



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

TEXTYME DGS

DESCRIPTION

A special proteolytic enzyme for degumming of silk

SPECIFICATIONS

Appearance : Off White Powder

pH (10%) : 9.0 - 10.0

Solubility : Soluble in water

Shelf Life : 6 months, if stored in closed conditions, in a cool
(25° C), dry place, away from direct sunlight

SALIENT FEATURES

- An enzyme formulation for making silk smoother, softer and lustrous
- Silky affinity to reactive dyes is also significantly improved.
- Removes sericin from silk worm pupa, energy efficient.
- Shorter and milder operating conditions
- Breaks down silk peptides and proteins
- Less strength loss of the silk fibre.
- Effluent with lower COD & BOD.
- Does not require bath temperature to be heated substantially.

This information is offered as correct, however, since conditions of use and applications are beyond our control, no guarantee of results is given and no liability is accepted.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 4894071 Fax: 91-44-24891285, email: rpkay@giasmd01.vsnl.net.in website: www.textanchem.com



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

PROCESS CONDITIONS FOR Silk DEGUMMING

Process conditions for enzymatic degumming with Texzyme DGS are given below:

Parameters	Operational range
pH	9 - 10 (pH need not be adjusted)
Temperature	90 - 100 C
Wetting Agent	1 ml / L
Dosage	4 - 5% OWF
Time	90 - 120 Minutes
M/L/ ration	1 : 10

This information is offered as correct, however, since conditions of use and applications are beyond our control, no guarantee of results is given and no liability is accepted.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 4894071 Fax: 91-44-24891285, email: rpkay@giasmd01.vsnl.net.in website: www.textanchem.com



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

TEX BIOSCOUR

DESCRIPTION

Multicomponent Enzyme formulation for scouring cotton fabric

SPECIFICATIONS

Appearance

pH (10%) : Off White Powder

Solubility : 9.0 - 10.0

Shelf Life : Soluble in water

: 6 months, if stored in closed containers, in a cool
(25° C), dry place, away from direct sunlight.

SALIENT FEATURES

- Tex Bioscour is used for application on cotton and its blends at pre-treatment stage of wet process.
- Removes gums and resins adhering to the cotton.
- Makes the cotton hydrophilic
- Reduces water consumption
- saves time and energy
- Reduction in BOD & COD levels.

This information is offered as correct, however, since conditions of use and applications are beyond our control, no guarantee of results is given and no liability is accepted.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 4894071 Fax: 91-44-24891285, email: rpkay@giasmd01.vsnl.net.in website: www.textanchem.com



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

PROCESS CONDITIONS FOR BIOSCOURING

Texbioscour can be used to scour all kind of cellulose materials in the form of fibres, yarn and grey fabric.

Process conditions for enzymatic scouring are given below :

Parameters	Operational range
pH	10 - 11
Temperature	90 - 100 C
Wetting Agent (nonionic)	1 ml / L
Dosage	2 - 4% OWF
Time	60 - 120 Minutes
M/L/ ration	1 : 10

The process needs moderate level of mechanical agitation to get effective results.

The process can be carries out in Jiger - inch / Padroll or Pit / J box continuous machines. Scouring and bleaching operations can be combined if necessary during the process by addition of upto 3% H₂O₂ OWF.

A water rinse is required after scouring.



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

TEXZYME BPL

Fungal acid cellulase for premium bio-polishing

SPECIFICATIONS

<i>Appearance</i>	:	Dark brown liquid
<i>Active ingredient</i>	:	Fungal acid cellulase
<i>pH (as such)</i>	:	4.5 - 5.5
<i>Specific Gravity</i>	:	Minimum 1.15
<i>Shelf Life</i>	:	6 months, if stored in closed containers, in a cool (25°C), dry place, away from direct sunlight

SALIENT FEATURES

Texzyme BPL is a liquid formulation cellulase enzyme, designed for fabric defibrillation and garment finishing (i.e. depilling, surface modification and softening).

