

BIOZYME M

BIOZYME M is an innovative blend of high-activity enzymes designed to maximize fermentation efficiency



Cane molasses is a by-product of sugar refining, containing high concentrations of fermentable sugars. However, it also presents challenges for efficient fermentation, including high viscosity, non-fermentable sugars, and potential microbial contamination. Enzymes are used to overcome these challenges, increasing ethanol yield, reducing fermentation time, and improving process efficiency

KEY FEATURES:-

- Eco-friendly and non-harmful to the process.
- Activates: Converts non-fermentable sugars into fermentable ones.
- Boosts Yield: Directly increases alcohol output.
- Speeds Up Fermentation: Provides easier access to nutrients for yeast.
- Liberates FAN (free amino nitrogen) for yeast nutrition.

SPECIFICATIONS:-

- pH :- 5.0 to 7.0
- Temperature:- 30–35 °C
- Appearance “= Light yellow powder

DOSAGE:-

5 ppm/ton of Wort-Mash. Dosing should be done at the YAT, Pre-Fermentor and Fermentor stages for best results.

PACKAGING:-

Available in 1 Kg. Foil Pack further packed in 25 Kg HPDE Drum. Customised Packing available on request.

SHELF LIFE:-

18 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. Bioenzyme M should be stored in a cool and dry location.

SAFETY & HANDLING:-

Biozyme M is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.



BIOZYME M ULTRA

BIOZYME M Ultra is an innovative blend of high-activity enzymes designed to maximize fermentation efficiency and control contamination



The high sugar content and nutrients in molasses make it an excellent feedstock not just for the desired yeast or bacteria, but also for unwanted microorganisms. The main types of microbial contaminants include Wild Yeast, LAB (Lactic Acid Bacteria), AAB (Acetic Acid Bacteria) and other bacteria. The key role of enzymes in fermenting B Heavy Molasses or Syrup is to unlock and convert the complex, non-fermentable sugars into simple, fermentable sugars that yeast can consume.

KEY FEATURES:-

- Eco-friendly and non-harmful to the process.
- Preventing Stuck Fermentation
- Restoring Fermentability
- Does not affect Yeast cell.

SPECIFICATIONS:-

- pH :- 5.0 to 7.0
- Temperature:- 30–35 °C
- Appearance “= Light yellow powder

DOSAGE:-

5 to 10 ppm/ton of Wort-Mash. Dosage can be adjusted as per contamination occurred. Add in Pre Fermentor and Fermentor stages, before addition of Active Dry Yeast and Lab made culture.

PACKING:-

Available in 1 Kg. Foil Pack further packed in 25 Kg HPDE Drum. Customised Packing available on request.

SHELF LIFE :-

12 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. Biozyme M Ultra should be stored in a cool and dry location.

SAFETY & ENZYME HANDLING:-

Biozyme M Ultra is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

BIOZYME EFFUTREAT

**Innovative Blend of Enzymes for
Reduce, Recycle and Reuse (3 R's) for
Molasses/Grain Distilleries**



Molasses/Grain-based distilleries produce a large volume of high-strength wastewater called spent wash or vinasse. It is one of the most challenging industrial effluents due to its characteristics, like High Organic Load, Dark Brown Colour, High Viscosity and presence of Recalcitrant Compounds. Traditional treatment is energy-intensive and costly. Enzymes offer a targeted, biological solution to break down these complex problems at the molecular level. Enzymatic treatment transforms spent wash from a costly waste liability into a valuable resource, driving profitability, operational excellence, and environmental sustainability.

KEY BENEFITS:-

- Water Reuse-Treated water can be recycled for cooling, cleaning, or even fermentation makeup, drastically cutting freshwater use.
- Circular Economy Model- Transforms waste into valuable resources (water, energy, fertilizer), minimizing environmental footprint.
- Reduced Operational Costs- Cut energy consumption for pumping and evaporation due to significant viscosity reduction.
- Reduced Effluent Load: Significantly lowers COD/BOD, simplifying final treatment and reducing disposal costs.
- Small Investment, Significant Returns: Enzymes are highly efficient biocatalysts. The savings from reduced energy, disposal costs, and increased product (alcohol, biogas) yield deliver a rapid payback.
- Helps in Zero Liquid Discharge.

