

**TEXTILE
SOLUTIONS.**

**Textile
Auxiliary
Solutions.**

CHT

**SMART CHEMISTRY
WITH CHARACTER.**

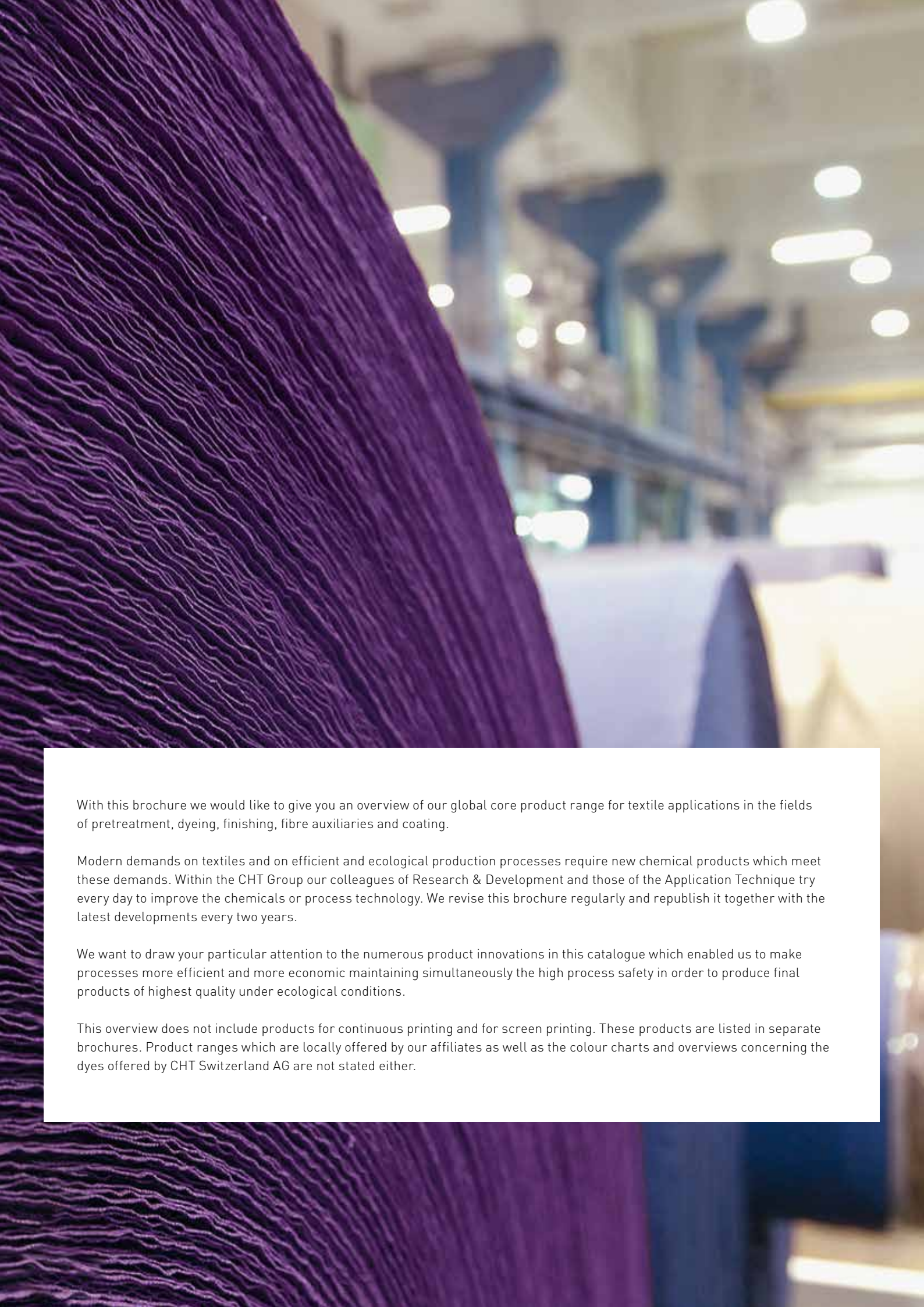


TEXTILE AUXILIARIES – OUR COMPETENCE FOR YOUR SUCCESS

CORE RANGE CATALOGUE OF THE CHT GROUP

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With this brochure we would like to give you an overview of our global core product range for textile applications in the fields of pretreatment, dyeing, finishing, fibre auxiliaries and coating.

Modern demands on textiles and on efficient and ecological production processes require new chemical products which meet these demands. Within the CHT Group our colleagues of Research & Development and those of the Application Technique try every day to improve the chemicals or process technology. We revise this brochure regularly and republish it together with the latest developments every two years.

We want to draw your particular attention to the numerous product innovations in this catalogue which enabled us to make processes more efficient and more economic maintaining simultaneously the high process safety in order to produce final products of highest quality under ecological conditions.

This overview does not include products for continuous printing and for screen printing. These products are listed in separate brochures. Product ranges which are locally offered by our affiliates as well as the colour charts and overviews concerning the dyes offered by CHT Switzerland AG are not stated either.

OUR TEXTILE COMPETENCE

The CHT Group: Partner of the textile industry

The CHT Group is a globally operating group of companies and manufacturer of specialty chemicals with its own production, sales and distribution sites in all important textile countries. Our corporate action is focussed on proximity to our customers, comprehensive service, excellent product quality as well as a consistent effort for further product development. As partner of the textile industry we offer an extensive range of high quality auxiliaries and colours for the whole textile chain – our products will accompany you from fibre to ready-made textile.

Our textile competence is based on years of experience and a comprehensive knowledge of our staff members. Our customers profit from this throughout all finishing steps. For each customer in each segment system solutions are worked out individually being adapted to any specific production process. With highly qualified technicians we make points by directly responding to specific demands in all our markets. Our competence will help you succeed in business.

In addition to traditional textile finishing we see ourselves as strategic partners for your future development. Our highly qualified staff face daily new demands in order to be one step ahead of upcoming market needs and to be able to consistently provide you with new ideas and stimuli. In the field of technical textiles we already today perform dynamic research and development work to find solutions for your tomorrows' demands.

Besides ecological systems and products sustainability is first of all found in the economy of production processes. Together with you we always work on optimisation of finishing processes and applied chemicals. The benefit for all of us is a saving of all resources such as water, energy, time and cost.

The sense of responsibility of the CHT Group is also reflected by its commitment to act in terms of the initiative for "Responsible Care". We are supporters of bluesign and OEKO-TEX® Standard 100 as well as the GOTS certification. One of our key projects is the fulfilment of REACH regulation according to the back ground of the new European Chemicals Act.



