

ARN

# TEXTILE CHEMICALS

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ENIM

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TEXTILE WET PROCESSING



Stalwart Advanced Material Inds has been a major player in the textile industry for several decades and has a reputation for being one of the pioneer manufacturers of textile chemicals in India.

We have a wide range of chemicals for wet processing of cotton yarn, cotton knit, cotton woven, synthetics such as polyester and yarn, terry towels & denim that meet the customer requirements.

We have a state of the art manufacturing facility at a prime location in Gujarat. The plant is well equipped with SS reaction kettles, blenders, homogenisers and dispersers with utilities such as boiler, cooling tower and chilling plant for synthesis, esterification and polymerisation reactions.

Our Quality Control laboratory is also well equipped with the required facilities for testing raw material, packing material and finished products.

At our R&D Centre in Mumbai, our technical team consistently works to develop products that not only provide improved properties but also greater cost efficiency and less impact on the environment. We develop products that are eco-friendly and help customers to meet International standards.

Our strong sales and marketing team is technically strong to provide solutions to customers and offer tailor-made products.

We take this opportunity to thank our valued customers, whose continued patronage and confidence in our products inspire us to extend the best of services and enables us to provide value for their money.

We are delighted that our hard work and investments in product development, environment-friendly offerings and capacity expansion have started delivering results.

With our new state-of-the-art production facility coming onstream, we are driving cost efficiencies and gaining benefits of scale.

With new capacity enhancements, innovative product formulations and a focus on premium value-added products, we endeavour to be a leader in the non-toxic alternatives market.

We are focused on eco-friendly solutions, optimum usage of recycled raw materials and zero pollution manufacturing. We follow Lean management in our organisation to eliminate wastes to balance our objectives and goals of social service to the nation at large.

We take pride in addressing the needs of our customers through research-based innovative products and solutions. We shall maintain continuous interaction with all our stakeholders to assess their emerging requirements and new ideas so that we can plan appropriate actions in our endeavour to come up to their expectations.

We are committed to total customer satisfaction by identifying their specific needs, translating them into Quality products and providing dependable after-sales services.

Our commitment reflects in our Quality Policy and we strive to achieve it by putting into place Total Quality Management (TQM) throughout our organisation which also assures ecofriendly products free from APEO and other restricted substances mentioned in ZDHC MRSL.

We, therefore, seek continued patronage of our valued customers for creating long-term value, cooperation of our employees for delivering operational excellence and our stakeholders who have contributed to the growth of the organization.



## **SEQUESTERING AGENTS**



PP	Protonic pre-treatment agent for demineralization	O K W O O O
HRS	Hardness Removing Sequestrant	YKWSTD
PCS	Protective Colloidal Sequestrant	YKWTD
USP	Universal Sequestrant Polymer	YKWTD
PSS	Peroxide Stabilizer & Sequestrant	YKWOTO

## **WETTING AGENTS**



WAA	Wetting Agent Anionic	YKWST
NPA	Nonionic Penetrating Agent	YKWST
MWA	Mercerizing wetting agent for woven	$\bigcirc\bigcirc$
WPD	Wetting and penetrating agent for denim	
NHT	Anionic wetting and swelling agent	YKWSTD
DAW	De-aerating and wetting agent	YKWSTD

## DETERGENTS/SCOURING AGENTS/OIL STAIN REMOVERS



NDC	Non-ionic Detergent for Cellulosic	YKWTD
DLF	Detergent Low-Foaming for scouring of cellulosic	YKWOTD
ZFD	Zero Foaming Detergent for jets/high turbulence machines	KOTD
CBD	Clay based scouring, wetting and bleaching agent	YKWSTD
MFD	Multi-functional detergent for one bath scouring and bleaching	YKWOT
ASD	Alkaline Stable Detergent for de-sizing of woven fabrics	
ADSR	Anionic detergent cum Stain Remover	YKWS
OSR	Oil stain remover for de-greasing and removal of stains	YKWSTD
NDSR	Non-ionic Detergent cum Stain Remover	YKWSTD
FBOL	Detergent cum Stain Remover for cellulosic and polyester	YKWSTD

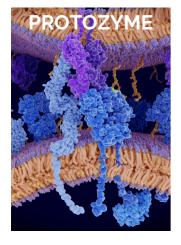


## **PEROXIDE STABILISERS**



IPS	Inorganic Peroxide Stabilizer	YKWT
OPS	Organic Peroxide Stabilizer	OK W OT O

## **ENZYMES**



ADS	Amylase De-sizing Enzyme for removal of starch	OWOTD
СРК	Catalase enzyme for removal of peroxide after bleaching	YKWOTO
ВРА	Bio-polishing acid enzyme for finishing of cellulosic	
BPN	Bio-polishing neutral enzyme for finishing of cellulosic	O K O O O
BWA	Bio-washing acid enzyme for denim/garments	
BWN	Bio-washing neutral enzyme for denim/garments	

## **DISPERSING & LEVELING AGENTS**



DBC	Dye-Bath Conditioner	YKWOTD
RLA	Leveling agent for reactive dyeing	YKWOTO
DISP	Dispersing agent for polyester dyeing	
LP	Leveling agent for polyester dyeing	
DLP	Dispersing and leveling agent for polyester dyeing	
LAN	Leveling Agent for Nylon	
CPD	Carrier for Polyester dyeing	
DALP	Diffusion accelerator and leveling agent for polyester dyeing	
LMC	Leveling agent for 1:2 metal complex dyes	
PES	Leveling agent for promoting migration of disperse dyes	
CRA	Cationic Retarding Agent for basic dyes	
OR	Oligomer removal during dyeing polyester with disperse dyes	
ABS	Anti back staining agent for denim	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$





## **ADDITIVES**



CAN	Core alkali neutralizer	YKWOTD
ABD	Acid Buffer cum Dispersant, to be used in polyester dyeing	
UBS	Universal buffer for synthetic dyeing	
ADN	Acid donor for nylon dyeing	
AAS	Acetic acid substitute	YKWSTD
OXD	Stabilized oxidizing agent for Sulphur dyeing.	Y K W O O
RED	Reducing agent for Sulphur dyeing.	Y K W O O

## **WASHING-OFF AGENTS**



DSP	Dispersing, Sequestering Polymeric washing-off agent	YKWOTO
RC-ALK	Reduction clearing agent after dyeing in alkaline medium	
RC-ACD	Reduction clearing agent for disperse dyeing in acidic medium	
SAN	Soaping agent for nylon dyeing	
SPP	Soaping agent for polyester printing	

## **DYE-FIXING AGENTS**



DFR	Dye-Fixing agent for Reactive dyes	YKWT
NFDF	Non-formaldehyde dye fixing agent for reactive dyeing	YKWOT
FAN	Dye fixing agent for nylon dyeing	
LAP	Loop Accelerator for prints on Polyester	

## **LUBRICATING AGENTS**



ACA	Anti-Creasing agent	O K W S O
KNT	Knitting Oil for lubrication of knitted fabrics	O K O O O
CON	Lubricating coning oil for synthetic filament yarn	YOSOO













## **FINISHING AGENTS**



CS	Cationic softener for all types of fibers	YKWODD
NS	Non-ionic softener for white fabrics	YKWST
ES	Elastomeric softener for polyester and nylon	000s00
TTS	Terry towels softener for inner softness and absorbency	$\bigcirc\bigcirc\bigcirc\bigcirc$
YL	Yarn lubricant	Y O S O O
STL	Thread lubricant for kiss roll application	Y O S O O
SEW	Sewability improver	YOWOD