It is ideal for denim washing as well as for achieving an aged look on various types of cellulose.

Texzyme BPL provides abrasion, surface polishing and softening with low enzyme dosages on a variety of cellulosic fabrics and garments. These effects can be varied according to users preferences.

Texzyme BPL requires less process time than that required by neutral or alkaline cellulases. As a result of the shorter time cycle, productivity increases.

APPLICATION

Texzyme BPL has 3 major applications :

- Fabric Finishing** : Use of Texzyme BPL results in an improved handle, increased softness, reduction in dead and immature cotton, removal of surface fibres and prevention of pill formation on cellulosic fabrics.

- b) Denim Finishing: Texzyme BPL gives an excellent stone washed look that can be varied according to users preferences. A wide range of abrasion effects can be obtained, with or without stones. Addition of surfactants is suggested to control backstaining.
- c) Garment Finishing :Texzyme BPL can be used for general bio-finishing prior to or after dyeing. Post dyeing treatment leads to partial removal of dye and softens the fabric.

Material to be treated with Texzyme BPL should be properly desized. This can be done with TexAmylase / TexAmylase Liq

Material : liquor ratio	1:8 to 1:10
Texamylase BPL	5-10 gm per kg of garment (i.e. 0.5 - 1.0%)
Non-Ionic Wetting Agent	0.1 - 0.3 gm/l for enhanced enzyme performance
Temperature	45 - 50°C
pH of the bath	4.5 - 5.5
Time	30 - 60 mins.

Small scale preliminary trials are recommended to fix optimal dosage and bath conditions so as to achieve the best results.

IMPORTANT POINTS

- 1 . After bio-washing the enzymes should be inactivated. Insufficient inactivation can result in extended exposure of the garment to active cellulase, resulting in loss in tensile strength.

To accomplish this, bath temperature is raised above 60°C and a hot rinse is given for 15 minutes. Alternatively, the garments are rinsed in a bath set at a pH > 9.0 for 15 minutes, followed by neutralisation and a water rinse.

2. Required dosage of Texzyme BPL will vary depending on the following factors:
 - a) Type of cellulosic content.
 - b) Construction and composition of the fabric.
 - c) Degree of stone washed or bio-finished effect desired.
 - d) Treatment time and other process parameters.
 - e) Type of equipment and other auxiliaries used.

The above data is indicative. Precise data should be obtained by trials to achieve the desired results. Dose rate and process time depends upon the desired results and the process conditions.

The information in this publication corresponds to the present state of our knowledge and is intended to describe our products and their possible applications. It is not intended to guarantee the suitability of particular product characteristics for a specific use. Any existing industrial rights are to be taken into consideration. Quality is guaranteed in accordance with our general conditions of sale.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 24894071 Fax: 91-44-24891285, email: rpkay@giasmd01.vsnl.net.in website: www.textanchem.com



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

TEXAMYLASE

Desizing enzyme based on conventional bacterial alpha amylase.

SPECIFICATIONS

<i>Appearance</i>	:	Off white powder
<i>Active ingredient</i>	:	Bacterial alpha amylase
<i>pH (as such)</i>	:	5.5 - 6.5
<i>Solubility</i>	:	Turbid solution with water
<i>Shelf Life</i>	:	6 months if stored in closed containers, in a cool (25°C), dry place, away from direct sunlight

SALIENT FEATURES

Texamylase is a conventional bacterial alpha amylase for the removal of sizes such as starch, starch derivatives or blends of starch with synthetic sizes.

Texamylase converts starch based products into dextrans which are easily removed by rinsing.

Addition of wetting agents enhance penetration of the enzyme and swelling of the size. They also assist in the removal of waxes, oils and synthetic sizing material.

Surfactants and lubricants are also recommended in combination with Texamylase in desizing, to reduce crease marks and streaks, especially in rotary washers and jet dyeing machines. However, as certain anionic and cationic surfactants disrupt enzyme activity, preliminary trials are recommended.

