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## Safety Data Sheet

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

<b>Product Name:</b>	Endeavor
<b>Chemical Name:</b>	Enzyme preparation
<b>Declared activity:</b>	Glucoamylase (glucan 1,4-alpha-glucosidase)
<b>Recommended Use:</b>	Used in a variety of industrial processes and in certain consumer products
<b>Company Identification:</b>	CTE Global, Inc. 630 Dundee Road, Suite 440 Northbrook, IL 60062
<b>Emergency telephone number:</b>	1-800-424-9300 (Chemtrec) 24 hours every day

### SECTION 2: Hazards identification

**Classification:** Classification of the chemical in accordance with 29CFR §1910.1200  
WHMIS Classification

Respiratory sensitization	Category 1
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#### Label elements

##### **Danger**

##### **Hazard statements**

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

##### **Precautionary Statements - Prevention**

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P284 - In case of inadequate ventilation wear respiratory protection

##### **Precautionary Statements - Response**

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician



Hazards not otherwise classified (HNOX)

<b>1</b>	<b>Health</b>
<b>1</b>	<b>Flammability</b>
<b>0</b>	<b>Reactivity</b>
<b>X</b>	<b>Protective Equipment</b>



### SECTION 3: Composition/information on ingredients

Chemical name	CAS No	IUB No.	Weight-%
Glucoamylase (glucan 1,4-alpha-glucosidase) (aep)	9032-08-0	3.2.1.3	20 - 30

aep (active enzyme protein) contributes to the GHS classification.

### SECTION 4: First aid measures

In case of unintended overexposure, the following measures apply

#### Inhalation

**Effects** May cause allergic respiratory reaction.  
**Symptoms** Shortness of breath, wheezing and coughing. The effect of inhalation may be delayed.  
**First Aid** Remove person to fresh air. If signs/symptoms continue, get medical attention. Show this safety data sheet to the doctor in attendance.

#### Skin Contact

**Effects** May cause slight irritation.  
**Symptoms** Slight irritation.  
**First Aid** Remove and wash contaminated clothing before re-use. Wash off immediately with plenty of water. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance.

#### Eye Contact

**Effects** May cause slight irritation.  
**Symptoms** Slight irritation.  
**First Aid** Hold eye open and rinse slowly and gently with water for 15-20 min. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance.



**Ingestion**

<b>Effects</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Symptoms</b>	Irritation.
<b>First Aid</b>	Rinse mouth with water and drink plenty of water. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance.

**SECTION 5: Firefighting measures**

<b>Flammable Properties</b>	Slightly flammable according to HMIS criteria.
<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable Extinguishing Media</b>	None
<b>Hazardous Combustion Products</b>	None
<b>Specific Hazards Arising from the Chemical</b>	May cause allergic respiratory reaction
<b>Protective Equipment and Precautions for Firefighters</b>	Self-contained breathing apparatus and standard turn-out apparel.

**SECTION 6: Accidental release measures**

<b>Personal Precautions</b>	For personal protection see section 8.
<b>Environmental Precautions</b>	Collect spillage.
<b>Methods for cleaning up</b>	Avoid formation of dust and aerosols. Spilled preparation should be removed immediately to avoid formation of dust from dried preparation. Take up by mechanical means preferably by a vacuum cleaner equipped with a HEPA (High Efficiency Particulate Air) filter. Flush remainder carefully with plenty of water. Avoid splashing, high pressure washing or compressed air cleaning to avoid formation of aerosols. Ensure sufficient ventilation. Wash contaminated clothing.
<b>Other Information</b>	For personal protection see section 8.

## SECTION 7: Handling and storage

<b>Handling</b>	Avoid formation of dust and aerosols. Ensure adequate ventilation. Liquid enzyme preparations are dust free preparations. However, inappropriate handling may cause formation of dust or aerosols
<b>Storage</b>	Keep tightly closed in a dry and cool place. Temperature 0-25°C (32-77°F)
<b>Storage Conditions</b>	In unbroken packaging - dry and protect from the sun. The product has been formulated for optimal stability. Extended storage or adverse conditions such as higher temperatures or higher humidity may lead to a higher dosage requirement.

## SECTION 8: Exposure controls/personal protection

Chemical name	DNEL Dermal Acute Local (Workers)	DMEL Inhalation Long term Local (Workers)
Glucoamylase (glucan 1,4-alpha-glucosidase) (aep)	-	DMEL = 60 ng/m <sup>3</sup>

Derived No Effect Level (DNEL)

Derived Minimal Effect Level (DMEL)

### Occupational exposure controls

<b>Engineering Controls</b>	Ensure adequate ventilation, especially in confined areas. Maintain good conditions of industrial hygiene. Some processes may require enclosures, local exhaust ventilation, or other engineering controls to control airborne levels. Additional handling and healthy/safety information is available upon request
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### Personal Protective Equipment

<b>Respiratory Protection</b>	In case of insufficient ventilation wear suitable respiratory equipment that meets HEPA/P100 specifications.
<b>Eye Protection</b>	Wear safety glasses with side-shields (or goggles)
<b>Skin and body protection</b>	No special technical protective measures are necessary
<b>General Hygiene Considerations</b>	Handle in accordance with good industrial hygiene and safety practices