## SILICONE SOFTENERS



DAF	Di-amino Functional Silicone	OK W O D
MAF	Amino functional silicone softener	YKWSD
SAR	Silicone amino reactive softener	YKWSD
JSS	Jet stable silicone softener having excellent shear stability	YKWOD
SRS	Soil release silicone softener	O K W S D
NYS	Non-yellowing silicone softener	YKWST
HYS	Hydrophilic silicone softener for terry towels	$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$
EPS	Epoxy functional polymer silicone softener	YKWSTD

## SPECIALTY SOFTENERS

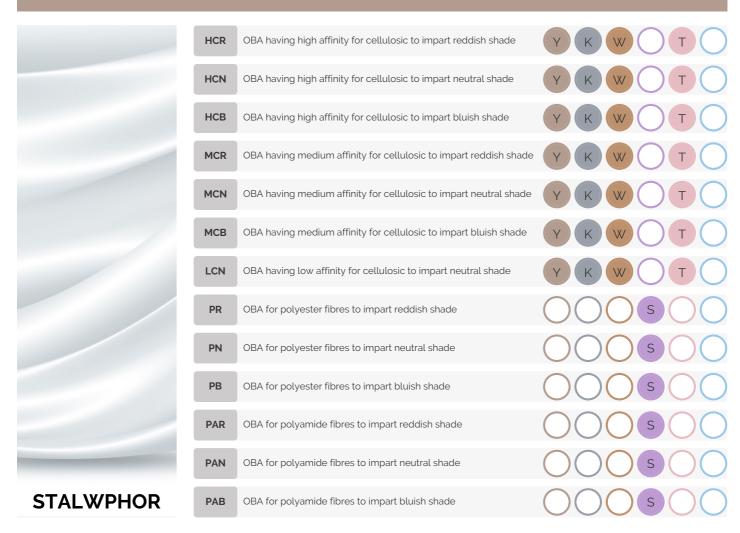


NSPE	Specialty softener for improving strength on whites	YKWS
CSPE	Specialty softener for improving strength on dyed fabrics	YKWSD
NSSW	Specialty silicone softener for superior softness on white fabrics	YKWST
CSSD	Specialty silicone softener for superior softness on dyed fabrics	YKWOD
ESSY	Elastomeric silicone softener for bulky feel on synthetics	
HSTT	Hydrophilic silicone softener for super softness on terry towels	$\bigcirc\bigcirc\bigcirc\bigcirc$





## **OPTICAL BRIGHTENING AGENTS**



## PRINTING CHEMICALS



HVRT	High viscosity reactive printing thickener	OK WOO
RPT	Reactive printing thickener	KWOO
SPT	Synthetic printing thickener	
PPT	Pigment printing thickener	KWS
PPB	Low formaldehyde Pigment printing Binder	KWS
FB	APEO free and formaldehyde free acrylic emulsion	KWS
PPS	Softening agent for pigment printing for soft handle	KWS
CL-NF	Formaldehyde free cross-linking agent, applicable for OEKO TEX	KWS
CL-LF	Formaldehyde based cross linking agent	KWS
КВ	APEO free Khadi with excellent elasticity	KWS



### SE

### **SEQUESTERING AGENTS**

#### **NEOQUEST HRS**

Hardness Removing Sequesterant for chelating Iron and calcium present in water.

#### **NEOQUEST PCS**

Protective Colloidal Sequesterant having in-built levelling properties for uniform dyeing.

#### **NEOQUEST USP**

Universal Sequesterant Polymer having hardness removing and protective colloidal properties.

#### **NEOQUEST PSS**

Peroxide Stabilizer & Sequesterant suitable for combined scouring & bleaching of cellulosics.



### **WETTING AGENTS**

#### **VERSETOL WAA**

Wetting Agent Anionic for rapid penetration in fabric.

#### **VERSETOL NPA**

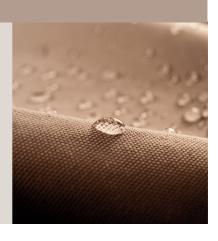
Nonionic Penetrating agent used for wetting in all stages of processing.

#### **VERSETOL NHT**

Anionic wetting and swelling agent suitable for all stages of wet processing.

#### VERSETOL DAW

Deaerating and wetting agent for all stages of wet processing.



### **DETERGENTS**

#### **EVOSURF NDC**

Non-ionic Detergent for Cellulosic having very good emulsifying properties required for scouring.

#### **EVOSURF DLF**

Detergent Low-Foaming having very good wetting, emulsifying and rewetting properties for scouring cellulosic.

#### **EVOSURF MFD**

Multi-Functional Detergent having in-built properties of sequestering and peroxide stabilizing, for one bath scouring and bleaching of cotton.

#### **EVOSURF ADSR**

Anionic detergent cum Stain Remover for one bath scouring and bleaching of cotton woven and knit fabric.

#### **EVOSURF OSR**

Oil stain remover for degreasing and removal of stubborn stains from cellulosic fibres.





### DETERGENTS

#### **EVOSURF NDSR**

Non-ionic Detergent cum Stain Remover for cellulosics and polyester & their blends in woven and knitted form.

#### **EVOSURF FBOL**

Powerful wetting agent and detergent with an emulsifying action for removing oil, fatty and waxy impurities.



### PEROXIDE STABILISER

#### **OXYSTAB IPS**

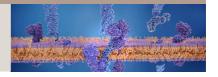
Inorganic Peroxide Stabilizer, having good alkaline & temperature stability.



### **ENZYMES**

#### PROTOZYME CPK

Catalase enzyme for removal of peroxide after bleaching.



### DISPERSING & LEVELING AGENTS

#### **ULTREZA DBC**

Dye-Bath Conditioner having sequestering, dispersing and levelling properties required for reactive dyeing.

#### **ULTREZA RLA**

Reactive Leveling agent having excellent electrolyte stability required for cotton dyeing.



### ADDITIVES

#### **NEUTRASSIST CAN**

Core Alkali Neutralizer to be used for neutralization of fabrics.

#### **NEUTRASSIST AAS**

Acetic Acid Substitute, for all stages of wet-processing.

#### **NEUTRASSIST OXD**

Stabilized oxidising agent for Sulphur dyeing.

#### **NEUTRASSIST RED**

Reducing agent for Sulphur dyeing.



### WASHING-OFF AGENTS

#### **EVORAN DSP**

Dispersing, Sequestering Polymeric washing-off agent that removes unfixed/hydrolyzed reactive dyes & prevents back-staining.



### **DYE-FIXING AGENTS**

#### **VEROFIXAN DFR**

Dye-Fixing agent for Reactive dyes.

#### **VEROFIXAN NFDF**

Non-Formaldehyde Dye-Fixing agent for reactive dyes.



### LUBRICATING AGENTS

#### **LUBATEX CON**

Lubricating coning oil for synthetic filament yarn for texturising in textile industry.



### FINISHING AGENTS

#### **INVASOFT CS**

Cationic softener for premium softness for all types of fibers.

#### **INVASOFT NS**

Non-ionic softener for non-yellowing effects on whites.

#### **INVASOFT PWE**

Polyethylene wax emulsion for improving the tear-strength, tensile-strength and abrasion resistance properties.

#### **INVASOFT YL**

Yarn Lubricant for improving gliding properties of yarns.

#### **INVASOFT STL**

Thread lubricant for kiss roll application on yarns/threads.

#### **INVASOFT SEW**

Sewability improver for textile fabrics.





### SILICONE SOFTENERS

#### **INVASOFT MAF**

Mono-amino Functional Silicone for soft, silky handle on all types of fabric.

#### **INVASOFT SAR**

Silicone Amino Reactive, having dual properties of softness and lubricity.

#### **INVASOFT JSS**

Jet Stable Silicone for super soft handle having resin compatibility & shear stability.

#### **INVASOFT NYS**

Non-yellowing Silicone softener for bleached/white fabrics.

#### **INVASOFT EPS**

Epoxy Polyether Silicone for hydrophilicity and lubricity.