PRETREATMENT

KEY

a = anionic	pow = powder
n = non-ionic	pas = low-viscosity paste
c = cationic	o = not specified
liq = liquid	d = amphoteric
disc = discontinue	cont = continue

DESIZING AGENTS AND ENZYMES

	Ionic character Appearance	Desizing at:		Notes
		40 – 70°C	70 – 98°C	
BEISOL DO CONC.	o-pow	x		desizing agent with oxidative effect, suitable for alkaline pretreatment and cold bleach
BEISOL PES	c-liq			special product for removing PES size in alkaline and strongly alkaline treatment liquors and for peeling PES
BEISOL PRO	o-liq			enzyme mix with best effectiveness at pH 8 – 9, giving an improved absorbency by its cleaning effect, and depending on the kind of cotton an alkaline scouring becomes dispensable
BEISOL SED	o-liq	x	x	highly concentrated bacteria amylase for all temperature ranges
BEISOL T 2090	o-liq	x	x	universal bacteria amylase for all temperature ranges

SEQUESTERING AGENTS

	Particularly against alkaline earths	Particularly against heavy metals	High silicate dispersing power	For dyeing liquors with metalliferous dyes	Acid demineralisation	Alkaline scouring	Peroxide bleach	Chemical base
BEIXON AB 200%	x		x	x	x with acid		x	saccharide/acrylate copolymer, biodegradable
BEIXON Q	x							polycarboxylic acids and special polymers
HEPTOL B 81 200%	x	x	x	x			x	acrylate copolymer, concentrated product
HEPTOL EMG	x	x			x			phosphonates
HEPTOL ESW	x	x				x	x	phosphonates
HEPTOL KEB	x	x	x			x	x	phosphonates
HEPTOL NWS	x			x				polymeric carboxylic acid, containing polyphosphate
HEPTOL SF 4	x	x	x	x		x	x	phosphonates

BLEACHING AGENTS

STABILISERS FOR THE PEROXIDE BLEACH OF CELLULOSE FIBRES AND THEIR BLENDS

	Ionic character Appearance	Discontinuous processes	Continuous process				
			Cold bleach pad steam Pad roll	Under-liquor systems	For Co with high degree of hardness	Silicate-free processes	Processes containing silicate
CONTAVAN GAL	a-liq	x	x			x	
CONTAVAN ICE	a-liq	x	x	x	x	x	x
CONTAVAN TIG	a-liq	x	x	x	x	x	x
CONTAVAN VAN	a-liq	x	x	x		x	
TUBOTEX NCD	a-pow	x	combination product, contains all necessary bleaching chemicals except peroxide				
VARIO BLEACH 3E	a-liq	x	temperature range 60 – 110°C				
VISCAVIN CCP*	a-liq	x	x			x	
VISCAVIN GFN**	a/n-liq	x	peroxide stabiliser containing surfactant with sequestering power				

* surfactant-containing peroxide stabilizing agent with sequestering properties

** also for the one-bath bleaching and dyeing with direct dyes

STABILISERS FOR THE CHLORITE BLEACH

	Ionic character Appearance	Chemical base
CONTAVAN CLO PLV	a-pow	buffer mix

ACTIVATORS FOR THE NEUTRAL BLEACH

	Ionic character Appearance	Application fields
CHT-AKTIVATOR FBA	o-liq	activator for the neutral peroxide bleach
CHT-PUFFER FBA	o-liq	buffering agent for optimising the bleach with CHT-AKTIVATOR FBA

SCOURING AGENTS

	Ionic character Appearance	Application fields
SUBITOL AS 6	a-liq	anionic wetting agent and detergent very stable to alkali

WASHING AGENTS

					Application fields		Special applications
	Ionic character	Oil removal	Gelling phase*	NaOH stability	Discontinuous process	Continuous process	
FELOSAN FDO NEU	n	xx	yes		x	x	special product for oil removal
FELOSAN FOX	n	x	no	x	xx	xx	low foaming detergent
FELOSAN JET	a/n	x	yes	x	x	xx	universal washing agent
FELOSAN NFG	n	xx	no		xx	x	low foaming washing agent especially for discontinuous processes
FELOSAN NKB	n	xx	no	x	x	xx	low foaming washing agent especially for continuous processes
FELOSAN RG-N	n	xx	yes	x	x	xx	universal washing agent with excellent oil emulsifying power
FELOSAN RIZ 40	n	xx	no	x	x	x	emulsifier and washing agent for spin finishes
FELOSAN RNF	n	x	no		xx		also applicable as wetting agent for carbonizing

* important on dosage plants with water supply when rinsing the pipeline

xx recommended – very good
x suitable – good

STAIN REMOVERS

	Ionic character Appearance	Chemical base
FELOSAN FDO NEU	n-fl	terpene hydrocarbon with emulsifiers
FELOSAN RG-N	n-fl	fatty alcohol ethoxylates

MERCERISATION AND CAUSTICISATION AGENTS

	Ionic character Appearance	Application fields
SUBITOL HPM	a-liq	sulphated alcohols, wetting agent for mercerisation and caustic treatment low foaming, suitable for caustic recovery

CARBONISING AGENTS

	Ionic character Appearance	Application fields
FELOSAN RNF	n-liq	modified ethoxylates, low foaming wetting and washing agent

FIBRE PROTECTIVE AGENTS

	Ionic character Appearance	Application fields
TUBOSET DAP	n-liq	surfactant/antioxidant to reduce the tendency to yellow polyamide fibres during thermofixing
TUBOSET LVI	a-liq	special product to prevent phenolic yellowing
TUBOSET NOX 300	o-liq	special product for minimizing nitrogen oxide yellowing of optically brightened and dyed cellulose articles
TUBOSET PAP	n-liq	fibre protection agent to prevent the oxidative damaging of PA fibres during a peroxide bleach
TUBOSET SAM	n-pow	antioxidant blocker for thermofixing and moulding of polyamide and its blend
TUBOSET SML	n-liq	antioxidant to reduce the yellowing tendency during heatsetting and moulding of polyamide