SPECIFICATIONS:-

pH :- 4.0 to 7.0

Temperature:- 30–55 °C

DOSAGE:-

Add 15 to 30 ppm/ton of Spent Wash in water tank Or. Dosage 15 to 30 ppm/ton of Spent Wash in the Fermentor during Spent wash filling.

PACKAGING:-

Available in 1 Kg. Foil Pack further packed in 25 Kg HPDE Drum.

Customised Packing available on request.

SHELF LIFE:-

12 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. Biozyme M Ultra should be stored in a cool and dry location.

SAFETY & HANDLING:-

Biozyme Effutreat is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

BIOZYME GMAX

Innovative Blend of selected Micro-organism for enhance anerobic digestion process in Biogas



Microorganisms play a crucial role in the anaerobic digestion process that produces biogas. The process involves a consortium of microbes working in a sequence of biochemical steps, each group performing a specific function that ultimately leads to methane (CH₄) generation. The key functional groups include: hydrolytic, acidogenic, acetogenic, methanogenic etc. Significantly reduces the natural startup time from months to weeks, establishes a robust microbial population, and improves system stability against organic overloads and inhibitory compounds.

KEY BENEFITS:-

- Significant Reduction in Startup Time,
- Improved Biogas Yield and Quality,
- Waste Treatment and Pathogen Reduction,
- Enhance Process Stability & Resilience,
- Effectively minimise the odour of waste.

SPECIFICATIONS :-

- pH :- 5.5 to 7.5
- Temperature:- 5–55 °C
- Appearance “= tortilla brown (Liquid)/ Swiss Coffe (powder)

Compatible Feedstock:

- Agriculture residues
- Animal waste
- Food and Agro processing waste
- Industrial organic feedstock

DOSAGE:-

Add 1 L of Bionzyme Gmax with 1 Ltr. Jaggery and mix it with 100 Ltr Feed water. (2 Ltr into 200 Ltrs.)
Start up:- 3-4 Ltrs/1000m³ of Feed Water, after 1-2 Ltrs/1000m³ daily. Dosages are depending upon feedstock.

PACKAGING:-

Available in Powder and Liquid Form. Available in 1 Litre Bottle/1 Kg. Aluminium Foil Pack & 25 Kg HPDE Drum. Customised Packing available on request.

SHELF LIFE:-

12 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. Biozyme Gmax should be stored in a cool and dry location.

SAFETY & HANDLING:-

Bioenzyme Gmax is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on request.

BIOZYME NUTRIBOOST

Biozyme Nutriboost is a innovative blend of Yeast Nutrients Complex to help Yeast in Fermentation



Enzymes are not a direct replacement for nitrogen (N). Instead, they are used to unlock alternative and often superior nitrogen sources already present in the fermentation mash, reducing the reliance on synthetic urea and DAP. The primary strategy is to break down complex proteins into simpler nitrogen compounds that yeast can consume. The modern approach is not necessarily to replace DAP entirely, but to use a combination of enzymes and lower levels of DAP. This strategy creates a more natural nutrient profile for the yeast.

KEY BENEFITS:-

- More robust and reliable fermentations.
- A safer final product (reduced ethyl carbamate risk).
- Potential cost savings on synthetic nutrients.

SPECIFICATIONS:-

- pH :- 5.0 to 7.60
- Temperature:- 30–35 °C
- Appearance “= Light brown/white coloured powder

DOSAGE:-

20 ppm/ton of Wort-Mash. Dosing should be done at the Pre-Fermentor and Fermentor stages for best results.

PACKAGING:-

Available in 25 Kg HPDE Drum. Customised Packing available on request.

SHELF LIFE:-

12 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. Biozyme Nutriboost should be stored in a cool and dry location.

SAFETY & HANDLING:-

Bioenzyme Nutriboost is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.