### SPECIALTY SOFTENERS

#### **INVASOFT NSPE**

Non-ionic Speciality softener for inner softness and improving tear strength and tensile strength of white fabrics.

#### **INVASOFT CSPE**

Cationic Speciality softener for inner softness and improving abrasion resistance properties of dyed fabrics.

#### **INVASOFT NSSW**

Non-ionic Speciality silicone softener for inner softness and surface feel on white fabrics.

#### **INVASOFT CSSD**

Cationic Speciality silicone softener for inner softness and bouncy feel on dyed fabrics.



### **OPTICAL BRIGHTENING AGENTS**

#### STALWPHOR HCR

OBA having high affinity for cellulosic to impart reddish shade.

### STALWPHOR HCN

OBA having high affinity for cellulosic to impart neutral shade.

#### STALWPHOR HCB

OBA having high affinity for cellulosic to impart bluish shade.

#### STALWPHOR MCR

OBA having medium affinity for cellulosic to impart reddish shade.

#### STALWPHOR MCN

OBA having medium affinity for cellulosic to impart neutral shade.

#### STALWPHOR MCB

OBA having medium affinity for cellulosic to impart bluish shade.

#### STALWPHOR LCN

OBA having low affinity for cellulosic to impart neutral shade.





### **SEQUESTERING AGENTS**

#### **NEOQUEST PP**

Protonic Pretreatment agent & acid de-mineralizer for cellulosic fibers, having versatile properties of sequestering, neutralizing etc.

#### **NEOQUEST HRS**

Hardness Removing Sequesterant for chelating Iron and calcium present in water.

#### **NEOQUEST PCS**

Protective Colloidal Sequesterant having in-built leveling properties for uniform dyeing.

### **NEOQUEST USP**

Universal Sequesterant Polymer having hardness removing and protective colloidal properties.

#### **NEOQUEST PSS**

Peroxide Stabilizer & Sequesterant suitable for combined scouring & bleaching of cellulosics.



### **WETTING AGENTS**

#### **VERSETOL WAA**

Wetting Agent Anionic for rapid penetration in fabric.

#### **VERSETOL NPA**

Nonionic Penetrating agent used for wetting in all stages of processing.

#### **VERSETOL NHT**

Anionic wetting and swelling agent suitable for all stages of wet processing.

#### **VERSETOL DAW**

Deaerating and wetting agent for all stages of wet processing.



### **DETERGENTS**

#### **EVOSURF NDC**

Non-ionic Detergent for Cellulosic having very good emulsifying properties required for scouring.

#### **EVOSURF DLF**

Detergent Low-Foaming having very good wetting, emulsifying and rewetting properties for scouring of cellulosic.

#### **EVOSURF ZFD**

Zero Foaming Detergent, free from silicones, having very good wetting, emulsifying and re-wetting properties, especially designed for Jet/high turbulence machines.





### DETERGENTS

#### **EVOSURF CBD**

Clay based scouring, wetting and bleaching agent for wet textile processing.

#### **EVOSURF MFD**

Multi-Functional Detergent having in-built properties of sequestering and peroxide stabilizing, for one bath scouring and bleaching of cotton.

#### **EVOSURF ADSR**

Anionic detergent cum Stain Remover for one bath scouring and bleaching of cotton woven and knit fabric.

#### **EVOSURF OSRHCD**

Oil stain remover for degreasing and removal of stubborn stains from cellulosic fibres.

#### **EVOSURF NDSR**

Non-ionic Detergent cum Stain Remover for cellulosic and polyester & their blends in woven and knitted form.

#### **EVOSURF FBOL**

Powerful wetting agent and detergent with an emulsifying action for removing oil, fatty and waxy impurities.

### PEROXIDE STABILISER

#### **OXYSTAB IPS**

Inorganic Peroxide Stabilizer, having good alkaline & temperature stability.

#### **OXYSTAB OPS**

Organic Peroxide Stabilizer to be used for bleaching of cellulosic fibers.



### **ENZYMES**

#### PROTOZYME CPK

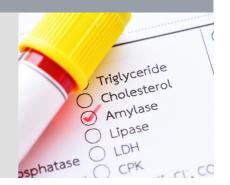
Catalase enzyme for removal of peroxide after bleaching.

#### PROTOZYME BPA

Bio-Polishing Acid enzyme for finishing of cellulosic knit fabrics.

#### PROTOZYME BPN

Bio-Polishing Neutral enzyme for finishing of cellulosic knit fabrics.



### **DISPERSING & LEVELING AGENTS**

#### **ULTREZA DBC**

Dye-Bath Conditioner having sequestering, dispersing and levelling properties required for reactive dyeing.

#### **ULTREZA RLA**

Reactive Leveling agent having excellent electrolyte stability required for cotton dyeing.



### ADDITIVES

#### **NEUTRASSIST CAN**

Core Alkali Neutralizer to be used for neutralization of fabrics.

#### **NEUTRASSIST AAS**

Acetic Acid Substitute, for all stages of wet-processing.

#### **NEUTRASSIST OXD**

Stabilized oxidising agent for Sulphur dyeing.

#### **NEUTRASSIST RED**

Reducing agent for Sulphur dyeing.



### WASHING-OFF AGENTS

#### **EVORAN DSP**

Dispersing, Sequestering Polymeric washing-off agent that removes unfixed/hydrolyzed reactive dyes & prevents back-staining.



### **DYE-FIXING AGENTS**

#### **VEROFIXAN DFR**

Dye-fixing agent for reactive dyes.

#### **VEROFIXAN NFDF**

Non-formaldehyde dye-fixing agent for reactive dyes.





### LUBRICANTS

#### LUBATEX ACA

Anti-creasing Agent for reducing chafe marks and rope marks.

#### **LUBATEX KNT**

Knitting Oil for lubrication of knitted fabrics



### FINISHING AGENTS

#### **INVASOFT CS**

Cationic softener for premium softness for all types of fibers.

#### **INVASOFT NS**

Non-ionic softener for non-yellowing effects on whites.



### SILICONE SOFTENERS

#### **INVASOFT DAF**

Di-amino Functional Silicone for all types of woven and knitted fabrics.

#### **INVASOFT MAF**

Mono-amino Functional Silicone for soft, silky handle on all types of fabric.

#### **INVASOFT SAR**

Silicone Amino Reactive, having dual properties of softness and lubricity.

#### **INVASOFT JSS**

Jet Stable Silicone for super soft handle having resin compatibility & shear stability.

#### **INVASOFT SRS**

Soil Release Silicone to provide soft, silky and full handle to fabrics treated with fluorocarbon soil release agents.

#### **INVASOFT NYS**

Non-yellowing Silicone softener for bleached/ white fabrics.

#### **INVASOFT EPS**

Epoxy Polyether Silicone for hydrophilicity and lubricity.



### **SPECIALTY SOFTENERS**

#### **INVASOFT NSPE**

Non-ionic Speciality softener for inner softness and improving tear strength and tensile strength of white fabrics.

#### **INVASOFT CSPE**

Cationic Speciality softener for inner softness and improving abrasion resistance properties of dyed fabrics.

#### **INVASOFT NSSW**

Non-ionic Speciality silicone softener for inner softness and surface feel on white fabrics.

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Cationic Speciality silicone softener for inner softness and bouncy feel on dyed fabrics.





### **OPTICAL BRIGHTENING AGENTS**

#### STALWPHOR HCR

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OBA having medium affinity for cellulosic to impart bluish shade.

#### STALWPHOR LCN

OBA having low affinity for cellulosic to impart neutral shade.





### PRINTING CHEMICALS

#### STALWPRINT HVRT

High viscosity reactive printing thickener.

### STALWPRINT RPT

Reactive printing thickener.

#### STALWPRINT PPT

Pigment printing thickener.