OPTICAL BRIGHTENERS

	Ionic character Appearance	Fibres				Application and properties						
		CEL	Ker- atin	Poly- amide	PES triacetate	White shade on fabric	Affinity	Peroxide bleach	Reductive bleach	Chlorite bleach	Exhaust process	Padding
TUBOBLANC BL *	a-liq	x	x	x		neutral to slightly reddish	n (CO) h (PA)	x ⁽²⁾	x		x ⁽¹⁾	x
TUBOBLANC COL	a-pow	x	x	x		blue-violet	h	x ⁽²⁾	x ⁽²⁾		x ⁽⁴⁾	
TUBOBLANC CRL **	a-liq	x	x	x		reddish	n (CO) h (PA)	x	x	x	x	x
TUBOBLANC DIK	a-liq	x				neutral to bluish	n – m	x	x		x ⁽¹⁾	x
TUBOBLANC EBF	n-liq				x	bluish		x ⁽³⁾	x	x	x	x
TUBOBLANC ERN	n-liq				x	reddish		x ⁽³⁾	x	x	x	x
TUBOBLANC HA	a-liq	x	x	x		neutral to bluish	h	x	x		x	
TUBOBLANC HA-D3	a-liq	x	x	x		blue-violet	h	x	x		x ⁽⁴⁾	
TUBOBLANC HA-S4	a-liq	x				blue-violet	h	x			x ⁽⁴⁾	
TUBOBLANC HM-PD	a-pow	x	x	x		neutral to bluish	h	x	x		x	
TUBOBLANC HV	a-liq	x				reddish	n					x ⁽⁵⁾
TUBOBLANC HV-S4	a-liq	x				red-violet	n					x ⁽⁵⁾
TUBOBLANC MA	a-liq	x	x	x		neutral to slightly reddish	m – h	x	x		x	x ⁽²⁾
TUBOBLANC PE-R	n-liq				x	reddish		x ⁽³⁾	x	x	x	x
TUBOBLANC PT-B	n-liq				x	blue-violet					x ⁽⁴⁾	x
TUBOBLANC PT-O	n-liq				x	reddish		x ⁽³⁾	x	x	x	x
TUBOBLANC RBV	a-liq	x				blue-violet	n – m					x ⁽⁴⁾
TUBOBLANC RUB	a-liq	x				red-violet	n – m	x	x		x ⁽¹⁾	x
TUBOBLANC STU	a-liq	x				blue tinged	n					x ⁽⁵⁾
TUBOBLANC STU-B	a-liq	x				blue-violet	n					x ⁽⁵⁾
TUBOBLANC 2B CONC.	a-pow	x				neutral to bluish	n – m	x	x		x ⁽¹⁾	x

(1) addition of salt for exhaust process
 (2) suitable to a limited extent, pretrials are required
 (3) with PES/cellulose blends also applicable in peroxide bleach
 (4) shaded
 (5) special product for easy-care finish
 * special brightener with high light fastness on polyamide
 ** special brightener with high light fastness on polyamide and cotton,
 stable to bleaching agents containing chlorine

n = low affinity
 m = medium affinity
 h = high affinity

ANTIFOAMING AND DEAERATING AGENTS

	Ionic character Appearance	Wetting deaerating	Defoaming	Properties	Application fields				
					Pretreatment		Dyeing		Finishing
					disc.	cont.	disc.	cont.	
KOLLASOL AD	a-liq	x	xx	deaerating agent and defoaming agent	xx	x	xx	x	
KOLLASOL CDA	n-liq	xx	xx	spec. silicone compound	xx	xx	xx	x*	xx
KOLLASOL CDS	n-liq	xx	xx	deaerating agent and penetration agent with excellent foam reducing properties for pretreatment and dyeing	xx	xx	xx**	xx	xx
KOLLASOL HWR	n-liq	xx	x	silicone oil-free deaerating agent					xx
KOLLASOL IND	a-liq	xx	x	silicone oil-free deaerating agent for continuous dyeing	x	x	x*	xx	x
KOLLASOL LOK	a-liq	x	xx	silicone oil containing defoaming agent	xx		x*		
KOLLASOL OCE	n-liq	xx	x	silicone free, deaerating agent containing surfactants, wetting agent	xx	xx			
KOLLASOL SD	n-liq	xx	x	wetting agent with deaerating effect with good stability to chemicals, volatile	x	xx			x
KOLLASOL ZIP	n-liq	x	xx	deaerator and penetration agent with outstanding foam- inhibiting properties for pretreatment and dyeing	xx	xx	xx**	xx	xx

* depending on dye class

** recommended for the polyamide dyeing

xx recommended – very good

x suitable – good

UNIVERSALLY APPLICABLE AUXILIARIES – WETTING AGENTS

	Ionic character Appearance	Chemical base
SUBITOL AS 6	a-liq	fatty alcohol ether phosphate
SUBITOL SB	a-liq	sulphosuccinic acid ester

CLEANING AGENTS FOR MACHINES AND APPARATUSES

	Ionic character Appearance	Application fields
INTENSOL OLI	n/c-liq	cleaning agents for machines soiled by oligomers
INTENSOL MR	a-liq	cleaning agent with high dissolving power for dyes, dye containing soilings, organic sediments and precipitations of finishes
FLUOREX DEL	c-liq	fluorescence quencher for soiling by anionic optical brightener

PH BUFFER FOR NEUTRALISATION OF ALKALINE FINISHING PROCESSES

	Ionic character Appearance	Application fields
NEUTRACID NVM 200	o-liq	organic/inorganic buffer
NEUTRACID NCS	o-liq	organic/inorganic acid donor with sequestrant for neutralizing alkaline washing processes
NEUTRACID PAT	o-liq	organic/inorganic buffer especially for PA carpet
NEUTRACID WSG	a-liq	sequestering containing organic/inorganic acid donor for neutralisation of alkaline washing processes

PRODUCT INDEX

BEISOL DO CONC. (o · pow)

Desizing agent

Oxidative desizing agent, mainly applied for continuous alkali pretreatment and cold bleach to improve the desizing effect. 2 – 5 g/l BEISOL DO CONC.

BEISOL PES (c · liq)

Mix of non-ionic and cationic surfactants

Special product for deweighting PES and to remove PES sizes in alkaline treatment liquors. NaOH in combination with BEISOL PES depolymerizes PES size, and it is possible to desize and caustify in one working step or in the case of CO/PES mixtures to desize and do a cold bleach at once. Moreover, it is possible to deweight PES material with BEISOL PES with a lower NaOH concentration and at a lower temperatures so that various handles and weights can be produced depending on the weight reduction recipe.

Continuous process:

5 – 10 g/l BEISOL PES

BEISOL PRO (o · liq)

Enzyme

Special product for the enzymatic pretreatment of cellulose fibres and their blends in a neutral to slightly alkaline medium. BEISOL PRO is an enzyme mix applied for cleaning cellulose fibres. BEISOL PRO clearly improves the hydrophilic effect on the fabric. The fabric is prepared at best for the subsequent bleach and dyeing. Depending on the origin of cotton a scouring becomes dispensable and water, time, chemicals and energy can be saved. A one-bath-several-phases dyeing process with preceding treatment with BEISOL PRO is possible without restrictions.

