

Transforming industries through enzymatic innovation



For Textile Industry

Varucel™ ATC

Varucel™ NTC

Varuamyl™ HTC

Varuamyl™ WTC

Solpect®

Mannanase

Xylanase Enzyme

Descor BBL

Laccl

Faden

Varucel™ ATC

Concentrated Acid Cellulase Enzymes for Bio-polishing

Varucel™ ATC is a high-performance concentrated acid cellulase enzyme designed for textile biopolishing for cotton fabric & its blends. It improves fabric handle, reduces fuzz and pilling, and provides durable softness and brightness. The product is suitable for applications in knitwear, woven fabrics, and other cellulosic materials.

Properties

Activity	:	90,000 CMC U/gm
Appearance	:	Dark brown Liquid
Specific gravity	:	1.0 – 1.10
pH	:	5.5 – 6.0

Operating Parameters

Temperature	:	55 – 65 °C
pH	:	4.5 – 5.5
Dosage	:	0.2 – 0.3 g/L
Time	:	30-60 mins (Depends on fabric / desired effect)

Inactivation

Varucel™ ATC can be completely inactivated by raising the temperature above 90 °C for 10 minutes or by increasing the pH above 10.0 for 10 minutes.

Storage & Packaging Information

Store at or below 25°C in closed containers to maintain product stability.

Available in 25 kg drum and 50 kg drum.

Shelf Life

12 months, subject to proper storage conditions..

Certification & Compliance

- Biodegradable and manufactured by fermentation of non-GMO micro-organisms.
- Does not contain genetically engineered organisms.
- Meets relevant textile auxiliaries' safety standards & compliances.

Safety & Handling

Varucel™ ATC is a protein-based enzyme and may cause sensitization or allergic reactions in sensitive individuals. Avoid inhalation of enzyme mist and direct contact with skin and eyes. In case of contact, rinse immediately with plenty of water. Refer to the Safety Data Sheet (SDS) for detailed handling guidelines.

Benefits

Improves

fabric handle and surface smoothness

Provides

durable softness and brightness

Reduces

fuzz and pilling for enhanced appearance

Eco-friendly

solution for sustainable textile processing

Varucel™ NTC

Concentrated Neutral Cellulase Enzymes for Bio-polishing

Varucel™ NTC is a high-performance neutral cellulase enzyme preparation designed for textile biopolishing. It enhances fabric smoothness, reduces fuzz and pilling, and imparts a soft, clean surface with improved appearance. The product is suitable for knitwear, woven fabrics, and other cellulosic textiles, delivering consistent results under controlled conditions.

Properties

Activity	:	50,000 CMC U/gm
Appearance	:	Dark brown Liquid
Specific gravity	:	1.0-1.10
pH	:	6.0-6.5

Processing conditions

Temperature	:	55 – 65 °C
pH	:	5.0 – 6.5
Dosage	:	0.1 – 0.2 %
Time	:	30-60 mins (Depends on fabric / desired effect)

Inactivation

Varucel™ NTC can be completely inactivated by raising the temperature above 90 °C for 10 minutes or by increasing the pH above 10.0 for 10 minutes.

Storage & Packaging Information

Store at or below 25°C in closed containers to maintain product stability.

Available in 25 kg drum and 50 kg drum.

Shelf Life

12 months, subject to proper storage conditions.

Certification & Compliance

- Biodegradable and manufactured by fermentation of non-GMO micro-organisms.
- Does not contain genetically engineered organisms.
- Meets relevant textile auxiliaries' safety standards & compliances.

Safety & Enzyme Handling

Varucel™ NTC is a protein-based enzyme and may cause sensitization or allergic reactions in sensitive individuals. Avoid inhalation of enzyme mist and direct contact with skin and eyes. In case of contact, rinse immediately with plenty of water. Refer to the Safety Data Sheet (SDS) for detailed handling guidelines.