#### STALWPRINT PPB

Low formaldehyde Pigment printing Binder.

#### STALWPRINT FB

APEO free and formaldehyde free acrylic emulsion.

#### STALWPRINT PPS

Softening agent for pigment printing for soft handle.

#### STALWPRINT CL-NF

Formaldehyde free cross-linking agent, applicable for OEKO TEX.

#### STALWPRINT CL-LF

Formaldehyde based cross linking agent.

#### STALWPRINT KB

APEO free Khadi with excellent elasticity.





### SEQUESTERING AGENTS

#### **NEOQUEST PP**

Protonic Pretreatment agent & acid de-mineralizer for cellulosic fibers, having versatile properties of sequestering, neutralizing etc.

#### **NEOQUEST HRS**

Hardness Removing Sequesterant for chelating Iron and calcium present in water.

#### **NEOQUEST PCS**

Protective Colloidal Sequesterant having in-built levelling properties for uniform dyeing.

#### **NEOQUEST USP**

Universal Sequesterant Polymer having hardness removing and protective colloidal properties.

#### **NEOQUEST PSS**

Peroxide Stabilizer & Sequesterant suitable for combined scouring & bleaching of cellulosics.



### WETTING AGENTS

#### **VERSETOL WAA**

Wetting Agent Anionic for rapid penetration in fabric.

#### **VERSETOL NPA**

Nonionic Penetrating agent used for wetting in all stages of processing.

#### **VERSETOL MWA**

Mercerising wetting agent for mercerization of woven fabric.

#### **VERSETOL NHT**

Anionic wetting and swelling agent suitable for all stages of wet processing.

#### **VERSETOL DAW**

Deaerating and wetting agent for all stages of wet processing.



### DETERGENTS

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#### **EVOSURF DLF**

Detergent Low-Foaming having very good wetting, emulsifying and rewetting properties for scouring cellulosic.

#### **EVOSURF CBD**

Clay based scouring, wetting and bleaching agent for wet textile processing.





### **DETERGENTS**

#### **EVOSURF ADSR**

Anionic detergent cum Stain Remover for one bath scouring and bleaching of cotton woven and knit fabric.

#### **EVOSURF OSR**

Oil stain remover for degreasing and removal of stubborn stains from

#### **EVOSURF NDSR**

Non-ionic Detergent cum Stain Remover for cellulosics and polyester & their blends in woven and knitted form.

#### **EVOSURF MFD**

Multi-Functional Detergent having in-built properties of sequestering and peroxide stabilizing, for one bath scouring and bleaching of cotton.

#### **EVOSURF ASD**

Alkaline Stable Detergent for alkaline boiling-off and de-sizing of woven fabrics.

#### **EVOSURF FBOL**

Powerful wetting agent and detergent with an emulsifying action for removing oil, fatty and waxy impurities.



### PEROXIDE STABILISER

#### **OXYSTAB IPS**

Inorganic Peroxide Stabilizer, having good alkaline & temperature stability.

#### **OXYSTAB OPS**

Organic Peroxide Stabilizer to be used for bleaching of cellulosic fibers.



### **ENZYMES**

#### PROTOZYME ADS

Amylase Desizing Enzyme for removal of starch on cellulosic.

#### PROTOZYME CPK

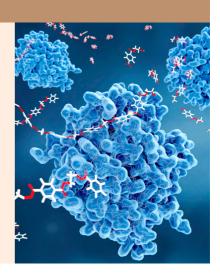
Catalase enzyme for removal of peroxide after bleaching.

#### PROTOZYME BWA

Bio-Washing Acid enzyme for finishing of woven cotton and denim garments.

#### PROTOZYME BWN

Bio-Washing Neutral enzyme for finishing of woven cotton and denim garments.



### DISPERSING & LEVELING AGENTS

#### **ULTREZA DBC**

Dye-Bath Conditioner having sequestering, dispersing and levelling properties required for reactive dyeing.

#### **ULTREZA RLA**

Reactive Leveling agent having excellent electrolyte stability required for cotton dyeing.



### ADDITIVES

### **NEUTRASSIST CAN**

Core Alkali Neutralizer to be used for neutralization of fabrics.

#### **NEUTRASSIST AAS**

Acetic Acid Substitute, for all stages of wet-processing.

#### **NEUTRASSIST OXD**

Stabilized oxidising agent for Sulphur dyeing.

#### **NEUTRASSIST RED**

Reducing agent for Sulphur dyeing.



### WASHING-OFF AGENTS

#### **EVORAN DSP**

Dispersing, Sequestering Polymeric washing-off agent that removes unfixed/hydrolyzed reactive dyes & prevents back-staining.



### DYE-FIXING AGENTS

#### **VEROFIXAN DFR**

Dye-Fixing agent for Reactive dyes.

#### **VEROFIXAN NFDF**

Non-Formaldehyde Dye-Fixing agent for reactive dyes.



### LUBRICANTS

#### LUBATEX ACA

Anti-creasing Agent for reducing chafe marks and rope marks.





### FINISHING AGENTS

#### **INVASOFT CS**

Cationic softener for premium softness for all types of fibers.

#### **INVASOFT NS**

Non-ionic softener for non-yellowing effects on whites.

#### **INVASOFT PWE**

Polyethylene Wax Emulsion for improving the tear-strength, tensile-strength and abrasion resistance properties.

#### **INVASOFT SEW**

Sewability improver for textile fabrics.



### SILICONE SOFTENERS

#### **INVASOFT DAF**

Di-amino Functional Silicone for all types of woven and knitted fabrics.

#### **INVASOFT MAF**

Mono-amino Functional Silicone for soft, silky handle on all types of fabric

#### **INVASOFT SAR**

Silicone Amino Reactive, having dual properties of softness and lubricity.

#### **INVASOFT JSS**

Jet Stable Silicone for super soft handle having resin compatibility & shear stability.

#### **INVASOFT SRS**

Soil Release Silicone to provide soft, silky and full handle to fabrics treated with fluorocarbon soil release agents.

#### **INVASOFT NYS**

Non-yellowing Silicone softener for bleached/ white fabrics.

#### **INVASOFT EPS**

Epoxy Polyether Silicone for hydrophilicity and lubricity.



### SPECIALTY SOFTENERS

#### **INVASOFT NSPE**

Non-ionic Speciality softener for inner softness and improving tear strength and tensile strength of white fabrics.

#### **INVASOFT CSPE**

Cationic Speciality softener for inner softness and improving abrasion resistance properties of dyed fabrics.

#### **INVASOFT NSSW**

Non-ionic Speciality silicone softener for inner softness and surface feel on white fabrics.

#### **INVASOFT CSSD**

Cationic Speciality silicone softener for inner softness and bouncy feel on dyed fabrics.



### OPTICAL BRIGHTENING AGENTS

#### STALWPHOR HCR

OBA having high affinity for cellulosic to impart reddish shade.

#### STALWPHOR HCN

OBA having high affinity for cellulosic to impart neutral shade.

#### STALWPHOR HCB

OBA having high affinity for cellulosic to impart bluish shade.

#### STALWPHOR MCR

OBA having medium affinity for cellulosic to impart reddish shade.

#### STALWPHOR MCN

OBA having medium affinity for cellulosic to impart neutral shade.

#### STALWPHOR MCB

OBA having medium affinity for cellulosic to impart bluish shade.

#### STALWPHOR LCN

OBA having low affinity for cellulosic to impart neutral shade.





### PRINTING CHEMICALS

#### STALWPRINT HVRT

High viscosity reactive printing thickener.

#### STALWPRINT RPT

Reactive printing thickener.

#### STALWPRINT PPT

Pigment printing thickener.

#### STALWPRINT PPB

Low formaldehyde Pigment printing Binder.

### STALWPRINT FB

APEO free and formaldehyde free acrylic emulsion.