Discontinuous process:

1 – 4 % BEISOL PRO

Continuous process:

4 – 10 g/l BEISOL PRO

BEISOL SED (o · liq)

Bacteria amylase

BEISOL SED is an enzyme product which decomposes starch at standard desizing temperatures (65 – 70 °C) as well as at the boil. Owing to this heat stability, the application of BEISOL SED is not only restricted to short-time processes (e.g. pad steam processes with 1 minute of steam duration). It is also possible to apply BEISOL SED on plants with a

longer reaction time (e.g. combi-steamer, jigger). Heavy metals block the enzymatic decomposing effect of enzyme products very much. It is therefore advantageous to add a sequestering agent which is compatible with enzymes to the desizing bath such as BEIXON NE. In order to prevent the pH value from shifting to a pH outside of enzyme compatibility range caused by e.g. singeing dust, we recommend the addition of suitable buffering substances such as NEUTRACID NVM 200.

To achieve the highest possible wetting and liquor pick-up of the substrate in the padding process, we recommend the addition of a special deaerating agent such as KOLLASOL OCE. Details on application can be taken from the technical leaflets.

BEISOL T 2090 (o · liq)

Bacterial amylase

Special enzyme for desizing in the entire temperature spectrum. The product is applied in discontinuous and continuous desizing processes.

Discontinuous process:

1 – 4 % BEISOL T 2090

Continuous process:

4 – 10 g/l BEISOL T 2090

BEIXON AB 200% (a · liq)

Polyacrylate copolymer with saccharides

Sequestering and dispersing agent for dyeing and pretreatment. Stabiliser for the hydrogen peroxide bleach. BEIXON AB 200% is free of phosphorus and can be applied in cases of strict limit values for the introduction of phosphates into the waste waters and the demand of completely biodegradable sequestering agents. BEIXON AB 200% does not have a demineralising effect when dyeing with metalliferous dyes.

Discontinuous process:

0.3 – 1 % BEIXON AB 200 %

Continuous process:

2 – 5 g/l BEIXON AB 200 %

BEIXON Q (a · liq)

Polycarboxylic acids and special polymers

BEIXON Q is one component of a pretreatment concept which has been developed for cleaning and extracting cellulose fibres having a high degree of heavy metal impurities. Together with our CONTAVAN ICE, it contributes to a safe pretreatment and an immense increase of

whiteness. In many cases the application of BEIXON Q can decrease pinholes and fabric damages. BEIXON Q has a very high sequestering and dispersing capacity to alkaline earth and heavy metal ions in neutral to slightly acid treatment baths. The product is thus particularly suited for application in enzymatic desizing and in neutral wash processes. The application of BEIXON Q in neutral to slightly acid baths leads to a good removal of alkaline earth and heavy metal ions. Thanks to the outstanding dispersing properties of the product, pigment impurities are removed as well. Pretreatment of the fibre with BEIXON Q and a subsequent bleaching with CONTAVAN ICE improves the whiteness degree, which can result in peroxide savings of 30 – 50% depending on the fabric quality. BEIXON Q can also be added to bleaching and scouring baths for removing heavy metals. The additional application in pad steam processes minimizes alkaline earth deposits on the guide rollers and depositing device. In this way cleaning cycles of the wash compartments and steamers can be shortened and reduced. The product is easily biodegradable and phosphor-free and can thus be applied where strict limit values have to be observed for emitting phosphate to the waste water.

Details on application can be taken from the technical leaflets.

CHT-AKTIVATOR FBA (o · liq)

Peroxide activator

CHT-AKTIVATOR FBA accelerates and increases in combination with CHT-PUFFER FBA the bleaching effect of hydrogen peroxide in a neutral medium at 60 – 75 °C. With CHT-AKTIVATOR FBA and CHT-PUFFER FBA it is possible to achieve a high degree of whiteness when bleaching materials which are sensitive to temperatures and alkali.

2 – 5% CHT-AKTIVATOR FBA
2 – 5% CHT-PUFFER FBA

CHT-PUFFER FBA (o · liq)

Mixture of inorganic salts

CHT-PUFFER FBA accelerates and optimises the neutral bleach with CHT-AKTIVATOR FBA. The application quantity of CHT-AKTIVATOR FBA and CHT-PUFFER FBA should be identical.

2 – 5% CHT-AKTIVATOR FBA

2 – 5% CHT-PUFFER FBA
1 – 1.5 fold quantity of H₂O₂ 35%, referring to the application of activator

CONTAVAN CLO PLV (a · pow)

Buffer mixture

Stabiliser for discontinuous and continuous bleach with Na-chlorite.

- ▶ It stabilises activated chlorite
- ▶ It keeps the pH value constant during bleaching due to its buffering power.
- ▶ It inhibits the formation of chlorine dioxide and the unpleasant odour connected therewith.

Discontinuous process:

1 – 2% CONTAVAN CLO PLV

Continuous process:

4 – 6 g/l CONTAVAN CLO PLV

CONTAVAN GAL (a · liq)

Organic chelate former based on hydroxycarboxylic acids

Non-foaming stabiliser stable to alkali for the peroxide bleach. CONTAVAN GAL has excellent peroxide stabilising properties in presence of catalytic heavy metals like iron, copper and manganese.

Discontinuous process:

0.5 – 1% CONTAVAN GAL

Continuous process:

5 – 10 g/l CONTAVAN GAL

CONTAVAN ICE (a · liq)

Organic chelate former based on polycarboxylic acids

Non-foaming stabiliser for the alkaline peroxide bleach. CONTAVAN ICE has a strong binding power in presence of hardening substances and an excellent peroxide stabilising effect on heavy metals with catalytic effect like iron, copper and manganese. Due to the special composition the application quantities in bleaching recipes are normally lower in comparison to conventional stabilisers. CONTAVAN ICE is preferably applied in continuous bleaching procedures.

Discontinuous process:

0.1 – 0.5% CONTAVAN ICE

Continuous process:

3 – 6 g/kg CONTAVAN ICE

CONTAVAN TIG (a · liq)

Organic chelate former based on polycarboxylic acids

Peroxide stabiliser very stable to alkali with excellent stabilising, dispersing and high

sequestering power in presence of catalysts and hardening substance. CONTAVAN TIG is recommended for bleaching without silicate of soda and for highly reinforced feeding liquors.