BIOZYME G

Multi-Enzyme Blend for Yield Enhancement.

Biozyme G is a specially formulated blend of selected enzymes and performance-enhancing ingredients developed for grain-based distillery applications. The product is designed to improve starch conversion efficiency, increase fermentable sugar availability, and enhance overall alcohol yield during fermentation. The synergistic enzyme system supports efficient saccharification and helps achieve better process consistency and reduced residual starch losses.

Key Benefits:

- Improves alcohol yield and fermentation efficiency
- Enhances starch hydrolysis and sugar availability
- Supports better grain utilization
- Reduces unconverted starch residues
- Improves process consistency
- Compatible with standard saccharification enzyme programs

Operational Parameters:

Parameter	Recommendation
Appearance:	Off White Powder.
Temperature :	55 to 60 C
pH Range :	Optimum- 4 to 4.5
Method of Addition :	Direct addition into mash/slurry

Packing:- HDPE /BOX 25 Kg ,further packed in 1 kg Aluminium Foil Pack.Custom Packaging available on request.

Recommended Dosage:

- 15–30 grams per ton of grain.

Actual dosage may vary depending on grain quality, process conditions, and fermentation efficiency requirements.

Stability & Storage:

- Shelf life: 12 months from date of manufacture
- Store in a cool and dry place
- Keep container tightly closed after use
- Protect from moisture, heat, and direct sunlight
- Recommended storage temperature: Below 25°C

Safety:

Bioenzyme G is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

Disclaimer:

The information contained herein is believed to be reliable and is offered in good faith. Product performance depends on process conditions and raw material characteristics. Users should determine suitability for their specific applications before commercial use.

BIOZYME LMAX

Alpha Amylase for Starch liquefaction



Biozyme LMAX is a high-performance, thermostable α -amylase (EC 3.2.1.1) developed by Zymetics Biotech for the industrial liquefaction of starch. It is specifically engineered to exhibit exceptional activity under low pH (acidic) conditions and high temperatures, reducing the need for pH adjustment and calcium supplementation. This enzyme randomly cleaves internal α -1,4 glycosidic bonds in starch, producing soluble dextrans and oligosaccharides, thereby reducing viscosity and preparing the slurry for subsequent saccharification.

Key Benefits:

- Improves alcohol yield and fermentation efficiency
- Enhances starch hydrolysis and sugar availability
- Supports better grain utilization
- Reduces unconverted starch residues
- Improves process consistency
- Compatible with standard saccharification enzyme programs

Operational Parameters:-

Parameter	Optimal Range	Operational Range
Temperature:	85–95°C (185–203°F)	70–105°C (158–221°F)
pH :	4.5–5.5	4.0–6.5
Appearance. :	Liquid	

Note: For jet cooking liquefaction, the enzyme remains stable up to 105°C for short exposures (5–7 minutes).

Dosage:

Standard Liquefaction: 0.4 – 0.8 kg per metric ton of starch. The dosage of the enzyme depends on the quality of the raw material, the temperature, and the reaction time.

Packing : 35 kg HDPE drums (food-grade), Custom packaging available upon request.

Shelf Life :-

12 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. Biozyme LMAX should be stored in a cool and dry location.

Safety:

Biozyme LMAX is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

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BIOZYME SACMAX

Glucoamylase for Saccharification



Biozyme Sacmax is a high-performance glucoamylase enzyme preparation specially developed for efficient saccharification in grain-based distillery processes. The enzyme hydrolyzes liquefied starch and dextrans into fermentable glucose, resulting in improved alcohol yield and enhanced fermentation efficiency. The product is designed to provide high starch conversion efficiency under standard distillery operating conditions and supports complete utilization of available carbohydrates.

Key Benefits :

- High conversion efficiency of dextrans to glucose
- Improves fermentable sugar availability
- Enhances alcohol yield and fermentation performance
- Reduces residual starch losses
- Supports complete saccharification
- Compatible with standard liquefaction enzyme systems

Operational Parameters :

Apperance :	Liquid
Colour :	Brown
Recommended pH :	4.0 – 4.5
Recommended Temperature:	55°C – 60°C

Dosages:

Standard Liquefaction: 0.4 – 0.8 kg per metric ton of starch. The dosage of the enzyme depends on the quality of the raw material, the temperature, and the reaction time.