#### STALWPRINT PPS

Softening agent for pigment printing for soft handle.

#### STALWPRINT CL-NF

Formaldehyde free cross-linking agent, applicable for OEKO TEX.

#### STALWPRINT CL-LF

Formaldehyde based cross linking agent.

#### STALWPRINT KB

APEO free Khadi with excellent elasticity.





### **SEQUESTERING AGENTS**

#### **NEOQUEST HRS**

Hardness Removing Sequesterant for chelating Iron and calcium present in water.



### **WETTING AGENTS**

#### **VERSETOL WAA**

Wetting Agent Anionic for rapid penetration in fabric.

#### **VERSETOL NPA**

Nonionic Penetrating agent used for wetting in all stages of processing.

#### **VERSETOL NHT**

Anionic wetting and swelling agent suitable for all stages of wet processing.

#### **VERSETOL DAW**

Deaerating and wetting agent for all stages of wet processing.



### **DETERGENTS**

#### **EVOSURF CBD**

Clay based scouring, wetting and bleaching agent for wet textile processing.

#### **EVOSURF ADSR**

Anionic detergent cum Stain Remover for one bath scouring and bleaching of cotton woven and knit fabric.

#### **EVOSURF OSR**

Oil stain remover for degreasing and removal of stubborn stains from cellulosic fibres.

#### **EVOSURF NDSR**

Non-ionic Detergent cum Stain Remover for cellulosics and polyester & their blends in woven and knitted form.

#### **EVOSURF FBOL**

Powerful wetting agent and detergent with an emulsifying action for removing oil, fatty and waxy impurities.





# **DISPERSING & LEVELING AGENTS**

#### **ULTREZA DISP**

Dispersing agent for complete dispersion of disperse dyes in polyester dyeing.

#### ULTREZA LP

Leveling agent for Polyester dyeing.

#### **ULTREZA DLP**

Dispersing and Leveling agent for Polyester dyeing.

#### **ULTREZA LAN**

Leveling Agent for Nylon dyeing.

#### **ULTREZA CPD**

Carrier for Polyester dyeing.

#### **ULTREZA DALP**

Diffusion Accelerator and Leveling for Polyester dyeing.

#### **ULTREZA LMC**

Levelling agent for 1:2 metal complex dyes in the dyeing of wool, silk & nylon.

#### **ULTREZA PES**

Polyester levelling agent not only covers the barriness but also promotes the migration thereby achieving level dyeings.

#### **ULTREZA CRA**

Cationic Retarding Agent for use with cationic dyestuffs in the dyeing of acrylic fibres.

#### **ULTREZA OR**

Oligomer removal during dyeing polyester with disperse dyes



# **ADDITIVES**

# **NEUTRASSIST ABD**

Acid Buffer cum Dispersant, to be used in polyester dyeing.

#### **NEUTRASSIST UBS**

Universal Buffer having excellent buffering capacity required for Synthetics.

#### **NEUTRASSIST ADN**

Acid Donor having excellent buffering capacity required for Nylon dyeing.

#### **NEUTRASSIST AAS**

Acetic Acid Substitute, for all stages of wet-processing.



# WASHING-OFF AGENTS

#### **EVORAN RC-ALK**

Reduction Clearing agent after dyeing/ printing on polyester in alkaline medium.

#### **EVORAN RC-ACD**

Reduction Clearing agent for disperse dyeing in acidic medium.

#### **EVORAN SAN**

Soaping agent for dyeing & printing on nylon, wool & silk.

#### **EVORAN SPP**

Soaping agent for polyester prints.



# DYE-FIXING AGENTS

#### **VEROFIXAN FAN**

Fixing agent for nylon.

#### **VEROFIXAN LAP**

Fixation accelerator for prints on polyester with disperse dyes when fixing with superheated steam.



# FINISHING AGENTS

#### **INVASOFT NS**

Non-ionic softener for non-yellowing effects on whites.

#### **INVASOFT ES**

Elastomeric Softener for producing full and bulky handle on synthetics.

#### **INVASOFT PWE**

Polyethylene Wax Emulsion for improving the tear-strength, tensile-strength and abrasion resistance properties.

#### **INVASOFT YL**

Yarn Lubricant for improving gliding properties of yarns.

#### **INVASOFT STL**

Thread lubricant for kiss roll application on yarns/threads.





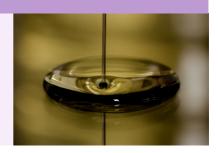
# LUBRICANTS

#### LUBATEX ACA

Anti-creasing Agent for reducing chafe marks and rope marks.

#### **LUBATEX CON**

Lubricating coning oil for synthetic filament yarn for texturizing in textile industry.



# > SILICONE SOFTENERS

#### **INVASOFT MAF**

Mono-amino Functional Silicone for soft, silky handle on all types of fabric.

#### **INVASOFT SAR**

Reactive amino silicone, having dual properties of softness and lubricity.

#### **INVASOFT SRS**

Soil Release Silicone to provide soft, silky and full handle to fabrics treated with fluorocarbon soil release agents.

#### **INVASOFT NYS**

Non-yellowing Silicone softener for bleached/ white fabrics.

#### **INVASOFT EPS**

Epoxy Polyether Silicone for hydrophilicity and lubricity.



# SPECIALTY SOFTENERS

#### **INVASOFT NSPE**

Non-ionic Speciality softener for inner softness and improving tear strength and tensile strength of white fabrics.

#### **INVASOFT CSPF**

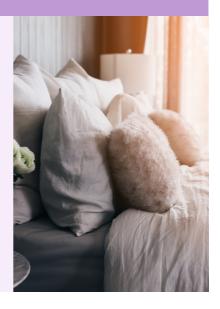
Cationic Speciality softener for inner softness and improving abrasion resistance properties of dyed fabrics.

#### **INVASOFT NSSW**

Non-ionic Speciality silicone softener for inner softness and surface feel on white fabrics.

#### **INVASOFT ESSY**

Elastomeric Silicone softener for producing full and bulky feel on polyester and nylon.



# OPTICAL BRIGHTENING AGENTS

#### STALWPHOR PR

OBA for polyester fibres to impart reddish shade.

#### STALWPHOR PN

OBA for polyester fibres to impart neutral shade.

#### STALWPHOR PB

OBA for polyester fibres to impart bluish shade.

#### STALWPHOR PAR

OBA for polyamide fibres to impart reddish shade.

#### STALWPHOR PAN

OBA for polyamide fibres to impart neutral shade.

#### STALWPHOR PAB

OBA for polyamide fibres to impart bluish shade.



# PRINTING CHEMICALS

#### STALWPRINT SPT

Synthetic printing thickener.

#### STALWPRINT PPT

Pigment printing thickener.

#### STALWPRINT PPB

Low formaldehyde Pigment printing Binder.

#### STALWPRINT FB

APEO free and formaldehyde free acrylic emulsion.

#### STALWPRINT PPS

Softening agent for pigment printing for soft handle.

#### STALWPRINT CL-NF

Formaldehyde free cross-linking agent, applicable for OEKO TEX.

#### STALWPRINT CL-LF

Formaldehyde based cross linking agent.

#### STALWPRINT KB

APEO free Khadi with excellent elasticity.





### SEQUESTERING AGENTS

#### **NEOQUEST HRS**

Hardness Removing Sequesterant for chelating Iron and calcium present in water.

#### **NEOQUEST PCS**

Protective Colloidal Sequesterant having in-built leveling properties for uniform dyeing.

#### **NEOQUEST USP**

Universal Sequesterant Polymer having hardness removing and protective colloidal properties.

#### **NEOQUEST PSS**

Peroxide Stabilizer & Sequesterant suitable for combined scouring & bleaching of cellulosics



# WETTING AGENTS

#### **VERSETOL WAA**

Wetting Agent Anionic for rapid penetration in fabric.