Chelating agents are not recommended for use with Texamylase.

APPLICATION

Garments to be desized are to be treated as follows :

Material : liquor ratio	1:8 to 1:10
Texamylase	1-3 gm per kg garment (i.e. 0.1 -0.3% depending on type of size and garment)
Non Ionic Wetting Agent	0.5 - 1.0 gm/l (for penetration and lubrication)
pH of the bath	4.5 - 5.5
Temperature	30 - 80°C (Optimum 55°C)
Time	20 - 30 mins.

Set the bath with Hostapal X-100. Garments are run in this bath at 55°C for 15 mins. Texamylase is added and the process of desizing continued. At the end of the process a short rinse is given. Unlike other enzymes, no inactivation step is required.

The above data is indicative. Precise data should be obtained by trials to achieve the desired results. Dose rate and process time depends upon the desired results and the process conditions.

The information in this publication corresponds to the present state of our knowledge and is intended to describe our products and their possible applications. It is not intended to guarantee the suitability of particular product characteristics for a specific use. Any existing industrial rights are to be taken into consideration. Quality is guaranteed in accordance with our general conditions of sale.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 24894071 Fax: 91-44-24891285, email: rpkay@giasmd01.vsnl.net.in website: www.textanchem.com



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

TEXAMYLASE LIQUID

Desizing enzyme based on conventional bacterial alpha amylase.

SPECIFICATIONS

<i>Appearance</i>	:	Brown coloured liquid
<i>Active ingredient</i>	:	Bacterial alpha amylase
<i>pH (as such)</i>	:	5.5 - 6.5
<i>Solubility</i>	:	Turbid solution with water
<i>Shelf Life</i>	:	6 months if stored in closed containers, in a cool (25°C), dry place, away from direct sunlight

SALIENT FEATURES

Texamylase Liquid is a conventional bacterial alpha amylase for the removal of sizes such as starch, starch derivatives or blends of starch with synthetic sizes.

Texamylase Liquid converts starch based products into dextrans which are easily removed by rinsing.

Addition of wetting agents enhance penetration of the enzyme and swelling of the size. They also assist in the removal of waxes, oils and synthetic sizing material.

Surfactants and lubricants are also recommended in combination with Texamylase Liquid in desizing, to reduce crease marks and streaks, especially in rotary washers and jet dyeing machines. However, as certain anionic and cationic surfactants disrupt enzyme activity, preliminary trials are recommended.

Chelating agents are not recommended for use with Texamylase Liquid.

APPLICATION

Garments to be desized are to be treated as follows :

Material : liquor ratio	1:8 to 1:10
Texamylase Liquid	1-3 gm per kg garment (i.e. 0.1 - 0.3% depending on type of size and garment)
Non Ionic Wetting Agent	0.5 - 1.0 gm/l (for penetration and lubrication)
pH of the bath	4.5 - 5.5
Temperature	30 - 80°C (Optimum 55°C)
Time	20 - 30 mins.

Set the bath with Non Ionic Wetting Agent. Garments are run in this bath at 55°C for 15 mins. Texamylase Liquid is added and the process of desizing continued. At the end of the process a short rinse is given. Unlike other enzymes, no inactivation step is required.

The above data is indicative. Precise data should be obtained by trials to achieve the desired results. Dose rate and process time depends upon the desired results and the process conditions.

The information in this publication corresponds to the present state of our knowledge and is intended to describe our products and their possible applications. It is not intended to guarantee the suitability of particular product characteristics for a specific use. Any existing industrial rights are to be taken into consideration. Quality is guaranteed in accordance with our general conditions of sale.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 24894071 Fax: 91-44-24891285, email: rpkay@giasmd01.vsnl.net.in website: www.textanchem.com



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

TEXZYME AC

Fungal acid cellulase for the bio-washing of denim material

SPECIFICATIONS

<i>Appearance</i>	:	Amber coloured liquid
<i>Active ingredient</i>	:	Acid cellulase
<i>pH (as such)</i>	:	5.0 (minimum)
<i>Solubility</i>	:	Completely soluble in water
<i>Specific Gravity</i>	:	1.15 (minimum)
<i>Shelf Life</i>	:	6 months if stored in closed containers, in a cool (25°C), dry place, away from direct sunlight

SALIENT FEATURES

Texzyme AC is a formulation of acid cellulase enzyme in liquid form, developed exclusively for the bio-washing of denim.