Packing : 35 kg HDPE drums (food-grade) , Custom packaging available upon request.

Shelf Life :-

12 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. Biozyme SacMax should be stored in a cool and dry location.

Safety:

Biozyme SacMAX is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

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Zyma Pro

Alkaline Protease for detergent Application



ZymaPro is a high-performance alkaline protease enzyme specially developed for detergent formulations. It effectively hydrolyzes protein-based stains such as blood, egg, milk, grass, sweat, and food residues, improving cleaning efficiency in both household and industrial laundry applications. The enzyme demonstrates excellent activity under alkaline pH and moderate-to-high washing temperatures, making it suitable for powder, liquid, and compact detergent systems.

- Excellent removal of proteinaceous stains
- Improved detergency at lower wash temperatures
- Compatible with detergent builders and surfactants
- Effective in both hard and soft water
- Suitable for high-efficiency detergent formulations
- Enhances fabric brightness and cleanliness
- Reduces need for harsh chemicals

Characteristics:

Physical Form:	Free-flowing, low-dust granules (or light-brown liquid for liquid detergents)
pH Range :	8.0 – 12.0 (Optimum: pH 10.0 – 11.0)
Temperature Range :	20°C – 65°C (Optimum: 50°C – 55°C)
Solubility:	Fully water-soluble
Compatibility:	Compatible with non-ionic and anionic surfactants, builders (zeolite, citrate, carbonate.) Avoid strong oxidizing agents (e.g., perborate in high doses).
Dosage :-	0.2 to 1% (Depending upon end uses)

Stability & Storage:

Store in sealed container in a cool, dry place (< 25°C). Avoid: Direct sunlight, moisture absorption, temperatures > 50°C for prolonged periods.

Shelf life : 12 months maintaining ≥90% activity.

Packaging:-

Available in 50 Kg HPDE Drum. Customised Packing available on request.

Safety & Handling:

ZymaPro is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

Disclaimer:

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Zyma 4E

Power of 4 Enzymes



ZYMA-4E is a high-performance multi-enzyme blend specially developed for detergent applications. It enhances stain removal efficiency by breaking down protein, starch, fat, and cellulose-based stains, providing superior cleaning performance even at lower washing temperatures.

Enzyme Composition:

- Protease – Protein stain removal
- Amylase – Starch stain degradation
- Lipase – Fat and oil stain removal
- Cellulase – Fabric care and brightness enhancement

Key Benefits:

- Effective removal of tough stains
- Improved detergent cleaning efficiency
- Suitable for low-temperature washing
- Enhances fabric brightness and softness
- Reduces re-deposition of dirt
- Compatible with powder and liquid detergents

Dosage: 0.2% – 1.0% depending on formulation and washing conditions.

Operating Conditions:

- pH Range: 7.0 – 11.0
- Temperature Range: 25°C – 60°C

Physical Properties:

- Appearance: Light brown liquid / off-white powder (as applicable)
- Odor: Characteristic mild fermentation odor
- Solubility: Completely soluble/dispersible in water

Storage & Stability:

Store in a cool, dry place away from direct sunlight. Keep container tightly closed. Recommended storage temperature: 5°C – 25°C.

Shelf Life : 12 months under recommended storage conditions.

Safety Information: Avoid inhalation and direct contact with eyes or skin. Use appropriate protective equipment during handling.

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Zyma L

Power of 4 Enzymes



ZYMA-4E is a high-performance multi-enzyme blend specially developed for detergent applications. It enhances stain removal efficiency by breaking down protein, starch, fat, and cellulose-based stains, providing superior cleaning performance even at lower washing temperatures.