Discontinuous process:

0.5 – 1.5% CONTAVAN TIG

Continuous process:

3 – 6 g/l CONTAVAN TIG

CONTAVAN VAN (a · liq)

Organic chelate former, dispersing agent and crystal inhibitors in combination with special silicates

Peroxide stabiliser for alkaline peroxide bleaching procedures. CONTAVAN VAN contains special silicates which have a better buffering capacity than conventional waterglass. The contained crystallisation inhibitors prevent silicate crusts on machines and heat exchangers. CONTAVAN VAN is suitable for all bleaching procedures.

Discontinuous process:

1 – 1.5% CONTAVAN VAN

Continuous process:

5 – 10 g/l CONTAVAN VAN and adding magnesium ions

FELOSAN FDO NEU (n · liq)

Emulsified terpene hydrocarbon

Fat solubilising agent and wet stain remover with very good dissolving properties towards oils, fats, and other preparations. Due to its biodegradability FELOSAN FDO NEU can be used where other detergents containing solvents cannot be used because of the contamination of the waste water.

Discontinuous process:

0.3 – 2% FELOSAN FDO NEU

Continuous process:

3 – 10 g/l FELOSAN FDO NEU

FELOSAN FOX (n · liq)

Modified fatty alcohol ethoxylates with anionic comb polymers

FELOSAN FOX is a new type of detergent with exceptional washing efficiency. Owing to its high washing and cleaning power, this product has outstanding hydrophilic properties on cotton. The good oil emulsifying capacity of FELOSAN FOX not only ensures an outstanding oil removal, but also increases the emulsion stability of oils/fats or waxes in washing baths. FELOSAN FOX is low foaming, so that it can also be used on washing machines and discontinuous dyeing machines with

high turbulences. The product is suitable for application on automatic dosing plants where chemicals and textile auxiliaries are transported in one pipeline with intermediate rinsing.

Discontinuous washing:

0.5 – 2 g/l FELOSAN FOX

Continuous washing:

1.0 – 5 g/l FELOSAN FOX

FELOSAN JET (a/n · liq)

Modified fatty alcohol ethoxylates,

low foaming washing and wetting agent

FELOSAN JET has a good wetting power and a high washing and cleaning power. Therefore FELOSAN JET is highly suited to wash and clean all fibre types. The product is low foaming without silicone-containing antifoam system, so that it can also be applied on washing machines and discontinuous dyeing machines with high turbulences. Since the activities of bacterial compositions and pancreas amylases are not impaired by FELOSAN JET, it may also be added to desizing liquors as wetting agent and for emulsifying size fats.

Discontinuous process:

1 – 2% FELOSAN JET

Continuous process:

5 – 10 g/l FELOSAN JET

FELOSAN NFG (n · liq)

Fatty alcohol ethoxylates

Washing agent with distinct emulsifying power for oil and fat stains, high wetting and a very good washing power. Due its low foaming property FELOSAN NFG can be applied on washing machines with high turbulences und is mainly applied on discontinuous processes.

Discontinuous process:

0.5 – 2% FELOSAN NFG

Continuous process:

3 – 6 g/l FELOSAN NFG

FELOSAN NKB (n · liq)

Modified fatty alcohol ethoxylates

Washing agent with distinct oil emulsifying power, high wetting power and a very good washing power. FELOSAN NKB is suitable for discontinuous and continuous washing and bleaching processes, but it is preferably recommended in the continuous treatment.

Discontinuous process:

0.5 – 2% FELOSAN NKB

Continuous process:

3 – 6 g/l FELOSAN NKB

FELOSAN RG-N (n · liq)

Mix of fatty alcohol ethoxylates

Low foaming emulsifying agent, preferably applied to remove natural and synthetic fatty substances. The product is suitable for discontinuous and continuous procedures and without addition of solvents it facilitates the removal of knitting oils and loom oils from the textiles.

Discontinuous process:

0.5 – 3% FELOSAN RG-N

Continuous process:

3 – 50 g/l FELOSAN RG-N depending on the oil soiling

FELOSAN RIZ 40 (n · liq)

Ethylene oxide addition products

Due to its composition FELOSAN RIZ 40 has a particularly distinct emulsifying capacity for silicone oils, knitting oils and fibre finishes based on fatty acid ester ethoxylates. It has also very good washing properties.

FELOSAN RIZ 40 is universally suited for all types of fibres and can be applied in slightly acid as well as in neutral to alkaline ranges. 2 – 4% FELOSAN RIZ 40

FELOSAN RNF (n · liq)

Modified ethoxylates

Silicone-free, universally applicable, non-foaming wetting and washing agent for all fibres. FELOSAN RNF stands out for its excellent wetting power and high cleaning capacity. FELOSAN RNF is applied as carbonizing wetting agent.

Discontinuous process:

0.5 – 2% FELOSAN RNF

Continuous process:

4 – 8 g/l FELOSAN RNF

FLUOREX DEL (c · liq)

Cationic polymer

Highly effective special product to quench undesired fluorescence. FLUOREX DEL acts only with anionic brighteners and quenches the fluorescence on cotton and polyamide. The effect is lower on polyamide. Another brightening of fabric treated with FLUOREX DEL is only possible on certain conditions or not anymore. FLUOREX DEL is very much suitable for the cleaning of machines, apparatus and padders contaminated with optical brighteners.

Discontinuous process:

0.5 – 6% FLUOREX DEL

Continuous process:

5 – 25 g/l FLUOREX DEL

Cleaning of machines:

5 – 15 g/l FLUOREX DEL

HEPTOL B 81 200% (a · liq)

Mixture of polyacrylates and acrylic acid copolymerisates

Highly concentrated, phosphorus-free sequestering agent. HEPTOL B 81 200% is applied for softening operative water for the pretreatment as well as for sequestering alkaline earth and heavy metal ions in all pretreatment and dyeing processes.

Discontinuous process:

0.3 – 1.5% HEPTOL B 81 200%

Continuous process:

0.5 – 3 g/l HEPTOL B 81 200%

HEPTOL EMG (a · liq)

Synergetic mixture of different phosphonates

Very acid sequestering agent with a high pH buffering power which is used in acid demineralisation and in acid dyeing baths. HEPTOL EMG stands out for the following properties on the contrary to the acids applied as well in this field like e.g. acetic acid, formic acid and oxalic acid:

- ▶ not vapour-volatile, therefore no disturbing odours and corrosion of factory halls and pipe systems
- ▶ no formation of insoluble salts, e.g. calcium sulphate or calcium oxalate
- ▶ no corrosive effect on stainless steel
- ▶ even if the pH changes to the alkaline range, the sequestering effect will be maintained, i. e. it is possible to demineralise and bleach in one bath after the pH has changed with HEPTOL EMG acting as stabiliser.

