

Material Safety Data Sheet

Company: Bio-Cat, Inc.
9117 Three Notch Rd.
Troy, Virginia 22974

Phone: (800) 545-9052
Fax: (804) 589-3301

Form: Single Item ,Liquid
Updated: March 1997

Section 1 : Identification

Product Name: Catalase 1500
Chemical Family: Enzyme
Molecular Weight: N/A
Hazard Classification: None
CAS Number: 9001-05-21XU

Chemical Name: Oxidase Reductase
Formula: N/A
Synonyms: None
Shipping Name: None
CAS Name: Catalase

Section 2 : Physical Data

Boiling Point, 760 mm Hg: 100 - 105° C
Vapor Density: (air=1):0.62
Appearance & Odor: Amber to dark brown liquid. Typical fermentation odor.
Pour point: N/A
Solubility in water,% by weight: completely miscible

Specific Gravity: 1.1 to 1.3
% Volatile by Volume: N/A
Vapor Pressure at 20 degrees c: As Water
Evaporation rate(butyl acetate=1): As Water

Section 3: Hazardous Components

- Material:** This product does not meet the definition of hazardous material given in 29 CFR part 1910.1200 (OSHA). Information on this form is furnished as a customer service.
- Inhalation:** May cause sensitization by inhalation in hypersensitive individuals. Avoid dust generation. **If** inhaled , remove from contaminated area to fresh air. Report situation. Seek medical if allergic response exhibited.
- Eye Contact:** Product is not known to cause eye irritation. However, it is recommended that direct contact with eyes be avoided . In case of contact with eyes , flush eyes with low pressure water for at least 15 minutes. If irritation develops , seek medical attention.
- Skin Contact:** Product is not irritating to skin. However, it is recommended that prolonged contact with skin be avoided. In case of contact with skin, wash skin with soap and water. Remove contaminated clothing and wash.

Swallowing: Ingestion of material is not known to result in significant adverse health effects. If swallowed, rinse mouth and throat thoroughly with tap water. Drink water.

Section 4: Fire Fighting Measures

Flash point/Ignition Temperature: HMIS Rating: Health=1
Flammability=1
Reactivity=0

Explosion Characteristics: N/A
Hazardous Decomposition Products: NONE
Suitable Fire Extinguishing Media: Water, Foam, Halones

Section 5: Accidental Release Measures

After Spillage: SPILLED PRODUCT SHOULD BE REMOVED IMMEDIATELY. Remove by mechanical means (i.e. vacuuming). Dilute remainder with plenty of water (avoid formation of aerosols). Ensure sufficient ventilation. Wash contaminated clothing.

First Aid: In case of contact with skin, wash with plenty of water. If symptoms occur, see a doctor. In case of contact with eyes, rinse with plenty of water. If symptoms occur, see an eye specialist. In case of inhalation, drink water. If symptoms occur, see a doctor.

Section 6 : Personal Protection/Handling And Storage

Technical Protective Measures: Avoid splashing and high pressure washing. Ensure good ventilation of the room when handling this product. Store container in a dry cool place.

RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY PROTECTION: None required under usual condition of use. However, if exposure potential exists, refer to NIOSH Criteria Guides to determine appropriate unit.

HAND PROTECTION: Impermeable gloves recommended

EYE PROTECTION: Protective glasses or eye shield

INDUSTRIAL HYGIENE: Maintain good conditions of industrial hygiene

PROTECTION AGAINST FIRE AND EXPLOSIONS: Under normal use, no special requirements. If extremely high levels generated in ambient air, material can support combustion.

Section 7 : Physical Properties

Solubility in water: N/A Alternative solvent: Not applicable pH Value(1%sol.): 3.8-8.0

Section 8 : Toxicological Information

Inhalation may cause respiratory allergy in susceptible individuals. Oral rat LD-50>2g/kg-classifies product as "non-toxic".

Carcinogenicity:NTP? No
No

IARC Monographs? No

OSHA Regulated?

Section 9: Information on Ecological Effects

Product is readily Biodegradable

Section 10: Disposal Considerations

Disposal: No special disposal method required, except that in accordance with current local authority regulations

Section 11: Transport Classification

ROAD/RAIL: Not classified

SEA: Not classified

AIR: Not classified

Section 12: Regulatory Information

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

Section 13: Further Information

The information contained in this Safety Data Sheet, as of the issue date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee. Since the conditions of use are beyond the control of the company, it is the responsibility of the user to determine the conditions of safe use of this product. The information does not represent analytical specifications.

Guide to the Safe Handling for Enzyme Preparations

For the safe handling of enzyme preparations, please carefully read this guide prior to handling.

▶ WHAT ARE ENZYMES?

Enzymes are specialized high-molecular weight proteins composed of amino acid building blocks and are in general, natural substances produced by all living organisms. Enzymes act as catalysts which conduct virtually all physiological processes that are essential for the growth and life of all living matter. These proteins (enzymes) are able to accelerate the processes of building or breaking down organic substances such as carbohydrates, fats and proteins.

Enzymes are used extensively in many industries including pharmaceuticals, food processing, animal feeds and diagnostics.