Enzyme Composition:

- Protease – Protein stain removal
- Amylase – Starch stain degradation
- Lipase – Fat and oil stain removal
- Cellulase – Fabric care and brightness enhancement

Key Benefits:

- Effective removal of tough stains
- Improved detergent cleaning efficiency
- Suitable for low-temperature washing
- Enhances fabric brightness and softness
- Reduces re-deposition of dirt
- Compatible with powder and liquid detergents

Dosage: 0.2% – 1.0% depending on formulation and washing conditions.

Operating Conditions:

- pH Range: 7.0 – 11.0
- Temperature Range: 25°C – 60°C

Physical Properties:

- Appearance: Light brown liquid / off-white powder (as applicable)
- Odor: Characteristic mild fermentation odor
- Solubility: Completely soluble/dispersible in water

Storage & Stability:

Store in a cool, dry place away from direct sunlight. Keep container tightly closed. Recommended storage temperature: 5°C – 25°C.

Shelf Life : 12 months under recommended storage conditions.

Safety Information: Avoid inhalation and direct contact with eyes or skin. Use appropriate protective equipment during handling.

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Zyma Bleach

Bio -oxy bleach system for
detergent



Zyma Bleach - is a next-generation biological bleaching system designed for powder and liquid detergent formulations. Unlike traditional chlorine or high-temperature peroxygen bleaches, this product utilizes a specific oxidase enzymatic system coupled with molecular oxygen (air) to catalytically oxidize broad-spectrum organic stains and chromophores. It is highly effective on polyphenolic compounds and synthetic dyes that are typically resistant to conventional protease or amylase enzymes.

This system functions via a Laccase-Mediator System (LMS) , where the enzyme catalyzes the oxidation of specific mediators, which in turn perform the high-redox bleaching action on targeted substrates

Key Features & Benefits:

Enzymatic Catalysis-Activated by ambient oxygen (O_2); No need for petrochemical-based peroxides (e.g., TAED, NOBS).

Substrate Specificity-Targets aromatic alcohols, PAHs, anthracene derivatives, non-phenolic aromatics, and amines,

Fabric Safety-Non-oxidative to fabric dyes when used at recommended dosage; prevents back-staining and dye transfer,

Environmental Profile-Biodegradable formulation; reduces chemical oxygen demand (COD) in wastewater compared to chlorine bleaches.

Technical Mechanism of Action:

Zyma Bleach operates via a "Redox Mediation" pathway:

1. Oxidation: The Bio-Oxy enzyme (Laccase) oxidizes natural phenolic mediators present in the wash solution or included in the formulation using atmospheric oxygen.
2. Radical Formation: The mediator forms highly reactive radical species (e.g., phenoxy radicals or cation radicals).
3. Bleaching: These radicals attack the electron-rich centers of the stain:
 - Aromatic alcohols → Oxidized to aldehydes/acids (solubilized).
 - Polycyclic Aromatic Hydrocarbons (PAH) & Anthracene → Cleaved to quinones and aliphatic acids.
 - Non-phenolic aromatics & Amines → Decolorized and degraded.

Recommended Dosage:

Powder Detergents: 0.5% – 2.0% of total formulation weight.

- Liquid Detergents: 1.0% – 3.0% (Encapsulated or stabilized liquid enzyme grade).
- Stain Remover Pre-treaters: 5.0% – 10.0%

Storage: Store in cool, dry conditions (below 25°C). Stable for 12 months in sealed containers.

Incompatibilities: Avoid direct contact with strong oxidizing agents (liquid chlorine, concentrated hydrogen peroxide) prior to wash dissolution.

Water Hardness: Active in water hardness up to 30°dH.

Zyma Bleach

Bio -oxy bleach system for
detergent



Packaging & Handling

- Packaging: Available in a packing of 10 * 1 Kg,packed in canvas bag.Customised packing available on request.
- Safety: As with all enzyme products, avoid inhalation of dust. In case of contact with eyes or skin, rinse immediately with water.

Zyma Bleach -offers a sustainable, low-temperature solution for whitening and stain removal by enzymatically catalysing the oxidation of tough aromatic stains that standard detergents leave behind. It is the preferred choice for "Bio-Based" and "Eco-Friendly" detergent lines.