It performs best in the pH range of 4.5 to 5.5 and at temperatures from 45 - 55 °C. Temperatures above 60°C will inactivate the enzyme.

Use of Texzyme AC results in excellent puckering and gives denim a higher contrast look as compared to normal acid cellulases. There is less colour pull which results in a darker background and slightly greyer cast.

Texzyme AC gives an attractive granular faded look to the fabric/garment and causes negligible back staining.

Additional, use of Texzyme AC leads to reduced pilling and improved water absorbency.

APPLICATION

Desized garments ready for bio-washing are treated as follows:

Material : liquor ratio	1:8 to 1:10
Texzyme AC	5-10 gm/kg of garment (i.e. 0.5 - 1.0%)
Ionic Wetting Agent	0.1 - 0.3 gm/l (for better wettability and prevention of crease marks)
Temperature	45 - 55°C
pH of the bath	4.5 - 5.5
Time	30 - 60 mins. (depending on the finish required)

After bio-washing the enzymes should be inactivated. Insufficient inactivation can result in extended exposure of the garment to active cellulase, resulting in loss in tensile strength.

To accomplish this, bath temperature is raised above 60°C and a hot rinse is given. Alternatively, the garments are rinsed with detergent, followed by a water rinse.

Bleaching, if required is carried out with hydrochlorite or hydrogen peroxide.

The garments can also be treated with softeners and optical brightening agents - if so desired.

The above data is indicative. Precise data should be obtained by trials to achieve the desired results. Dose rate and process time depends upon the desired results and the process conditions.

The information in this publication corresponds to the present state of our knowledge and is intended to describe our products and their possible applications. It is not intended to guarantee the suitability of particular product characteristics for a specific use. Any existing industrial rights are to be taken into consideration. Quality is guaranteed in accordance with our general conditions of sale.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 24894071 Fax: 91-44-24891285, email: rpokay@giasmd01.vsnl.net.in website: www.textanchem.com



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinar, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

TEXZYME NC

Fungal neutral cellulase for premium bio-abrasion.

SPECIFICATIONS

<i>Appearance</i>	:	Off white powder
<i>Active ingredient</i>	:	Fungal neutral cellulase
<i>Solubility</i>	:	Partially soluble (90%) in water.
<i>Shelf Life</i>	:	6 months if stored in closed containers, in a cool (25°C), dry place, away from direct sunlight

SALIENT FEATURES

Texzyme NC is a buffered neutral cellulase formulation in powder form. It is used for the production of high colour contrasts and abraded fashion effects on denim garments.

It is superior to acid cellulases both with respect to controlling backstaining and premium finishing.

Texzyme NC treatment results in excellent puckering and granular fading with no backstaining.

It also leads to reduced pilling and improved water absorbency.

APPLICATION

Garments are to be properly desized prior to treatment with Texzyme NC. This can be done with Texzyme DZ / DZ liq. They are then treated as follows :

Material : liquor ratio	1:8 - 1:10
Texzyme NC	5.0-10.0 gm/kg of garment (i.e. 0.5 - 1.0%)
Non Ionic Wetting Agent	0.1 - 0.3 gm/l (for better wettability and prevention of crease marks)
Temperature	45 - 55°C
pH of the bath	6.5 - 7.5
Time	30 - 45 mins. (depending on the finish required)

After bio-washing the enzymes should be inactivated. Insufficient inactivation can result in extended exposure of the garment to active cellulase, resulting in loss in tensile strength.

To accomplish this, bath temperature is raised above 60°C and a hot rinse is given. This is followed by a cold rinse and hydroextraction.