Benefits

Provides

excellent fabric surface modification

Reduces

fuzz and pilling, giving a cleaner appearance

Environmentally

friendly processing aid

Delivers

durable softness and brightness

Applicable

to a wide range of fabrics and processes

VaruamyI™ HTC

High Temperature Concentrated Alpha Amylase for Desizing

VaruamyI™ HTC is a highly concentrated liquid alpha amylase for textile desizing. It provides outstanding performance in application temperatures ranging from 70°C to 110°C, with excellent heat stability. VaruamyI™ HTC is ideal for desizing fabrics sized with starch, starch derivatives, or blends of starch and synthetic materials. Its formulation allows compatibility with a variety of chemical auxiliaries, enabling flexibility for textile processors.

Properties

Activity	:	180000 U/ml
Appearance	:	Dark brown liquid
Specific gravity	:	1.05 -1.15 g/ml
pH	:	5.0 -6.7

Operating parameters

Process Parameter	Operational Range	Optimum Range
pH	: 5.0 – 6.5	5.5 – 6.0
Temperature	: 70 – 110 °C	80 – 100 °C

Dosage guidelines by equipment

Equipment	Enzyme Dose (g/L)
Jigger	: 0.05 – 0.20
Pad Batch (hot)	: 0.10 – 0.50
Pad Steam	: 0.15 – 0.40

Inactivation

VaruamyI™ HTC can be completely inactivated by raising the temperature above 120 °C for 10 minutes or by increasing the pH above 11.0 for 10 minutes.

Storage & Packaging Information

Store in closed containers at or below 25 °C (77 °F) to ensure extended shelf life.

Available in 25 kg/drum and 50 kg/drum.

Shelf Life

12 months, subject to proper storage conditions.

Certification & Compliance

- Biodegradable and manufactured by fermentation of non-GMO micro-organisms.
- Does not contain genetically engineered organisms.
- Meets relevant textile auxiliaries' safety standards & compliances.

Safety & Enzyme Handling

Avoid inhalation of enzyme dust and mists. In case of contact with skin or eyes, rinse with water for at least 15 minutes. Refer to the Safety Data Sheet (SDS) and enzyme handling guidelines.

Benefits

Efficient

desizing in medium-to-high temperature processes (hot pad-batch, pad-steam, jigger)

Consistent

desizing performance across different fabric types

Simplified

product offering with wide applicability

Excellent

product storage stability

VaruamyI™ WTC

Wide Temperature Concentrated Amylase Enzymes

VaruamyI™ WTC is a high-performance liquid alpha amylase designed for textile desizing. It enables efficient removal of starch-based sizes at room temperature to high temperature processes, while ensuring fabric integrity. Due to its high activity, dilution before use is recommended.

Properties

Activity	:	1,70,000 CMC U/gm
Appearance	:	Brown liquid
Specific gravity	:	1.055 – 1.095
pH	:	5.0 – 5.5

Processing conditions

Temperature	:	30 – 110 °C (optimum 95 °C)
pH	:	5.5 – 7.0
Dosage	:	0.1 – 0.2 g/L
Time	:	30 – 40 minutes

Dosage guidelines by equipment

Equipment		Enzyme Dose (g/L)
Jigger	:	0.01 - 0.05
Pad Batch (hot)	:	0.02 - 0.10
Pad Steam	:	0.07 - 0.20

Inactivation

VaruamyI™ WTC can be completely inactivated by raising the temperature above 120 °C for 10 minutes or by increasing the pH above 11.0 for 10 minutes.

Storage & Packaging Information

Store in a dry place at approximately 25 °C in closed containers. Available in 25 kg/drum and 50 kg/drum.

Shelf Life

12 months, subject to proper storage conditions

Certification & Compliance

- Biodegradable and manufactured by fermentation of non-GMO micro-organisms.
- Does not contain genetically engineered organisms.
- Meets relevant textile auxiliaries' safety standards & compliances.

Safety & Enzyme Handling

VaruamyI™ WTC is a protein-based enzyme and may cause sensitization or allergic reactions in sensitive individuals. Avoid inhalation of enzyme mist and prolonged skin contact. In case of contact with eyes or skin, rinse with plenty of water. Refer to the Safety Data Sheet (SDS) for detailed handling guidelines.

