damage. May cause irritation to the skin and respiratory tract. May be harmful if absorbed through skin. May be harmful if inhaled. May be harmful if swallowed. Heating with base or alkali could cause ammonia flash (ammonium sulfate). Exposure to large amounts through skin absorption, ingestion or inhalation could result in severe health effects due to sodium azide, a minor component.

Potential Health Effects

Eyes: Causes eye irritation. Overexposure may cause severe corneal damage.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Inhalation: May be harmful if inhaled. May cause nose and throat irritation if inhaled as a vapor or mist. May cause respiratory tract irritation. Inhalation of a large amount may cause headache, dizziness, low blood pressure, loss of vision, heart problems, convulsions, coma and death.

Ingestion: May be harmful if swallowed. May cause oral and gastrointestinal irritation. Ingestion of large amount may cause local tissue damage, nausea, vomiting, diarrhea, bleeding, low blood pressure, loss of vision, heart problems, convulsions, coma and possibly death.

SECTION 3: COMPOSITION/INGREDIENT INFORMATION

Ingredient, CAS Number	Approximate % by weight	ACGIH	OSHA
Cellulase, bacterial made in corn 9012-54-8	0.7	Not listed	Not listed
Water 7732-18-5	99.3	Not listed	Not listed

Materials Safety Data Sheet



SECTION 4: FIRST AID MEASURES

In case of skin contact: Wash with plenty of water.
In case of eye contact: Rinse thoroughly with water for at least 15 minutes and consult a physician.
If inhaled: If breathed in, move person to fresh air. Seek medical attention if breathing becomes difficult or if cough develops. If not breathing, give artificial respiration.
If ingested: Rinse mouth with water and contact a physician or poison control center for instructions.

SECTION 5: FIRE FIGHTING MEASURES

Conditions of flammability: Not flammable or combustible as packaged.
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters: Wear self-contained breathing apparatus for fire-fighting if necessary.
Hazardous combustion products: Hazardous decomposition products may form under fire conditions. Nature of decomposition products not known.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist or gas.
Environmental precautions: Do not let product enter drains.
Methods and materials for containment and cleaning up: Use a suitable closed container.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with skin, eyes and mouth.
Recommended storage at 2-8 °C.

SECTION 8: EXPOSURE CONTROLS/ PPE

Engineering Controls

Respiratory protection: Work under adequate ventilation.

Personal Protective equipment

Respiratory protection: Respiratory protection is not required unless exposure to acid or base is anticipated. If a respirator is deemed appropriate, use a full-face respirator with combination or type ABEK respirator cartridge. Make sure respirator has been fitted properly before use.
Hand protection: Use gloves that have been inspected prior to use. Use proper glove removal technique to avoid skin contact with product. Dispose of

	contaminated gloves after use in accordance with applicable laws.
	Wash hands after use.
Eye protection:	Approved safety glasses with side-shields should be used.
Skin and body protection:	The use of a lab coat or impervious clothing is recommended.
Hygiene:	Use good industrial hygiene and safety practices. Wash hands after use.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Off-white opalescent solution with a precipitate at cold temperatures.
Color:	Off-white to light yellow
Odor:	Odorless
pH:	4 – 7
Melting point/freezing point:	No data
Boiling point:	No data
Flash point:	No data
Specific gravity:	1.15-1.20
Vapor pressure:	No data

SECTION 10: STABILITY AND REACTIVITY

Product is stable under recommended storage conditions.

Avoid mixing with caustic as alkaline pHs can generate ammonia, an irritant and potential flash agent.

Avoid mixing with acids and oxidizing agents.

Avoid mixing with metals as metal azides are potentially explosive.

Hazardous decomposition products may be formed under fire conditions. Nature of decomposition products not known.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50:	No data available
Inhalation LD50:	No data available
Dermal LD50:	No data available

Chronic toxicity

Carcinogenicity

IARC:	No component of this product has been identified as a carcinogen by IARC.
NTP:	No component of this product has been identified as a carcinogen by NTP.
OSHA:	No component of this product has been identified as a carcinogen by OSHA.

Mutagenicity	No data available
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Teratogenicity No data available

Reproductive toxicity No data available

SECTION 12: ECOLOGICAL INFORMATION

If spilled in a lake, the ammonium sulfate may increase biological oxygen demand. Product not tested as a whole.

SECTION 13: DISPOSAL CONSIDERATIONS
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Disposal Method: Dispose of in accordance with federal, state and local laws. Avoid disposing in drains. This product contains a small amount of sodium azide which can react with metal in pipes and form potentially explosive metal azide compounds. If accidentally put down drain, flush with a large volume of water to prevent azide accumulation in pipes.

Waste Classification: California Presumed Hazardous Waste (22 CCR)
Sodium azide (26628-22-8)

RCRA P Series waste-Acutely Toxic Wastes
Sodium azide (26628-22-8)

SECTION 14: TRANSPORT INFORMATION
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DOT (US) Not dangerous

IMDG Not dangerous

IATA Not dangerous

SECTION 15: REGULATORY INFORMATION

OSHA Hazards: Target organ effect: skin and respiratory sensitizer, irritant.

SARA 302 Components: Sodium azide (CAS No. 26628-22-8)

SARA 313 Components: Ammonium sulfate (CAS No. 7783-20-2)

SARA 304 Components: Ammonium sulfate (CAS No. 7783-20-2)

SARA 311/312 Hazards: None



Materials Safety Data Sheet

Massachusetts Right to Know Components: Sodium azide (CAS-No. 26628-22-8)

Pennsylvania Right to Know Components: Sodium azide (CAS-No. 26628-22-8)

New Jersey Right to Know Components: Sodium azide (CAS-No. 26628-22-8)

California Prop. 65 Components: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm

SECTION 16: OTHER INFORMATION

Further information

This MSDS was prepared according to the best of our knowledge and does not represent a guarantee of the properties of the product. Always use good laboratory practices and chemical hygiene.

Prepared June 2012.