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BIOZYME DS

INNOVATIVE BLEND OF ENZYMES FOR DESIZING



The primary role of alpha-amylase in textile desizing is to efficiently and specifically hydrolyze (break down) starch-based size into water-soluble fragments, allowing it to be washed off the fabric without damaging the underlying fibers.

This role is fulfilled through a specific biochemical action, which provides key advantages over other methods.

Key Advantages:-

- **Eco-friendly and Non-Toxic.** Bioenzyme DS is biodegradable. They significantly reduce the chemical load and BOD/COD in wastewater compared to oxidative or acid desizing.
- **Fiber Safety:** High specificity prevents damage to the textile fibers, preserving quality and tensile strength.
- **Effectiveness:** Provides uniform and complete size removal, which is crucial for subsequent processes like dyeing and finishing.
- **Water & Energy Efficiency:** Often operates at lower temperatures, and the hydrolyzed size is easier to rinse out.
- **Safety:** Safer for workers to handle than harsh acids or oxidizing agents.

Packaging:-

Available in 50 Kg HPDE Drum. Customised Packing available on request.

Shelf Life:-

12 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. It should be stored in a cool and dry location.

Safety & Handling:-

Bioenzyme DS is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

Disclaimer:

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BIOZYME PREP ONE

**INNOVATIVE BLEND OF ENZYMES FOR
DESIZING, SCOURING & BLEACHING**



Biozyme Prep-One is a scientifically advanced, multi-enzyme synergistic blend designed to perform desizing, scouring, and bleaching of cotton and cotton-blend fabrics in a single bath. This revolutionary product replaces traditional, resource-intensive multi-step processes, offering unparalleled savings in water, energy, time, and cost while significantly reducing the environmental footprint.

Key Advantages:-

- Eco-Friendly and Non-Hazardous
- No use of Caustic Soda
- No Desizing Chemicals required
- Reduced Water Requirement
- No use of Harsh Bleaching Chemicals
- Reduced Water Requirement
- No Strength Loss of Fabrics
- Alternative to aggressive alkaline scouring at high temperatures

Process Parameters:-

- Usage :- 1 to 2 % of Fabric Weight
- pH:- 5-6
- Temperature:- 60°C - 65°C
-

Packaging:-

Available in 50 Kg HPDE Drum. Customised Packing available on request.

Shelf Life:-

12 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. It should be stored in a cool and dry location.

Safety & Handling:-

Biozyme DS is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

Disclaimer: This data is provided for guidance purposes. The performance of Biozyme Prep-One may vary depending on equipment, water quality, and fabric characteristics. We strongly recommend that you conduct laboratory trials to fine-tune the process for your specific application before using it in bulk.

BIOZYME CELLAC

INNOVATIVE BLEND OF ENZYMES FOR BIO-STONE WASH



Product Overview: This family of enzymatic preparations is designed to create the "stonewashed" or "vintage" look on indigo-dyed denim by selectively removing color. They replace or drastically reduce the use of pumice stones, leading to higher efficiency, less machine damage, and novel aesthetic effects.

Key Advantages:-

- Eco-friendly and biodegradable
- Eliminates Pumice Stones: Reduces machine wear and tear, eliminates pumice disposal problems, and increases washer capacity (more garments per load).
- Consistent & Reproducible Results: Enzymatic action is more uniform and controllable than random stone abrasion.
- Novel Effects: Allows for creation of finishes that are difficult or impossible to achieve with stones (e.g., very uniform fades, specific patterns).
- Softer Hand Feel: The enzymatic action naturally softens the fabric.
- Eco-Friendlier: Reduces water and energy consumption compared to multiple rinse cycles needed to remove stone debris

Acid Wash:-

pH: Adjust to 4.5-5.5 (Acid) or 6.0-7.0 (Neutral)

Temp: 50°C - 60°C

Time: 30 - 90 min

Cellac : 1.0% - 4.0% owf (on weight of fabric)

Anti-backstaining agent: 0.5 - 1.0 g/L

Packaging:- Available in 50 Kg HPDE Drum. Customised Packing available on request.