1 – 5 g/l HEPTOL EMG depending on the metal content and the process

HEPTOL ESW (a · liq)

Phosphonate

Sequestering agent with an outstanding binding capacity towards hardening agents and heavy metals ions. The main application field is pretreatment, but HEPTOL ESW has also a stabilising effect on peroxide and combines the advantages of a stabiliser with sequestering properties.

0.5 – 3 g/l HEPTOL ESW depending on the metal content

HEPTOL KEB (a · liq)**Phosphonate**

Sequestering agent with a very high binding capacity towards hardening agents and heavy metal ions, applicable in all pretreatment processes, discontinuous and continuous processes. Due to the peroxide stabilising effect HEPTOL KEB can also act as stabiliser facilitating thus a gentle bleaching process.

0.5 – 3 g/l HEPTOL KEB depending on the metal content

HEPTOL NWS (a · liq)**Polymeric carboxylic acid containing polyphosphate**

HEPTOL NWS acts as

- ▶ sequestering agent, which mainly eliminates hardening agents
- ▶ dispersing agent and detergent booster i. e. HEPTOL NWS prevents detached accompanying substances or unfixed residual dyestuff from reabsorbing and increases the washing capacity of detergents
- ▶ soaping agent for fast soaping of vat, sulphur and naphthol dyeings

1 – 2 g/l HEPTOL NWS

HEPTOL SF 4 (a · liq)**Synergetic mix of different phosphonates**

HEPTOL SF 4 has a very high sequestering power on alkaline earth ions and prevents the formation of alkaline earth silicates, alkaline earth carbonates and alkaline earth hydroxides and of heavy metal ions in an alkaline medium. HEPTOL SF 4 can be applied as sequestering agent in processes of pretreatment and dyeing.

0.5 – 3 g/l HEPTOL SF 4 depending on the metal content

INTENSOL MR (a · liq)**Mixture of solvents and surfactants boiling at high temperatures**

Cleaning agent for machines and apparatuses having a high solvent power for dyes, soilings containing dyes and organic sediments as well as precipitations of preparations.

2 – 5 g/l INTENSOL MR mostly together with reduction agent, the application quantity depends on the degree of soiling

INTENSOL OLI (n/c · liq)**Quaternary ammonium compound**

For boiling out machines and apparatus.

Deposits of dyestuffs, oligomers, preparations and hardeners are dissolved and dispersed by the precipitation inhibitors so that they do not redeposit in the machine parts when drained.

Also INTENSOL OLI has the characteristic to saponify oligomers in the presence of alkali at temperatures between 80 °C and 130 °C. In this way, it is possible to use INTENSOL OLI during reductive aftertreatment at 70 – 80 °C, after a polyester dyeing.

Cleaning machines at the boil

2 – 5 g/l INTENSOL OLI

KOLLASOL AD (a · liq)**Combination of non-ionic and anionic surfactants with special silicones**

KOLLASOL AD mostly acts as defoaming agents, and it is suited for half and fully filled nozzle apparatuses as well as short liquor dyeing apparatuses. KOLLASOL AD is HT resistant.

0.2 – 1 g/l KOLLASOL AD

KOLLASOL CDA (n · liq)**Mixture of hydrophilic silicone surface active agents with higher alcohols**

Deaerator with foam inhibiting properties based on the new type of silicone surface active substances. KOLLASOL CDA minimises the risk of stain formation with its new chemistry since unlike antifoam systems based on emulsified silicone oils, this system does not detach silicone oil. The product is applicable in pretreatment and dyeing processes on all high speed machines.

0.1 – 1 g/l KOLLASOL CDA

KOLLASOL CDS (n · liq)**Organomodified siloxanes in combination with alkoxyates**

KOLLASOL CDS is applied in case of foam formation in washing, bleaching and dyeing liquors. In addition to the defoaming effect the product also shows a good deaerating effect and is thus also suitable for this application field. The deaerating agent and penetration accelerator is particularly suitable for the dyeing of polyamide fibres.

0.1 – 0.5 g/l KOLLASOL CDS

KOLLASOL HWR (n · liq)**Combination of fatty alcohols, fatty alcohol ethoxylates and fatty alcohol alkoxyates**

Penetration accelerator and wetting agent with excellent low foaming properties for finishing and easy-care finish. KOLLASOL HWR causes an immediate penetration of the material and makes the finishing chemicals get evenly absorbed. KOLLASOL HWR has a very good emulsifying capacity and acts as solubiliser for finishing components. With its very good emulsifying effect KOLLASOL HWR can be also applied in desizing, washing and bleaching processes on jets.

1 – 10 g/l KOLLASOL HWR

KOLLASOL IND (a · liq)**Combination of surface-active agents with defoaming effect**

In all application fields of the vat dyeing and reactive dyeing KOLLASOL IND accelerates penetration very well. KOLLASOL IND has an excellent defoaming effect and dispersing properties due to its special formulation. Due to its anionic character the product can be rinsed off very easily. KOLLASOL IND does not have a retarding effect on dyes, and does not impair the dye yield.

2 – 5 g/l KOLLASOL IND

KOLLASOL LOK (a · liq)**Mixture of surface-active substances containing silicone, with higher alcohols**

Deaerator and antifoam with wetting properties. KOLLASOL LOK is used whenever an excellent deaeration of the material is absolutely necessary for an undisturbed process.

0.2 – 1 g/l KOLLASOL LOK (depending on foam formation)

KOLLASOL OCE (n · liq)**Synergetic mixture of fatty alcohol ethoxylates and fatty alcohol alkoxyates**

Phosphor-free and silicone-free deaerating agent and wetting agent with foam reducing properties. Due to the surfactant like character KOLLASOL OCE has a good dispersing and emulsifying effect. KOLLASOL OCE is not steam-volatile and thus it is particularly suitable as deaerating agent with little odour in hot liquors.

1 – 2 g/l KOLLASOL OCE

KOLLASOL SD (n · liq)

Phosphoric acid ester

Wetting agent, deaerator and foam inhibitor. KOLLASOL SD is applied in many textile finishing processes, especially in pretreatment and bleaching. The product has a self antifoaming effect and therefore it can be also applied as antifoam.