Benefits

Complete
removal of starch-based sizes

Excellent
storage stability

Minimal
fabric strength loss during desizing

Effective
performance in medium-to-high temperature processes

Environmentally
friendly processing aid

Solpect®

Concentrated Pectate Lyase Enzymes for Bio-scouring

Solpect® is a high-performance enzyme designed for bioscouring in textile pre-treatment. It efficiently removes non-cellulosic impurities, enhancing absorbency, softness, and dyeability. By operating under mild temperature and pH conditions, Solpect® offers an eco-friendly alternative to conventional alkaline scouring.

Properties

Appearance	:	Brown Liquid
Specific gravity	:	1.0 - 1.25 g/ml
pH	:	4.5- 5.5

Processing Conditions

Temperature	:	55 – 65 °C
pH	:	5.5 – 7.5
Dosage	:	0.2 – 0.4 g/L
Time	:	30 – 60 minutes
Liquor ratio	:	1:8 – 1:20

Inactivation

Solpect® can be completely inactivated by raising the temperature above 80 °C for 10 minutes or by increasing the pH above 11.0 for 10 minutes.

Storage & Packaging Information

Store in a dry place at 5 – 25 °C in closed containers. Available in 25 kg/drum and 30 kg/drum.

Shelf Life

6 – 12 months, subject to proper storage conditions.

Certification & Compliance

- Biodegradable and manufactured by fermentation of non-GMO micro-organisms.
- Does not contain genetically engineered organisms.
- Meets relevant textile auxiliaries' safety standards & compliances

Safety & Handling

Solpect® is a protein-based enzyme and may cause sensitization or allergic reactions in sensitive individuals. Avoid inhalation of enzyme mist and direct contact with skin and eyes. In case of contact, rinse immediately with plenty of water. Refer to the Safety Data Sheet (SDS) for detailed handling guidelines.

Benefits

Removes

impurities effectively without damaging cellulose fibers

Operates

under moderate pH and temperature conditions (energy saving)

Improves

fabric wettability, absorbency, softness, and dyeability

Reduces

wastewater load (TDS, COD, BOD)

Eco-friendly

and safer alternative to harsh chemical scouring

Mannanase

Industrial grade. Eco-efficient Mannan breakdown for industrial excellence.

Mannanase is a hydrolytic enzyme that specifically breaks down mannans, a group of complex polysaccharides found abundantly in plant cell walls, especially in legumes, palm kernel, guar gum, and copra meal. Classified primarily as endo- β -1,4-mannanase, it cleaves the internal β -1,4-mannosidic linkages in the backbone of mannans, glucomannans, and galactomannans.

This enzyme plays a vital role in various industries by improving process efficiency, enhancing nutrient availability, and reducing anti-nutritional factors in feed and food matrices. Its use contributes to clean-label, sustainable processing solutions.

Application

Works alongside other hemicellulases and cellulases in bio-scouring and degumming processes.

Properties

Appearance	:	Light brown liquid / off-white powder
Enzyme Activity	:	25000 U/g (customizable)
pH Range	:	4.5 – 7.5 (optimum ~6.0)
Temperature Range	:	30°C – 60°C (optimum ~50°C)
Solubility	:	Completely soluble in water (liquid)
Shelf Life	:	12 months at 25°C (sealed, dry state)

Packing

50 kg HDPE drum

Storage

- Store in a cool, dry place away from direct sunlight.
- Keep container tightly closed when not in use.
- Use personal protective equipment (PPE) during handling.

Regulatory & Quality

- Non-GMO production strain
- Compliant with ISO 9001, FSSAI, and GMP standards
- Halal and Kosher certification available (on request)
- Safety Data Sheet (SDS) available upon request

Benefits

Enhances
fabric softness and
wettability

Removes
non-cellulosic impurities
from cotton and ramie

Eco-friendly
alternative to harsh
chemicals

Xylanase Enzyme

Industrial grade. Eco-efficient Hemicellulose degradation for textiles.

Xylanase is a class of hydrolytic enzymes that catalyze the degradation of xylan, a major hemicellulosic component of plant cell walls, into xylose and xylo-oligosaccharides. Xylanases enhance process efficiency and product quality in a wide range of industries by enabling better fiber modification, improved digestibility, and cleaner processing.