Shelf Life:-

6 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. It should be stored in a cool and dry location.

Safety & Handling:-

Biozyme Cellac is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

Disclaimer: The information provided is a general guideline. Optimal dosage and process conditions must be determined for each specific application through lab trials, as they depend on garment construction, desired effect, and equipment used.



BIOZYME FEDEN

INNOVATIVE BLEND OF ENZYMES FOR DENIM FADING

Enzymes are biocatalysts that revolutionized the denim industry. They provide a sustainable, efficient, and highly controllable method for fading denim by either selectively weakening the cotton fiber (cellulase) or by directly degrading the indigo dye (laccase), replacing older, harsher, and less environmentally friendly techniques.

Key Advantages:-

- Eco-friendly and biodegradable
- Consistency & Aesthetics: Allows for a much wider range and more consistent fade effects, from overall light fading to sharp contrasts.
- Indirectly facilitates the release of surface-bound indigo dye through mechanical action.
- Less fabric damage: Milder than traditional mechanical abrasion.
- Energy & water saving: Shorter process time and reduced need for stone washing.
- Improved fabric feel: Softer hand feel and better drape.
- Sustainability: Lower effluent load, reduced solid waste.

Compatibility with:-

Dosage & Operational Parameters:-

- Dosage: 0.5 – 2.0% owg (on weight of garment) or as recommended by supplier.
- pH: 5
- Temperature: 40 – 60 °C (depending on enzyme type).
- Time: 20 – 60 minutes (can vary for desired fading effect).
- Liquor ratio: 1:3 to 1:5

- Non-ionic & mild anionic detergents → Compatible – safe with enzymes.
- Strong alkaline detergents (pH > 9) → Not compatible – deactivates cellulase.
- Acetate, citrate, phosphate buffers → Compatible – maintain enzyme pH.
- Caustic soda (NaOH) → Not compatible – destroys enzyme activity.
- Sodium hypochlorite (NaOCl) → Not compatible – rapidly deactivates enzyme.
- Hydrogen peroxide (H₂O₂) → Limited – apply only after enzyme step.
- Potassium permanganate (KMnO₄) → Compatible sequentially – for localized fading after enzyme.
- Ozone (O₃) → Compatible sequentially – eco-washing after enzyme.
- Sodium bisulfite / metabisulfite → Compatible – neutralizes bleach or enzyme safely.
- Silicone softeners → Compatible – apply after enzyme step.
- Cationic softeners → Limited – may interfere; apply after enzymes.
- Amylases (desizing) → Compatible sequentially – used before cellulase.
- Catalase (peroxide removal) → Compatible sequentially – used before cellulase if H₂O₂ present.
- Indigo dye (residual) → Compatible – enzyme releases indigo for faded look.
- Sulfur / Reactive dyes → Generally compatible – minor shade variation possible.

Packaging:-

Available in 50 Kg HPDE Drum. Customised Packing available on request.

Shelf Life:-

6 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. It should be stored in a cool and dry location.

Safety & Handling:-

Biozyme Cellac is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

Disclaimer : The information provided is a general guideline. Optimal dosage and process conditions must be determined for each specific application through lab trials, as they depend on garment construction, desired effect, and equipment used.

BIOZYME BLISCOR

INNOVATIVE BLEND OF ENZYMES FOR BLEACHING & SCOURING



BIOZYME BLISCOR are increasingly used in pre-treatment of cotton and cellulosic fabrics, either partially replacing or assisting conventional alkali scouring and chemical bleaching. Enzyme blends in bleaching and scouring act as eco-friendly alternatives to strong alkali and oxidizers. They help remove impurities, whiten fabric, improve absorbency, and preserve fabric strength while saving water and energy.