<b>Environmental exposure controls</b>	Local authorities should be advised if significant spillages cannot be contained
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**SECTION 9: Physical and chemical properties****Information on basic physical and chemical properties**

<b>Physical State:</b>	Liquid
<b>Color:</b>	Light to dark brown
<b>Odor:</b>	Slight fermentation odor
<b>pH:</b>	Adjusted to the range where active enzyme is stable - typically pH 4-9
<b>Melting point/Freezing point:</b>	No Data Available
<b>Boiling Point/Range:</b>	No Data Available
<b>Flash Point:</b>	Not Determined
<b>Evaporation rate:</b>	Not Available
<b>Flammability (solid, gas):</b>	Not Determined
<b>Upper/Lower Flammability or explosive limits:</b>	Not Available
<b>Vapor Pressure:</b>	No Data Available
<b>Vapor Density:</b>	Not Available
<b>Density (g/ml):</b>	1.15
<b>Solubility:</b>	Readily soluble in application-relevant solutions at all levels of concentration, temperature and pH which may occur in normal usage.
<b>Partition Coefficient (n-octanol/water):</b>	No Data Available
<b>Autoignition Temperature:</b>	Not Available
<b>Decomposition Temperature:</b>	Not Available
<b>Viscosity:</b>	Not Available
<b>Other Information:</b>	No Information Available

**SECTION 10: Stability and reactivity**

<b>Reactivity</b>	Not relevant
<b>Chemical stability</b>	Stable under recommended storage conditions
<b>Possibility of hazardous reactions</b>	None under normal processing
<b>Conditions to Avoid</b>	None



**Incompatible materials**                      None

**Hazardous Decomposition Products**   None

**SECTION 11: Toxicological information**

**Information on toxicological effects**

Repeated inhalation of enzyme dust or aerosols resulting from improper handling may induce sensitization and may cause allergic type 1 reactions in sensitized individuals

Mild skin irritation

Mild eye irritation

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea

Chemical name	Acute oral toxicity	Acute inhalation toxicity	Skin corrosion/irritation	Serious eye damage/eye irritation
Glucoamylase (glucan 1,4-alpha-glucosidase) (aep)	LD50: > 2000 mg/kg bw (OECD TG 401, 420)		Not irritating (OECD TG 404)	Not irritating (OECD TG 405)

Chemical name	Specific target organ toxicity (single exposure)	Genetic toxicity	Skin sensitization	Respiratory sensitization
Glucoamylase (glucan 1,4-alpha-glucosidase) (aep)		No indication of mutagenic effects (OECD TG 471, 476, 487)		Sensitizer (Human experience)

**SECTION 12: Ecological information**

**Toxicity**

Chemical name	Daphnia, acute	Algae, acute	Fish, acute
Glucoamylase (glucan 1,4-alpha-glucosidase) (aep)	EC50 (48 hours): 31.7 - 457 mg aep/l (OECD TG 202)	ErC50 (72 hours): >= 5.2 mg aep/l (OECD TG 201)	LC50 (96 hours): 58.3 - 326.7 mg aep/l (OECD TG 203)

**Persistence/Degradability**

Chemical name	Persistence and degradability	Partition coefficient (n-octanol/water)
Glucoamylase (glucan 1,4-alpha-glucosidase) (aep)	Readily biodegradable (OECD 301)	LogPow: <0

Chemical name	Bioaccumulative Potential
Glucoamylase (glucan 1,4-alpha-glucosidase) (aep)	Does not bioaccumulate

**Mobility in soil**                              Not relevant

**Other adverse effects**                      No information available

**SECTION 13: Disposal considerations**

<b>Disposal of wastes</b>	Dispose of in accordance with local regulations.
<b>Contaminated Packaging</b>	Dispose of wastes in an approved waste disposal facility.

**SECTION 14: Transport information****Transport Regulations**

No dangerous goods according to transport regulations  
No special precautions required

<b>UN-No</b>	Not applicable
<b>Proper Shipping Name</b>	Not applicable
<b>Packing Group</b>	Not applicable
<b>Reportable Quantity</b>	Not applicable
<b>Marine Pollutant</b>	Not applicable

**International Regulations**

<b>IATA</b>	Not Regulated
<b>IMDG</b>	Not Regulated

**SECTION 15: Regulatory information**USA, Federal Regulations

<b>TSCA Inventory</b>	The active ingredient and all components of the enzyme preparation are Listed on the TSCA inventory
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**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and 40 CFR Part 372.

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

USA, State Regulations

<b>California Proposition 65</b>	This product does not contain any intentionally added Proposition 65 chemicals.
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**Canada**

**DSL/NDSL**

All components are listed either on the DSL or NDSL

**WHMIS Statement**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HRP) and the SDS contains all the information required by WHMIS 2015.

**SECTION 16: Other information**

**GHS-Classification**

The GHS calculation method has been used for classification of this mixture.

**Disclaimer**

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text. Furthermore, as the conditions of use are beyond the control of CTE Global, Inc., it is the responsibility of the customer to determine the conditions of safe use of these products.

**End of Safety Data Sheet**