The garments can also be treated with softeners and optical brightening agents - if so desired.

The above data is indicative. Precise data should be obtained by trials to achieve the desired results. Dose rate and process time depends upon the desired results and the process conditions.

The information in this publication corresponds to the present state of our knowledge and is intended to describe our products and their possible applications. It is not intended to guarantee the suitability of particular product characteristics for a specific use. Any existing industrial rights are to be taken into consideration. Quality is guaranteed in accordance with our general conditions of sale.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 24894071 Fax: 91-44-24891285, email: rpkay@giasmd01.vsnl.net.in website: www.textanchem.com



TEX BIOSCIENCES (P) LIMITED

TEX BIOSCIENCES (P) LIMITED

Leather, Textile, Veterinary, Pharmaceuticals Division
BU-Textile Enzymes

Technical Information

TEXZYME PK

Texzyme PK is an enzyme formulation which catalyzes the decomposition of residual hydrogen peroxide to oxygen & water. The product is highly specific for hydrogen peroxide and will not react with dyestuffs.



SPECIFICATIONS

<i>Appearance</i>	:	Light Brownish liquid
<i>Active ingredient</i>	:	Fungal Catalase
<i>pH (as such)</i>	:	4.5 - 5.5
<i>Solubility</i>	:	Clear Solution in water
<i>Shelf Life</i>	:	6 months if stored in closed containers, in a cool (25°C), dry place, away from direct sunlight

SALIENT FEATURES :

Texzyme PK is ideally suited for use following bleach clean-up. It should be used prior to reactive dyeing which is sensitive to both reducing peroxide as well as reducing agents.

The advantages of using Texzyme PK in bleach clean-up is as follows:

- Reduced dyeing time
- Eliminates residual hydrogen peroxide without reacting with dyestuffs
- Reduces washes and hence water consumption
- Enzyme is biodegradable

PROCESS CONDITIONS :

Texzyme PK enzyme gives an effective performance across a broad range of pH and temperature. A typical processing conditions is as follows:

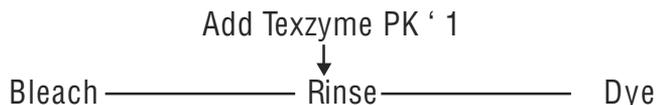
pH	3-9
Temperature	30 - 60°C
Process Time	20 - 30 minutes
Dose	0.3- 0.5 g/l

BLEACH CLEAN-UP APPLICATION :

A typical bleach clean-up is as follows:



Using Texzyme PK to substitute a reducing agent the process can be simplified as :



reducing the number of steps as well as water requirement.

The step-wise procedure for adoption in jetdye machines, winches, jiggers, beckn or yarn dyeing equipment is as follows:

1. Drain bleach liquor
2. Refill using a MLR suitable for subsequent dyeing operation
3. Adjust pH to 5 and temperature between 30-60
4. Add required amount of Texzyme PK (0.3 - 0.5 gpL) and begin circulation
5. Check for residual peroxide after 20 minutes. If peroxide traces are present recheck after 5 - 10 minutes.
6. Once residual peroxide is nil proceed with dyeing in the same bath.

The above data is indicative. Precise data should be obtained by trials to achieve the desired results. Dose rate and process time depends upon the desired results and the process conditions.

The information in this publication corresponds to the present state of our knowledge and is intended to describe our products and their possible applications. It is not intended to guarantee the suitability of particular product characteristics for a specific use. Any existing industrial rights are to be taken into consideration. Quality is guaranteed in accordance with our general conditions of sale.

Tex Biosciences (P) Limited

Office . Textan House, Post Box No.6043, Old No.47, New No.75, 4th Avenue. Ashok Nagar, Chennai - 600 083. India.
Tel: 24891302, 24891684, 24892923, 24894071 Fax: 91-44-24891285, email: rpkay@giasmd01.vsnl.net.in website: www.textanchem.com