

Safety Data Sheet

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

Product Name: Strive EX

Chemical Name: Enzyme preparation

Declared activity: Glucoamylase (glucan 1,4-alpha-glucosidase)

Recommended Use: Saccharification of dextrin used in production of dextrose, starch based syrups, ethanol fermentation

Company Identification: CTE Global, Inc.
630 Dundee Road, Suite 440
Northbrook, IL 60062

Emergency telephone number: 1-800-424-9300 (Chemtrec) 24 hours every day

SECTION 2: Hazards identification

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

Respiratory sensitization	Category 1
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Label elements

GHS-US labeling

Hazard pictograms (GHS-US):



GHS08

Signal word (GHS-US): 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

P285 - 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

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	10-20
Trehalase, alpha,alpha-(aep)	9025-52-9	3.2.1.28	0.1-<1

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

* The exact percentage (concentration) of composition has been withheld as a trade secret

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
Effects

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms

Irritation

First Aid

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

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

SECTION 6: Accidental release measures

Personal Precautions	For personal protection see section 8.
Environmental Precautions	Collect spillage.
Methods for cleaning up	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. Ensuresufficient ventilation. Wash contaminated clothing.

For personal protection see section 8

SECTION 7: Handling and storage

Handling	Avoid formation of dust and aerosols. Ensure adequate ventilation Liquid enzyme preparations are dustfree preparations. However,
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inappropriate handling may cause formation of dust or aerosols.

Storage Keep tightly closed in a dry and cool place. Temperature 0-25°C (32-77°F)

Storage Conditions 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 ³
Trehalase, alpha,alpha-(aep)		DMEL = 60 ng/m ³

Derived No Effect Level (DNEL)

Derived Minimal Effect Level (DMEL))

Occupational exposure controls

Engineering Controls 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

Personal Protective Equipment

Respiratory Protection In case of insufficient ventilation wear suitable respiratory equipment that meets HEPA/P100 specifications.

Eye Protection Safety glasses with side-shields

Skin and body protection No special technical protective measures are necessary

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practices.

Environmental exposure controls Local authorities should be advised if significant spillages cannot be contained

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance: Milky, Light to dark brown liquid
Odor: Slight fermentation odor
pH: Adjusted to the range where active enzyme is stable-typically pH 4-9
Density: 1.15 g/mL
Solubility: Active component is readily soluble in application-relevant solutions

	at all levels of concentration, temperature and pH which may occur in normal usage
Boiling Point:	Not determined
Flash Point:	Not determined
Flammability (solid, gas):	Not determined
Autoignition temperature:	Not determined
Oxidizing Properties:	Not determined
Vapor Pressure:	No data available
Partition Coefficient: (n-octanol/water)	No data available
Other information:	No information available

SECTION 10: Stability and reactivity

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

Trehalase, alpha,alpha-(aep)	LD50: >2000 mg/kg bw (OECD TG 401,420)	-	Not irritating (OECD TG 404)	Not irritation (OECD TG 405)
Chemical Name	Specific target organ toxicity	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)
Trehalase,alpha,alpha-(aep)		No indication of mutagenic effects (OECD TG 471,476)		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)
Trehalase, alpha, alpha-(aep)	No data available	-	No data available

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
Trehalase, alpha, alpha-(aep)	Readily biodegradable (OECD 301E/F)	LogPow: <0

Mobility in soil Not relevant

Other adverse effects No information available

SECTION 13: Disposal considerations

Disposal of wastes Dispose of in accordance with local regulations.

Contaminated Packaging 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

Transport hazard class(es) not applicable

Packing group not applicable

Environmental hazards not applicable

SECTION 15: Regulatory information

USA, Federal Regulations

TSCA Inventory The active ingredient and all components of the enzyme preparation are Listed on the TSCA inventory

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

California Proposition 65 This product does not contain any Proposition 65 chemicals

Canada

WHMIS Hazard Class Controlled product hazard class D2 A (respiratory sensitizer)

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

SECTION 16: Other information

Indication of changes: 5/06/2020

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.