0.5 – 1 g/l KOLLASOL SD

KOLLASOL ZIP (n · liq)

Organo-modified siloxanes in combination with alkoxyates

The application of KOLLASOL ZIP gives outstanding and long-lasting defoaming effects in all application fields. Good defoaming properties with very low application are achieved on rapid running machines. The product is very well compatible with dyes and can therefore also be used in dyeing processes. Compared with defoaming systems based on emulsified silicone oils, there is no risk of stain formation caused by silicone oil deposits when using KOLLASOL ZIP. KOLLASOL ZIP can be applied in cold as well as in hot treatment baths.

0.1 – 1 g/l KOLLASOL ZIP

NEUTRACID NCS (o · liq)

Organic/inorganic buffer mix containing a sequestering agent

Compared with the usual products based on organic mixes of acids and buffer it has a high sequestering effect in cold and hot liquors. The product is therefore not only suitable for neutralising processes but also for combined neutralisation/extraction of hardening substances and heavy metals as well as for an acid demineralisation before the bleaching process. NEUTRACID NCS is not volatile and does not have a corrosive effect so that stenter or wet finishing machines are not affected.

Discontinuous process:

0.2 – 2% NEUTRACID NCS

Continuous process:

For the application on a continuous range, we refer to the details stated in our technical leaflet.

NEUTRACID NVM 200 (o · liq)

Mixture of organic/inorganic buffers

pH buffer for neutralising alkaline finishing processes. Unlike mineral acid not even large quantities of NEUTRACID NVM 200 cause any fibre damage. The product is not

volatile, so that a corrosion on the stenter frame or other machines will not occur.

Discontinuous process:

0.5 – 1% NEUTRACID NVM 200

Continuous process:

For the application on a continuous range, we refer to the details stated in our technical leaflet.

NEUTRACID PAT (o · liq)

Organic/inorganic buffer mixture

NEUTRACID PAT is applied to adjust neutral to slightly acid pH values after alkaline finishing processes. The application concentration depends on the residual alkali content of the fabric, the water quality and the desired pH value on the fabric. NEUTRACID PAT proved to be especially suitable as acid buffer in the PA carpet dyeing.

Discontinuous process:

0.3 – 0.5% NEUTRACID PAT depending on the application field

Continuous process:

For the application on a continuous range, we refer to the details stated in our technical leaflets.

NEUTRACID WSG (a · liq)

Organic/inorganic buffer mixture containing a sequestering agent

NEUTRACID WSG guarantees the adjustment of neutral to slightly acid pH values on the fabric which do not change even during a longer time of storage. By application of NEUTRACID WSG for neutralisation the pH change on the fabric due to the industrial water is compensated.

Discontinuous process:

0.2 – 2% NEUTRACID WSG

Continuous process:

For the application on a continuous range, we refer to the details stated in our technical leaflets.

SUBITOL AS 6 (a · liq)

Fatty alcohol ether phosphate

SUBITOL AS 6 is a highly alkali resistant wetting agent and washing agent with good wetting properties, even in presence of high quantities of alkali and high concentrations of alkaline earth metals. Due to these properties SUBITOL AS 6 is particularly suited for continuous scouring processes at boiling temperatures. In addition SUBITOL AS 6 can be applied as washing agent and wetting agent in enzymatic,

oxidative desizing and cold bleaching liquors. SUBITOL AS 6 is recommended for the padding liquor in the dyeing with vat dyes or reactive dyes and in pad-dry pad-steam-, pad-pad procedures. The addition of SUBITOL AS 6 assures a quick and regular penetration of the padding liquor.

Discontinuous process:

1 – 3 g/l SUBITOL AS 6

Continuous process:

2 – 5 g/l SUBITOL AS 6

SUBITOL HPM (a · liq)

Alkyl sulphate

SUBITOL HPM is a low foaming wetting agent for caustic and mercerising treatment. The wetting effect of SUBITOL HPM develops in NaOH 23 – 33 °Bé. Lower concentrations make the wetting effect of SUBITOL HPM decrease proportionally. During caustic recovery, this product does not cause any disturbances by vaporization.

Mercerising of grey fabric:

4 – 6 g/l SUBITOL HPM

Mercerisation on pretreated fabric:

0 – 3 g/l SUBITOL HPM

SUBITOL SB (a · liq)

Sulphonated succinic acid ester

Rapid wetting agent. Even lowest concentrations of SUBITOL SB have a very high wetting and penetration power which cannot be compared with other surface active substances.

Continuous process:

0.3 – 1 g/l SUBITOL SB

TUBOBLANC 2B CONC. (a · pow)

Stilbene derivative

Brightener with medium affinity with a brilliant, bluish white shade for cellulose fibres. TUBOBLANC 2B CONC. can be applied in continuous and discontinuous procedures. Due to the medium exhaust speed the addition of salt is recommended for the brightening of cotton in exhaust procedure.

Discontinuous process:

0.1 – 0.5% TUBOBLANC 2B CONC.

Continuous process:

0.3 – 3 g/l TUBOBLANC 2B CONC.

TUBOBLANC BL (a · liq)

Distyryl derivative

Whitener with a low affinity to the cellulose fibre and high affinity to the polyamide fibre, wool and natural silk producing a neutral

to slightly reddish white shade. A special advantage is the high fastness to light which can be obtained with TUBOBLANC BL on polyamide fibres. TUBOBLANC BL is stable to acids up to pH 1 and can be applied in strongly acid easy-care finishing liquors. However, TUBOBLANC BL is sensitive to hardness. It is not possible to apply magnesium catalysts. In case of bleaching liquors containing electrolytes it is necessary to carry out preliminary trials.

Discontinuous process:

Cellulose fibres:

0.5 – 1.2% TUBOBLANC BL

Continuous process:

Cellulose fibres:

0.5 – 3 g/l TUBOBLANC BL

Discontinuous process:

Polyamide, wool, silk:

0.5 – 1.5% TUBOBLANC BL

Continuous process:

Polyamide, wool, silk:

2 – 20 g/l TUBOBLANC BL

TUBOBLANC COL (a · pow)

Stilbene derivative

TUBOBLANC COL is a high affinity brightener for cellulose, polyamide, wool and silk which produces a very brilliant white shade through the addition of dyestuff. Depending on the recipe TUBOBLANC COL shows good stabilities towards peroxide and to reductive bleach.

Discontinuous process:

Cellulose fibres:

0.2 – 0.6% TUBOBLANC COL

Discontinuous process:

Polyamide, wool, silk:

0.3 – 1% TUBOBLANC COL

Application quantity depending on the desired whitening

TUBOBLANC CRL (a · liq)

Stilbene derivative

Optical brightener for cotton and polyamide. TUBOBLANC CRL is a white shading agent with medium affinity to cellulose fibres and a high affinity to the polyamide fibre which gives a reddish white shade. The product stands out for its stability in chlorite bleaching liquors and its high fastness to light on cotton and polyamide fibres.