Application

- Biopolishing of cellulosic fabrics
- Removal of hemicellulosic residues in bast fibers like flax, hemp

Properties

Form	:	Liquid / Powder
Activity	:	≥30,000 U/g (customizable)
Source	:	Aspergillus sp.
Optimal pH Range	:	5.0 – 7.0
Optimal Temperature	:	45°C – 60°C
Stability	:	Stable under baking, feed & pulp conditions
Compatibility	:	Compatible with cellulase, amylase, protease

Packing

Available in 50 Kg drums.

Storage

- Store in a cool, dry place below 25°C
- Shelf Life: 12 months (in sealed condition)

Benefits

Cleaner
softer fiber finish

Enhanced
dye uptake and
uniformity

Eco-friendly
processing with reduced
chemical inputs

Improved
texture and appearance
of fabrics

Descor-BBL

Integrated enzyme formula for desizing, scouring and bleaching

Descor-BBL is a research based single integrated cotton pretreatment enzymatic formula for combined desizing, scouring and bleaching of cotton textiles. It is very useful in process house for integrated and simultaneous desizing, scouring, bleaching and mercerization of the fabrics.

Descor-BBL has three different types of actions. It has a blend of bio-desizing, bioscouring and a bio-agent to recycle small amount of hydrogen peroxides to be added separately.

The built-in wetting agent ensures proper penetration of enzyme into the textile material.

Typical usage conditions for Descor-BBL for cotton pretreatment are:

Usage	:	1.5 to 2% of Fabric weight
pH	:	pH 5-6
Temperature	:	50-60

Properties

Appearance	:	Brown Liquid
Solubility	:	Soluble in water
Optimum pH	:	5
Operating Temp	:	60°C

Compatibility with

Non-ionic surfactant	:	Generally, very good
Anionic surfactant	:	Selective, some reduce the efficacy of the enzyme
Solvent based surfactant	:	Selective, some reduce the efficacy of the enzyme
Organic sequestrants	:	Generally good
Reducing/ oxidizing agent	:	Reduce the efficacy of enzyme
Metal ions	:	Iron and copper ions are enzymes toxins

Storage

In sealed containers, under cool, dry conditions. It should be used within 12 months beyond which loss of activity starts which may accelerate in the case of improper storage.

Safety

Contact or Inhalation of enzymes in any form may cause allergic reactions and should be avoided. In case of contact with the skin or eyes, promptly rinse with water for at least 15 minutes. Please refer Material Safety Data Sheet (available on request) for all safety instructions.

Benefits

Low
energy need

No desizing
chemicals required

No strength
loss of fabrics

Reduced
water requirement

No harsh
bleaching
chemicals

Half quantity
of neutralization acid required as
compared with convectional system

Mercerization
of fabric without
machine and caustic

Low Pressure
steam is required

Overall
process benefit

No use
of caustic soda

Environment
friendly

Reduced
requirement of oxygen
based bleaching agents
like Hydrogen peroxide

Greater
absorbency on fabrics
which leads to almost
20- 30% on dye cost

Lesser
process time is required
as compared to
conventional process

Laccel

Advanced bio-stone wash formula

Laccel is a new generation modified Cellulase / Laccase based preparation which gives good wash down effect on denim garments. It can be used with stone / perlite / emery balls.

Properties

Appearance	:	Laccel is available in off-white powder (Note that color does not affect or reflect activity.)
Odor	:	Slight fermentation odor

Product benefits

Laccel is used in bio-stoning process. The use of Laccel allows the denim garment washing procedure to be carried out under mild conditions in the absence of pumice stones and harsh chemical agents. Laccel gives a more uniform aged look for denim garment. Laccel also helps in preventing back staining.

Processing Conditions

Laccel functions at a wide pH and temperature range, optimum is pH 5.0 and temp 45-50°C the recommended liquor to goods ratio is 6.25:1 for stone wash applications.

Recommendation for usage

- Follow normal desizing and rinse procedures that are currently in use. Ensure that the bath and garments are at about pH 5.0 before starting the low liquor ratio (cellulase) stoning cycle. (This is especially important if an alkaline desizing has been used.)
- Laccel functions at concentrations from 0.8% to 1.2% OWG.
- Laccel is recommended for use in specialty denim processing in combination with pumice stones.