#### **VERSETOL NPA**

Nonionic Penetrating agent used for wetting in all stages of processing.

#### VERSETOL NHT

Anionic wetting and swelling agent suitable for all stages of wet processing.

#### **VERSETOL DAW**

Deaerating and wetting agent for all stages of wet processing.



# DETERGENTS

#### **EVOSURF NDC**

Non-ionic Detergent for Cellulosic having very good emulsifying properties required for scouring.

#### **EVOSURF DLF**

Detergent Low-Foaming having very good wetting, emulsifying and rewetting properties for scouring of cellulosic.

#### **EVOSURF ZFD**

Zero Foaming Detergent, free from silicones, having very good wetting, emulsifying and re-wetting properties, especially designed for Jet/high turbulence machines.

#### **EVOSURF CBD**

Clay based scouring, wetting and bleaching agent for wet textile processing.





# DETERGENTS

#### **EVOSURF MFD**

Multi-Functional Detergent having in-built properties of sequestering and peroxide stabilizing, for one bath scouring and bleaching of cotton

#### **FVOSURF OSR**

Oil stain remover for degreasing and removal of stubborn stains from cellulosic fibres.

#### **EVOSURF NDSR**

Non-ionic Detergent cum Stain Remover for cellulosics and polyester & their blends in woven and knitted form.

#### **EVOSURF FBOL**

Powerful wetting agent and detergent with an emulsifying action for removing oil, fatty and waxy impurities.



# PEROXIDE STABILISER

#### **OXYSTAB IPS**

Inorganic Peroxide Stabilizer, having good alkaline & temperature stability.

#### **OXYSTAB OPS**

Organic Peroxide Stabilizer to be used for bleaching of cellulosic fibers.



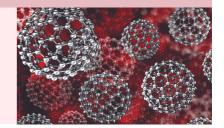
# **ENZYMES**

#### PROTOZYME ADS

Amylase Desizing Enzyme for removal of starch on cellulosic.

#### PROTOZYME CPK

Catalase enzyme for removal of peroxide after bleaching.



# **DISPERSING & LEVELING AGENTS**

#### **ULTREZA DBC**

Dye-Bath Conditioner having sequestering, dispersing and levelling properties required for reactive dyeing.

## ULTREZA RLA

Reactive Leveling agent having excellent electrolyte stability required for cotton dyeing.



# ADDITIVES

#### **NEUTRASSIST CAN**

Core Alkali Neutralizer to be used for neutralization of fabrics.

#### **NEUTRASSIST AAS**

Acetic Acid Substitute, for all stages of wet-processing.



# WASHING-OFF AGENTS

#### **EVORAN DSP**

Dispersing, Sequestering Polymeric washing-off agent that removes unfixed/hydrolyzed reactive dyes & prevents back-staining.



# **DYE-FIXING AGENTS**

#### **VEROFIXAN DFR**

Dye-Fixing agent for Reactive dyes.

#### VEROFIXAN NFDF

Non-Formaldehyde Dye-Fixing agent for reactive dyes.



# FINISHING AGENTS

#### **INVASOFT NS**

Non-ionic softener for non-yellowing effects on whites.

#### **INVASOFT TTS**

Terry towel softener for inner softness and absorbency.



# SILICONE SOFTENERS

#### **INVASOFT NYS**

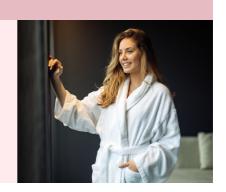
Non-yellowing Silicone softener for bleached/ white fabrics.

### **INVASOFT HYS**

Hydrophilic silicone softener for soft handle on terry towels.

#### **INVASOFT EPS**

Epoxy Polyether Silicone for hydrophilicity and lubricity.





# SPECIALTY SOFTENERS

#### **INVASOFT NSSW**

Non-ionic Speciality silicone softener for inner softness and surface feel on white fabrics.

#### **INVASOFT HSTT**

Hydrophilic Speciality softener for increasing hydrophilicity and imparting super softness on terry towels.



# OPTICAL BRIGHTENING AGENTS

#### STALWPHOR HCR

OBA having high affinity for cellulosic to impart reddish shade.

#### STALWPHOR HCN

OBA having high affinity for cellulosic to impart neutral shade.

#### STALWPHOR HCB

OBA having high affinity for cellulosic to impart bluish shade.

#### STALWPHOR MCR

OBA having medium affinity for cellulosic to impart reddish shade.

#### STALWPHOR MCN

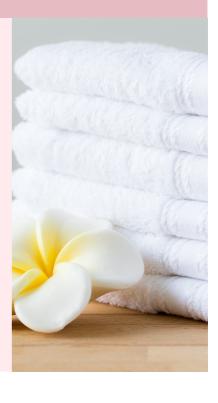
OBA having medium affinity for cellulosic to impart neutral shade.

#### STALWPHOR MCB

OBA having medium affinity for cellulosic to impart bluish shade.

#### STALWPHOR LCN

OBA having low affinity for cellulosic to impart neutral shade.



# DENIM



### SEQUESTERING AGENTS

#### **NEOQUEST HRS**

Hardness Removing Sequesterant for chelating Iron and calcium present in water.

#### **NEOQUEST PCS**

Protective Colloidal Sequesterant having in-built levelling properties for uniform dyeing.

#### **NEOQUEST USP**

Universal Sequesterant Polymer having hardness removing and protective colloidal properties.



# **WETTING AGENTS**

#### **VERSETOL WPD**

Wetting and penetrating agent for cotton denim processing.

#### **VERSETOL NHT**

Anionic wetting and swelling agent suitable for all stages of wet processing.

#### **VERSETOL DAW**

Deaerating and wetting agent for all stages of wet processing.



### **DETERGENTS**

#### **EVOSURF NDC**

Non-ionic Detergent for Cellulosic having very good emulsifying properties required for scouring.

#### **EVOSURF DLF**

Detergent Low-Foaming having very good wetting, emulsifying and rewetting properties for scouring cellulosic.

#### **FVOSURF 7FD**

Zero Foaming Detergent, free from silicones, having very good wetting, emulsifying and re-wetting properties, especially designed for Jet/high turbulence machines.

#### **EVOSURF CBD**

Clay based scouring, wetting and bleaching agent for wet textile processing.

#### **EVOSURF ASD**

Alkaline Stable Detergent for alkaline boiling-off and de-sizing of woven fabrics.

#### **EVOSURF OSR**

Oil stain remover for degreasing and removal of stubborn stains from cellulosic fibres.





# DETERGENTS

#### **EVOSURF NDSR**

Non-ionic Detergent cum Stain Remover for cellulosics and polyester & their blends in woven and knitted form.

#### **EVOSURF FBOL**

Powerful wetting agent and detergent with an emulsifying action for removing oil, fatty and waxy impurities.



# **ENZYMES**

#### PROTOZYME ADS

Amylase Desizing Enzyme for removal of starch on cellulosic.

#### PROTOZYME BWA

Bio-Washing Acid enzyme for finishing of woven cotton and denim garments.

#### PROTOZYME BWN

Bio-Washing Neutral enzyme for finishing of woven cotton and denim garments.



# DISPERSING & LEVELING AGENTS

#### **ULTREZA DBC**

Dye-Bath Conditioner having sequestering, dispersing and levelling properties required for reactive dyeing.

#### **ULTREZA ABS**

Anti back staining for denim processing.



# ADDITIVES

# **NEUTRASSIST CAN**

Core Alkali Neutralizer to be used for neutralization of fabrics.

#### **NEUTRASSIST AAS**

Acetic acid substitute, for all stages of wet-processing to control bath pH.



# **FINISHING AGENTS**

#### **INVASOFT CS**

Cationic softener for premium softness for all types of fibers.