Key Advantages:-

- Eco-friendly and biodegradable (low effluent COD/BOD, less water & energy use).
- .Replace harsh caustic soda scouring.
- Remove natural impurities (waxes, pectin, oils, proteins) from cotton.
- Improve the hydrophilicity and wetting properties of fabric.
- Reduce weight loss and fiber damage compared to alkaline scouring.
- Enable controlled bleaching with lower chemical dosage.
- Provide an eco-friendly alternative to Hypochlorite/Hydrogen Peroxide bleaching.
- Reduce water consumption (less rinsing required).
- Improve fabric brightness and reduce back-staining.
-

Dosage & Operational Parameters:-

- Dosage: 1.0 – 2.0% owg (on weight of garment) or as recommended by supplier.
- pH: 6-7
- Temperature: 50 – 60 °C

Process Parameters:-

Packaging:- Available in 50 Kg HPDE Drum. Customised Packing available on request.

Shelf Life:-

6 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. It should be stored in a cool and dry location.

Safety & Handling:-

Biozyme Bliscor is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

Disclaimer: The information provided is a general guideline. Optimal dosage and process conditions must be determined for each specific application through lab trials, as they depend on garment construction, desired effect, and equipment used.



BIOZYME PM

Natural meat tenderiser solution

Papain is a natural proteolytic enzyme extracted from papaya that breaks down tough muscle proteins, making meat softer, juicier, and easier to cook.

Key Advantages:-

- Fast and effective tenderization
- Works at low dosage
- Improves cooking yield
- Reduces marination time
- Natural and plant-based solution

Product Specifications (Typical):-

- Activity: High protease activity
- Form: Powder / Liquid
- Solubility: Water soluble
- pH Range: 5.0 – 8.0
- Temperature: Active at moderate temperatures

Packaging:-

Available in 1Kg,5Kg,10Kg ,25Kg & 50Kg. Customised Packing available on request.

Shelf Life:-

6 months from the date of manufacturing when stored in unopened containers at 25°C (77°F). Protect from direct sunlight and moisture. It should be stored in a cool and dry location.

Safety & Handling:-

Biozyme PM is biodegradable and water-soluble. Always wear appropriate PPE, including gloves and a dust mask, to prevent inhalation or skin contact. In the event of accidental spillage or contact with skin or eyes, rinse thoroughly with plenty of water. MSDS sheet available on Request.

Disclaimer: For professional use only. Results may vary based on meat type, time, temperature, and application method. User assumes all responsibility for product testing, regulatory compliance, and final meat quality. Manufacturer makes no express or implied warranties, including merchantability or fitness for a particular purpose.

BIOZYME PB

Papain for Meat Tenderization



Papain is a natural proteolytic enzyme extracted from papaya that breaks down tough muscle proteins, making meat softer, juicier, and easier to cook.

Key Advantages:-

- Fast and effective meat tenderization
- Improves texture and eating quality
- Enhances tenderness of low-value/tough cuts
- Reduces processing and marination time
- Improves product consistency
- Helps improve consumer acceptability
- Supports uniform cooking performance.

Product Specifications (Typical):-

Appearance: Off-white to light cream powder
Odor: Characteristic mild odor
Solubility: Soluble/dispersible in water
Enzyme Type: Protease
Source: Papaya latex
pH Activity Range: 5.0 – 8.0 (optimum may vary)
Temperature Stability: Active under moderate processing temperatures

Dosage:-

Suggested dosage depends on meat type, toughness, processing conditions, and desired tenderness.

Application :	Recommended Dosage
Dry seasoning / surface application:	0.05% – 0.20% of meat weight
Marinade systems :	0.02% – 0.10% of meat weight
Tough meat cuts:	Up to 0.25% under controlled trials

Shelf Life:- 12 months from manufacturing date when stored under recommended conditions in original sealed packaging.

Packaging:- Available in 1Kg, 5Kg & 25 Kg. HPDE Drum. Customised Packing available on request.

Safety & Handling:- Avoid inhalation of enzyme dust. Use gloves, mask, and eye protection during handling. Wash hands after use. For industrial use only

Disclaimer: For professional use only. Results may vary based on meat type, time, temperature, and application method. User assumes all responsibility for product testing, regulatory compliance, and final meat quality. Manufacturer makes no express or implied warranties, including merchantability or fitness for a particular purpose.