A typical processing example

- Load the garments into the washing machine and add the required amount of pumice stones. Garment load will vary from 30 to 50 percent of washer capacity. Normally the garments are not reversed.

- Desize the garments with your normal procedure. Drain balance and rinse with warm water at least once.
- Add water for Laccel step at a liquor ratio of 6.25:1 and be below the wheel rib. The water level should be just enough to cover the garments. Maintain the water temperature at 45°C – 50°C. Run for 2 minutes.
- Check the pH of the water. It should be about 5.0. Adjust as necessary with acetic acid, citric acid/sodium citrate. Run for 2 minutes.
- Recheck the pH of the water and adjust as necessary.
- Add Laccel at 0.8% to 1.2% OWG. Percentage will vary depending on the desired end result. Add 2% Hydrogen Peroxide (of the weight of garment).
- Wash for 15, 20, 30, 45 minutes. Time varies as required for end result. If time required is greater than 45 minutes it is preferred to do two Laccel baths. For example, if 60 minutes is required, do two 30 minutes baths.

Caution

Do not use live steam on enzyme baths. Temperatures above 60°C will significantly reduce the enzyme activity and may eventually destroy them.

Inactivation

For inactivation of Laccel either raise the temperature >80°C or raise pH to >9.

Storage

In sealed containers, under cool, dry conditions. It should be used within 12 months beyond which loss of activity starts which may accelerate in the case of improper storage.

Safety

Contact or Inhalation of enzymes in any form may cause allergic reactions and should be avoided. In case of contact with the skin or eyes, promptly rinse with water for at least 15 minutes. Please refer Material Safety Data Sheet (available on request) for all safety instructions.

Faden

Advanced denim fading enzyme formula

Faden is latest technology product designed for fading of denim fabric and garments without effecting fabrics' special properties especially in finishing treatment of denim fabric containing Elastane.

Faden replaces Sodium hypochlorite bleaching of denim which is undesirable due to its undesired effects on the fabric and safety & environmental problems. Faden with the help of its specially developed enzyme complex imparts controlled fading of denim fabric with following advantages:

Typical usage conditions for Faden for Denim fading effect are

Process condition:

Liquor ratio	:	1 : 3 to 1 :5
Usage	:	1 -7% of Fabric weight
pH	:	pH 5
		pH can be maintained by acetic acid
Temperature	:	60°C
Time	:	20-45 minutes depending on finish requirement
Termination	:	Increase the pH to 9 with the help of Sodium Hydroxide

Properties

Appearance	:	Off white powder
Solubility	:	Soluble in water
Optimum pH	:	5
Operating Temp	:	60°C

Compatibility with

Non-ionic surfactant	:	Generally, very good
Anionic surfactant	:	Selective, some reduce the efficacy of the enzyme
Solvent based surfactant	:	Selective, some reduce the efficacy of the enzyme
Organic sequestrants	:	Generally good
Reducing/ oxidizing agent	:	Reduce the efficacy of enzyme
Metal ions	:	Iron and copper ions are enzymes toxins
Chlorin	:	Chlorine has degrading effect on enzymes

Storage

In sealed containers, under cool, dry conditions. It should be used within 6 months beyond which loss of activity starts which may accelerate in the case of improper storage.

Safety

Contact or Inhalation of enzymes in any form may cause allergic reactions and should be avoided. In case of contact with the skin or eyes, promptly rinse with water for at least 15 minutes. Please refer Material Safety Data Sheet (available on request) for all safety instructions.

Benefits

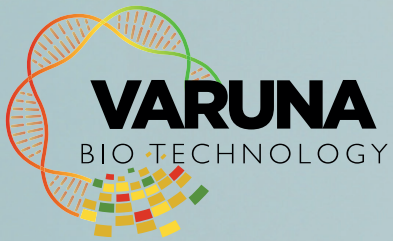
Only affects
the indigo dye without affecting other ingredients

Fine
fade effect

Safely
used on Lycra containing denim without changing the fabric properties

Eco-friendly
bleaching





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