#### **INVASOFT PWE**

Polyethylene Wax Emulsion for improving the tear-strength, tensile-strength and abrasion resistance properties.

#### **INVASOFT SEW**

Sewability improver for textile fabrics.



# SILICONE SOFTENERS

#### **INVASOFT DAF**

Di-amino Functional Silicone for all types of woven and knitted fabrics.

#### **INVASOFT MAF**

Mono-amino Functional Silicone for soft, silky handle on all types of fabric.

#### **INVASOFT SAR**

Silicone Amino Reactive, having dual properties of softness and lubricity.

#### **INVASOFT JSS**

Jet Stable Silicone for super soft handle having resin compatibility & shear stability.

#### **INVASOFT SRS**

Soil Release Silicone to provide soft, silky and full handle to fabrics treated with fluorocarbon soil release agents.

#### **INVASOFT EPS**

Epoxy Polyether Silicone for hydrophilicity and lubricity.



# **SPECIALTY SOFTENERS**

#### **INVASOFT CSPE**

Cationic Speciality softener for inner softness and improving abrasion resistance properties of dyed fabrics.

#### **INVASOFT CSSD**

Cationic Speciality silicone softener for inner softness and bouncy feel on dyed fabrics.





# TEXTILE TESTING METHODS BASED ON ISO STANDARD

Within the textile industry, following ISO standards can help to ensure consistent quality of the raw materials being used to make textiles, which in turn improves the final product. Adhering to ISO standards can also help lower operating costs and ensure quality management. Following ISO standards often involves inspection and testing at each stage of a process. For example, raw materials might be tested, then dyed fabrics, and finally finished goods. But ISO standards aren't mandatory. They're guidelines, and some companies only use them for materials and goods that are exported to places like the United States, where strict rules covering textile products and safety concerns are in place.

## Dimensional Stability of Washing (ISO 6330: 2012)

#### **Dimensional Change:**

A generic term for changes in length or width of a specimen subjected to specified conditions

#### **Scope & Principle of the Test:**

This international standard specifies a method for the determination of dimensional change for fabric, garment or other textile articles when subjected to an appropriate combination of specified washing and drying procedure. The specimen is conditioned in the specified standard atmosphere and measured before subjection to the appropriate drying and washing procedure. After washing, drying, conditioning and measuring the specimen, the change in dimension are calculated.

#### Reference Standard & Terminology:

- ISO 6330 Domestic Washing & Drying Procedure.
- ISO 3759 Preparation making & measuring procedure.
- ISO 139 Standard atmosphere for conditioning & testing.



### **Apparatus:**

- Washing machine type A, Horizontal axis front loading type
- Washing machine type B, Vertical axis top loading agitator type
- Washing machine type C, Vertical axis top loading pulsator type
- Automatic Tumble dryers
- Electrically Dry heated flat-bed press
- Line dry facilities
- Conditioning racks
- Domestic iron
- Balance with appropriate measuring capacity
- Dummy load
- Indelible marker







#### **Specimen Preparation:**

- Avoid a minimum of 1m from the end of the roll or piece of goods.
- Avoid a minimum of 150mm of the fabric from each edge.
- Lay flat the sample without any tension before cutting the specimen.
- Specimen size 500mm by 500mm.
- Mark warp direction before cutting out the specimen from the sample.

#### **Conditioning:**

Conditioning specimen at least 4 hours as per ISO 139 prior to making & measuring.

#### **Atmosphere:**

Temp - 20±2 °C & RH 65 ± 4 %

#### **Test Procedure:**

- Weight the specimen and mix sufficient was load to determine the total two kg.
- Place the material to be washed in the washing machine with the dummy load.
- Prepare appropriate dosage of reference detergent.
- Select the washing program to be used for the Type A/Type B/Type C reference washing machine.



# **Drying Process:**

#### Tumble dry:

Clean the filter and place the test specimen and ballast into the dryer and set the desired program and run up to dry.

#### Line Dry:

Hang each specimen by two corners with fabric length in the vertical direction. Hang in still air at room temperature not greater than 26°C until dry.

#### **Drip Dry:**

Hang each dripping wet specimen by two corners with fabric length in the vertical direction. Hang in still air at room temperature not greater than 26°C until dry. For drying procedure of line and Flat do not allow air directly on specimens as it may cause fabric distortion.

#### **Conditioning and Re- Measurement:**

- Conditioning the specimen for a minimum of 4 hours.
- Re-measure and record the distance between benchmarks.

#### Reporting:

The number & year of the international standard.

Dimensional change of length and width separately to the nearest 0.5% with a (-) sign or (+) sign for fabric.

The number of complete washing and drying cycles.

The procedure used for washing & drying from ISO 6330.

# Determination of Fabric Propensity to Surface Fuzzing & to Pilling (Pilling Box Method) (EN ISO 12945-1: 2001)

#### **Pilling Resistance:**

Resistance to the formation of pills on the surface of a textile fabric.

#### Scope & Principle:

This part describes a method for the determination of the resistance to pilling and surface change in textile fabrics. Specimen of the fabric is mounted on polyurethane tubes and tumbled randomly in a cork-lined box at a constant rotational speed. Fuzzing and pilling is assessed visually after a defined period of tumbling.

#### Reference Standard & Terminology:

Fuzzing: Roughing up of the surface fibres and or teasing out of the fibres from the fabric producing visible surface change.

Pill: Entangling of fibres into balls the stand proud not fabric and are of such density that light will not penetrate and will cast a shadow.

### **Apparatus:**

- Pill Testing Machine with Box
- Polyurethane Specimen Tubes (Length 140±1mm, Diameter 31.5±1mm, Thickness: 3.2±1mm, Weight 52.25g±1 g)
- Mounting Zig
- Self-adhesive polyvinyl tape 19mm width
- Sewing Machine
- Viewing Cabinet

# Specimen Preparation:

- Cut 2 specimen length directions and 2 specimen width directions from the sample, each 125mm by 125mm.
- Mark warp direction.
- An additional specimen of the same size is required for assessment.
- Fold it face to face, two lengthwise and two widthwise.
- Sew 12mm from cut edges to form a tube.
- Cut 6mm from each end.
- Using the mounting jig, mount the prepared specimen on each polyurethane tube.
- Apply self-adhesive polyvinyl chloride (PVC) tape around each cut end of specimen and leave 6mm polyurethane tube exposed,
- Length tape on each end shall not exceed approximately 1.5 the circumference of the tube.

## **Conditioning:**

Conditioning specimen at least 16 hours as per ISO 139 after mounting on tubes.

#### Atmosphere:

Temp - 20±2 °C & RH 65 ± 4 %

#### **Test Procedure:**

Clean the inside of the pill testing box and free it from lint. Place the four mounted specimens in the same pill testing box, close and firmly secure the lid. Tumble the tubes in the box for the agreed number of revolutions. Remove the specimens from the box and remove the stitching from the seam.

### **Test Report:**

- Test method and year.
- No. of test specimens and observers.
- No. of revolutions.
- Date of test.
- Final grade assessed and whether it relates to fuzzing or pilling or both.
- Details of any deviation from the procedure.





## **Tear Test of Fabric (ISO 13937-1)**

#### Scope & Principle:

This part of ISO 13937 describes a method known as the ballistic pendulum (Elmendorf) method for the determination of the tear force of textile fabrics. The Specimen is fastened in the clams and the tear is started by cutting a slit in the specimen between and clamps. The pendulum is then released and the specimen is torn completely as the moving jaw moves from the fixed one. The tear force is measured.

#### **Apparatus:**

- Tearing tester
- Different capacity Load
- Conditioning rack
- Calibrated ruler

#### **Conditioning:**

Condition specimen at least 4 hours as per ISO 139

#### Atmosphere:

Temp - 20±2 °C & RH 65 ± 4 %

#### **Specimen Preparation:**

- Avoid fabric selvedge at least 150mm
- Specimen size as er template.
- Take care of aligning the yarns running in a short direction parallel with the die such that when the slit is cut.