Enzyme preparations are produced from animal, plants and microorganisms, utilizing advanced technology.

▶ ENZYME PROPERTIES

1) Benefits

Enzymes have beneficial properties in their catalytic reactions. Each particular enzyme reacts only on a specific substance (Substrate specificity) under moderate conditions (temperature, pressure and pH).

Enzymes contribute enormously to many industries. Digestive enzymes, such as amylase, protease and lipase break down foods into smaller components that are more easily absorbed in the digestive tract. Food processing enzymes, such as glucoamylase, can break down starch into glucose.

2) Allergy

Just as most proteins, enzyme preparations may act as *allergens*. When enzymes are inhaled they may cause the formation of antibodies specific to them (sensitization). Once sensitization has occurred further exposure to the allergen may cause the following symptoms:

- a) nose, eyes, skin and respiratory irritation
- b) coughing
- c) asthma
- d) symptoms similar to a cold

3) Irritation

Enzyme preparations which contain high amounts of protease may irritate the contacted part of the body due to proteolytic action. To minimize the risk of irritation it is important to prevent direct contact with any part of the body.

▶ MINIMIZING ENZYME RISK

1) AVOID INHALATION AND DIRECT CONTACT

Inhalation and direct contact with enzyme preparations may cause:

- a) Allergic reactions
- b) Irritation

Enzyme preparations which contain protease need additional attention since perspiration may increase irritation. To minimize the risk of enzyme preparations it is important to prevent inhalation and direct contact with any part of the body

▶ **FIRST AID**

- a) In case of inhalation evacuate the area and breathe fresh air. If symptoms occur consult a physician.
- b) In case of skin contact flush and clean thoroughly with water.
- c) In case of ingestion drink plenty of water and consult a physician.

▶ **PROTECTION**

DO

- ▶ wear protective clothing
- ▶ wear respiratory protection
- ▶ wear safety glasses
- ▶ wear impermeable gloves
- ▶ prevent creation of dust or aerosols
- ▶ ventilate the area (exhaust ventilation)
- ▶ keep work area and equipment clean

DO NOT

- ▶ let dust or aerosols directly contact any part of the body
- ▶ create dust or aerosols
- ▶ handle in an unventilated area
- ▶ leave work area and equipment uncleaned

▶ **CLEANING**

DO

- ▶ use vacuum equipped with high efficiency filters
- ▶ use wet cleaning procedures with low water pressure
- ▶ use wet mop when cleaning floor

DO NOT

- ▶ use vacuum equipment without proper high efficiency filters
- ▶ use compressed air or high pressure water jets
- ▶ sweep or blow any spillage

Individuals who are highly sensitive to enzyme preparations should avoid handling such substances.

▶ **QUESTIONS OR CONCERNS
CONTACT:**

BIO-CAT, INC.
9117 THREE NOTCH ROAD
TROY VA 22974
(800) 545-9052
(804) 589-3301 FAX
biocatinc@aol.com

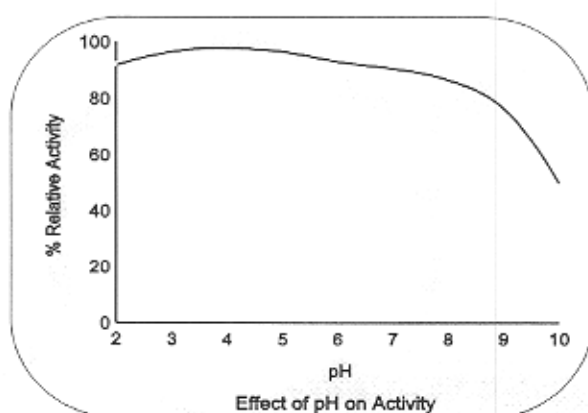
CATALASE

DESCRIPTION

CATALASE is an enzyme derived from the fungus *Aspergillus niger*. This product complies with current FAO/WHO and FCC requirements for food-grade enzymes.

CATALASE is used for the removal of hydrogen peroxide. Hydrogen peroxide is used both as a bleaching agent and as an antimicrobial treatment. This is especially useful when proteinaceous substrates, such as milk, egg, fish, and soy proteins are processed. Safe removal of the hydrogen peroxide is desired to prevent oxidation and to inhibit possible attachment of the substrate to stainless steel processing equipment. **CATALASE** quickly and safely removes residual hydrogen peroxide by direct conversion to oxygen and water. Taste, texture, and aroma of the final product are not affected by this process.

CHARACTERISTICS



- **CATALASE** is active in the temperature range 0-65 C.
- **CATALASE** is supplied as a brownish liquid or as a tan powder.
- The liquid is standardized to 1000 Baker Units/mL and the powder to 7200 Baker units /g..
- **CATALASE** reacts in the following manner: $2\text{H}_2\text{O}_2 \rightarrow \text{O}_2 + \text{H}_2\text{O}$.

STORAGE & PACKAGING

Please inquire about our available packaging options.

This product should be kept in a cool dry location. The drum should be kept closed when not in use. Exposure to high humidity and temperature is not recommended.

HANDLING

Please refer to the Material Safety Data Sheet and the Enzyme Technical Association publication - *Working Safely With Enzymes*.