

**MATERIAL SAFETY DATA SHEET OF HEMICELL® FEED ENZYME****1. IDENTIFICATION OF THE SUBSTANCE AND COMPANY MANUFACTURING**

- 1.1 Commercial product name: Hemicell® Feed Enzyme
- Description: Feed Enzyme; zootechnical feed additive
- 1.2 Use of the substance: For use in animal feeds
- 1.3 Company undertaking identification:
- Manufacturer: ChemGen Corp.  
Address: 211 Perry Parkway  
City, State, Zip: Gaithersburg, Maryland, 20877, USA  
Telephone number for information: +1-301-330-4101  
Facsimile: +1-301-948-5866  
Email: [Info@chemgen.com](mailto:Info@chemgen.com)  
Website: [www.chemgen.com](http://www.chemgen.com)
- 1.4 Emergency telephone number: +1-800-296-2646
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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

- 2.1 General description of active component:  $\beta$ -D-Mannanase
- 2.2 Enzyme Nomenclature Number: EC.3.2.1.78
- 2.3 Chemical Abstracts Service (CAS)  
Number: 37288-54-3
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**3. HAZARDS IDENTIFICATION**

May cause sensitization by inhalation. May cause irritation to skin or eye.

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**4. FIRST AID MEASURES**

- Skin contact: Rinse with clean water  
Eye contact: Rinse with sterile, isotonic saline  
Inhalation: Remove to well-ventilated area  
Ingestion: Not known to be hazardous in small amounts

IF ANY SYMPTOMS PERSIST SEEK MEDICAL ATTENTION

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## 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Water, foam
Non-suitable media:	None known
Special exposure hazards:	None known
Special protective equipment for fire-fighters:	No special requirements

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## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Wear suitable protective clothing (e.g. overalls), safety glasses, face mask, impermeable gloves (rubber or polyethylene).
Environmental precautions:	No known adverse ecological effects
Methods for cleaning up:	Vacuum powdered spill or moisten with water before removal. Contain and absorb liquid spill with inert material.

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## 7. HANDLING AND STORAGE

7.1 Handling: Wear a face mask and overalls. Minimize or prevent the formation of aerosols or dust during clean-up by avoiding high water pressure, steam or compressed air on spills. Dispose of spills in accordance with local regulations.

7.2 Storage: Store in closed containers in a dry place at a temperature of 25° C or cooler.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure limit values: Not applicable

### 8.2 Exposure controls

#### 8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection: None required under normal conditions of use in non-sensitized individuals. If risk of inhalation may occur, suitable respiratory protective equipment may be used.

8.2.1.2 Hand protection: Impermeable gloves (rubber or polyethylene).

8.2.1.3 Eye protection: Wear safety glasses when there is the potential for eye contact. Eye bath available.

8.2.1.4 Skin protection: Clothes sufficient to avoid contact, e.g. overalls. Safety shower available.

#### 8.2.2. Environmental exposure controls

Ventilation: Recommend well-ventilated workplace

Local Exhaust Ventilation: As needed to prevent dust or aerosols.

Work/hygienic practices: Maintain good housekeeping. Avoid generation of dust or aerosol.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance:	Liquid: Amber to brown; Dry: Light tan to light brown color
9.2 Odor:	Liquid: Typical fermentation product odor; Dry: Plant meal odor
9.3 Other important physical and chemical properties	
pH:	6.0 -7.5
Boiling point:	No data available.
Flash point:	No data available
Flammability (solid, gas)	Not flammable.
Explosive properties	Non-explosive.
Oxidising properties	No data available.
Vapour Pressure:	No data available.
Density (liquid):	1.15 to 1.25 kg/L
Density (dry):	37 to 56 lb/ft <sup>3</sup> (0.6 to 0.9 g/cc <sup>3</sup> )
Solubility in water (liquid):	Readily miscible in water
Solubility in water (dry):	Very low aqueous solubility
Fat solubility:	Not soluble
Partition Coefficient: n-octanol/water:	No data available
Viscosity:	10.5 centipoise
Vapour Density:	No data available
Evaporation Rate:	No data available
9.4 Other information:	No other relevant information available

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## 10. STABILITY AND REACTIVITY

No hazardous reactions known if released to the environment. Enzyme activity may be affected by exposure to high temperatures and high moisture. Store in a cool dry place.

10.1 Conditions to avoid:	None
10.2 Materials to avoid:	None
10.3 Hazardous decomposition products:	None.

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## 11. TOXICOLOGICAL INFORMATION

11.1 Toxicity:	Non-toxic in laboratory animals (according to OECD 408) and non-toxic to food animals, even at highest dose tested.
11.2 Eye irritation:	Slightly irritant to eyes according to OECD 405 method.
11.2 Skin irritation:	Slightly irritant to skin according to OECD 404 method.
11.3 Skin sensitization:	Non-sensitizing according to OECD 429 method.
11.4 Mutagenicity:	Non-mutagenic according to OECD 471 and 473

	methods.
11.5 Carcinogenicity:	Not listed as a carcinogen or a potential carcinogen.
11.6 Precautionary Statements:	
Standard enzyme label warning:	May cause sensitization by inhalation.
Inhalation, Skin, Eye, Ingestion:	May cause irritation upon prolonged exposures.
Health hazards (Acute and Chronic):	Chronic exposure may lead to allergic sensitization based on exposure level, duration of exposure, and susceptibility.
Signs and symptoms of exposure:	Symptoms of enzyme allergies may include: sneezing, coughing, watery eyes, runny nose, tightness of chest or shortness of breath. Symptoms may develop at work or may be delayed.
Medical conditions:	Allergies

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## 12. REGULATORY

12.1 Regulatory Status: Hemicell<sup>®</sup> Feed Enzyme products in both dry and liquid forms are approved for use as animal feed additives in the U.S., Canada, Mexico, Brazil, the EU, Thailand, China, Indonesia, New Zealand and many other global regions.

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## 13. ECOLOGICAL INFORMATION

13.1 Ecotoxicity:	No known adverse ecological effects
13.2 Mobility:	No data available
13.3 Persistence and degradability:	The active ingredient, an enzyme, does not persist,
	but is naturally broken down into smaller compounds and excreted.
13.4 Bioaccumulative potential:	Does not bioaccumulate.
13.5 Other adverse effects:	No known other adverse effects

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## 14. DISPOSAL CONSIDERATIONS

14.1 Disposal: No special disposal method is required, except that it be in accordance with current local regulations.

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## 15. TRANSPORT INFORMATION

15.1 Transportation: No special transport precautions are required, except that product should be transported under cool, dry conditions and containers should remain closed. As a product that is intended for use in animal feed, trucks should be inspected before loading to be sure that trucks are clean and not contaminated.

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