#### **Test Procedure:**

- Place the specimen into the jaw and tighten the jaw appropriately.
- Using the built-in knife blade cut a 20mm slit.
- Test the specimen as the required operation.
- Record the result or reading from the scale.
- If the reading is not between 16 to 85 % of the full-scale range, change the load cell appropriately.
- No slippage of the threads out of the fabric.
- No slippage in the jaw.
- The tear is completed, Other results shall be discarded.
- Remove the torn specimen and continue until five tears have been recorded for each test.
- Record the tear force.
- Record if the tear was crosswise, generally it is not applicable but if customers' required so report by mentioning the cross tear.

#### **Test Report:**

- Report the standard name and test method ISO 13937-1.
- Elmendorf tearing strength for each test direction and testing condition, as requested.
- Number of tests rejected because of crosswise tearing.
- For computer-processed data, identify the program (software) used.





#### Tensile Strength Test- Grab Method (ISO 13934-2: 2014)

#### **Scope & Principles:**

This part of ISO 13934 specifies a procedure for the determination of the maximum force of textile fabrics known as the grab test.

A fabric test specimen, gripped in its centre part by jaws of specified dimensions, is extended at a constant rate until it ruptures. The maximum force is recorded.

#### **Apparatus:**

- (CRE,CRL or CRT type)
- Clamps and Jaw Faces
- Cutting device
- Conditioning Racks
- Calibrated Ruler

#### **Conditioning:**

Condition specimen at least 24 hours as per ISO 139

#### Atmosphere:

Temp - 20±2 °C & RH 65 ± 4 %

#### **Specimen Preparation:**

- Avoid fabric selvedge at least 150mm
- Specimen size-200mm by 100mm
- Take specimen diagonally from the fabric
- Specimen 5 for each direction.
- Draw a line at 38mm ± 1mm along the long side of the specimen.

#### **Test Procedure:**

- Front jaw 25mm by 25mm.
- Back jaw 25mm by 50mm.
- Gauge length 100 ± 1mm.
- Test speed 50mm/min
- Mark the inner side of the jaw and observe slippage.
- Record any break within 5 mm of the jaw.

If the specimen slip or break at the edge of or in the jaw and the result falls below the normal average value discard the result and continue another specimen for obtaining the required no of the specimen.

#### **Calculate and Expression of Results:**

Parameter	Result	Rounded to
	< 100 N	Nearest to 1 N
Breaking Force	≥ 100 N to < 1000 N	Nearest to 10 N
	≥ 1000 N	Nearest to 100 N
Specialty	If all the result are jaw break or five normal results can't be obtained than the individual result will be reported,	



#### **Test Report:**

- Reference of the standard
- Sample Identification.
- No. of the test specimen.
- The arithmetic means of the maximum force, in newton.
- Any deviation from the given procedure.

## **Colour Fastness to Rubbing (ISO 105X12:2016)**

#### **Scope and Principle:**

This part of ISO 105 specifies a method for determining the resistance of the colour of textiles of all kinds to rubbing off and staining other material. This method is applicable to textiles made from all fibres in the form of yarn or fabric, including textile floor coverings whether dyed or printed. Two tests may be made; dry and wet rubbing cloth. Specimens of the textile are rubbed with a dry rubbing cloth and with a wet rubbing cloth. The machine provides two combinations of testing conditions through two alternative sizes of rubbing finger, one for pile fabrics; one for a solid colour or large print fabrics.

#### **Apparatus:**

- Crockmeter
- Rectangular Rubbing Finger
- Cotton Rubbing Cloth

### **Specimen Preparation:**

Fabric or Textile floor covering:

- Two pieces of not less than 50 X 140 mm for each dry and wet rubbing (Length & Width direction)
- More specimens can be used for higher precision
- For pile fabric, cut the specimen with the pile lay pointing in the long direction.

#### Yarn:

Form a layer of parallel strands by wrapping it lengthways on a cardboard rectangle of suitable.

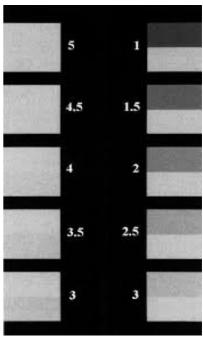
#### **Conditioning:**

Conditioning specimen and crocking cloth at least 4 hours as per ISO 139 prior to marking.

#### Atmosphere:

Temp - 20±2 °C & RH 65 ± 4 %





### **Test Procedure - Dry**

- Place a test specimen on the base of the crock meter.
- Then place the rubbing cloth on the rubbing finger by clip.
- Run the machine for 10 sec or 10 cycles by to and fro motion.
- Open the rubbing cloth from the finger and place a new rubbing cloth for another dry rubbing test.
- Condition the rubbing cloth and remove fibrous material that might interfere with the rating.
- Evaluate the staining by greyscale for staining.

#### **Test Procedure - Wet**

- Weight the conditioned rubbing cloth.
- Soak in grade 3 water, remove excess water and weight again to ensure 95-100% takeup.
- Test by following the dry rubbing test.

#### Assessment:

Back each tested rubbing cloth with three layers of white rubbing cloth while evaluating. Rate dry and wet crocking fastness by means of the grayscale for staining under the suitable illumination and record the numerical rating.

## Reporting:

- Reference to this part of ISO 105-X12
- State whether dry or wet crocking test.
- Finger and force were used in the test.
- Whether dry or wet rubbing was performed along with the percentage of soak.
- Time and atmospheric condition of conditioning.
- Identification of the long direction of the specimen mounting, i.e. warps, weft or oblique.
- The numerical rating.



# **DECLARATION OF CONFORMITY**

We hereby declare that the Textile Chemicals mentioned below, that is manufactured and marketed by Stalwart Advance Material Inds. can be used for Textile Wet-processing and is not restricted as per the European Standards stated herein:

STALWPHOR	EVOSURF	INVASOFT	VEROFIXAN	EVORAN
STALWPRINT	ULTREZA	VERSETOL	PROTOZYME	LUBATEX
	OXYSTAB	NEOQUEST	NEUTRASSIST	

- The products comply with the requirements of Directive 2003/53/EC of the European Parliament and of the Council of 18th June 2003 amending for the 26th time Council Directive 76/769/EEC relating to restrictions on the marketing and use of certain dangerous substances and preparations (APEO).
- The products comply with the conditions of **Standard 100 by Oeko-Tex**, edition 01/2019 which are known to us, with regard to the limit values of substances according to Annex 4 and Annex 6 such as Formaldehyde (free and partially releasable), extractable heavy metals, heavy metals total content, pesticides, chlorinated phenols, phthalates, organic tin compounds, other chemical residues, colourants, chlorinated benzenes and toluenes, PAHs, Biological active products, Flame retardant products, solvent residues, surfactant, wetting agent residues, PFCs, UV stabilizers, chlorinated paraffin, siloxanes, emission of volatiles etc.
- The products satisfy the requirements that are defined in Article 57 of Regulation (EC) No. 1907/2006 ("the **REACH** Regulation") and we also confirm that there is no substance from the SVHC "candidate list" as per REACH definition, present in any of the products mentioned above.
- The products comply with environmental and toxicological criteria mentioned in version 6.0 Scope 4 of Global Organic Textile Standard (**GOTS**).
- The products fulfil the requirements for textile materials regarding the chemical content stated in section 2.3 of IOS-MAT-0010, Edition 14 of **IKEA** standards.
- The products comply with the requirements of **Bluesign**, Level 3 of the Zero Discharge of Hazardous Chemicals Gateway (**ZDHC**).



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