Discontinuous process:

Cellulose fibres:

0.5 – 1.2% TUBOBLANC CRL

Discontinuous process:

Polyamide, wool, silk:

0.5 – 2% TUBOBLANC CRL

Continuous process:

Polyamide, wool, silk:

2 – 20 g/l TUBOBLANC CRL

TUBOBLANC DIK (a · liq)

Stilbene derivative

Optical brightener for cellulose fibres. TUBOBLANC DIK is a low affinity brightener with a faint bluish to neutral white shade. TUBOBLANC DIK is preferably recommended for the continuous pretreatment. The brightener can also be applied in the discontinuous treatment, but the addition of salt to increase the substantivity is advantageous.

Discontinuous process:

0.5 – 1.2% TUBOBLANC DIK

Continuous process:

2 – 6 g/l TUBOBLANC DIK

TUBOBLANC EBF (n · liq)

Benzoxazole derivative

Optical brightener for PES, acetate and triacetate fibres as well as for the optical brightening of the mentioned synthetic fibres and their blends with natural fibres with a bluish shade. TUBOBLANC EBF has an excellent fastness to light, wash fastness, fastness to perspiration and to dry fixation. The fastness to light is between 7 – 8.

Due to its stability towards chlorite, peroxide and reducing agents, TUBOBLANC EBF can be applied in all bleaching processes.

Discontinuous process:

0.2 – 2% TUBOBLANC EBF

Thermosol process:

3 – 20 g/l TUBOBLANC EBF

TUBOBLANC ERN (n · liq)

Benzoxazole derivative

TUBOBLANC ERN is the reddish partner of TUBOBLANC EBF (bluish). All other details see TUBOBLANC EBF.

TUBOBLANC HA (a · liq)

Stilbene derivative

Whitener with high affinity giving a neutral to bluish white shade on cellulose, wool, polyamide and silk. TUBOBLANC HA is mainly applied in the exhaust process. TUBOBLANC HA has a good stability to

peroxide and reduction agents and can therefore be used for these bleaching processes.

Discontinuous process:

Cellulose fibres:

0.3 – 1% TUBOBLANC HA

Discontinuous process:

Polyamide, wool, silk:

0.5 – 2% TUBOBLANC HA

TUBOBLANC HA-D3 (a · liq)

Stilbene derivative

Whitener containing dye with high affinity giving a strong blue violet white shade on cellulose, wool, polyamide and silk. TUBOBLANC HA-D3 can be applied in the exhaust process and in the discontinuous peroxide and reduction agent bleach.

Discontinuous process:

Cellulose fibres:

0.1 – 0.6% TUBOBLANC HA-D3

Discontinuous process:

Polyamide, wool, silk:

0.1 – 0.6% TUBOBLANC HA-D3

Application quantity depending on the desired whitening

TUBOBLANC HA-S4 (a · liq)

Stilbene derivative

Dye containing whitener to adjust bluish shades on cellulose fibres. Due to its high affinity TUBOBLANC HA-S4 is applied only by exhaust method and in discontinuous peroxide bleaching.

Discontinuous process:

Cellulose fibres:

0.4 – 1% TUBOBLANC HA-S4

The application quantity depends on the desired shading

TUBOBLANC HM-PD (a · pow)

Stilbene derivative

Optical brightener with high affinity and neutral to bluish white shade for cellulose, wool, polyamide and silk. TUBOBLANC HM-PD has good stabilities to peroxide and reduction agents. Due to its affinity behaviour and concentrated adjustment, TUBOBLANC HM-PD is recommended only for discontinuous long liquor processes.

Discontinuous process:

Cellulose fibres:

0.05 – 0.2% TUBOBLANC HM-PD

Discontinuous process:

Polyamide, wool, silk:

0.1 – 0.4% TUBOBLANC HM-PD

TUBOBLANC HV (a · liq)**Optical brightener for cellulose fibres**

TUBOBLANC HV is preferably recommended for easy-care finishes and finishing due to its stability to metal salts and acid.

Continuous process:

5 – 20 g/l TUBOBLANC HV

TUBOBLANC HV-S4 (a · liq)**Stilbene derivative**

TUBOBLANC HV-S4 is a brightener with low affinity. The shading dyestuff in this product gives a very brilliant, red to violet-tinged shade of white. The product mainly stands out for its stability in low pH ranges as well as by its high stability to electrolyte and metal salt catalysts. This makes TUBOBLANC HV-S4 suitable for resin finishing. The stability of the incorporated dyestuff depends on the resin finishing recipe and that is why pretrials must be done. This pretrial also serves for determining the application amount and the desired colour shade. Optical brighteners are very sensitive to heavy metal ions, so that even tiny amounts of heavy metal ions may impair the fluorescence. The addition of a sequestering agent such as HEPTOL KEB can solve this problem. Shading depends on the application amount and therefore the desired shading must be determined in pretrials. Higher amounts give a distinct red to violet-tinged white. Should only a very slight shading be needed, TUBOBLANC HV-S4 can be combined with the unshaded brightener TUBOBLANC HB.

5 – 10 g/l TUBOBLANC HV-S4

TUBOBLANC MA (a · liq)**Stilbene derivative**

Universal brightener for cellulose and polyamide fibres, wool and natural silk. Because of its medium to high affinity TUBOBLANC MA is applied in long liquors and imparts a neutral to slightly reddish white to the fabric. Depending on the fibre type, brightening can also be done in the peroxide or reduction agent bleach.

Discontinuous process:

Cellulose fibres:

0.3 – 1% TUBOBLANC MA

Discontinuous process:

Polyamide, wool, silk:

0.5 – 2% TUBOBLANC MA

Continuous process:

Polyamide, wool, silk:

2 – 20 g/l TUBOBLANC MA

TUBOBLANC PE-R (n · liq)**Styryl benzene derivative**

Optical brightener for polyester fibres with reddish white shade. The product is suitable for white shades produced in the exhaust process with the temperature being chosen between 115°C and 130°C. At fixation temperatures between 190 – 210°C TUBOBLANC PE-R will give brilliant brightening effects.

Discontinuous process:

0.1 – 0.5% TUBOBLANC PE-R

Thermosol process:

1 – 10 g/l TUBOBLANC PE-R

TUBOBLANC PT-B (n · liq)**Styryl benzene derivative**

Optical brightener for polyester fibres. Dispersion brightener containing dye with the properties of TUBOBLANC PT-O.

Discontinuous process:

0.1 – 0.6% TUBOBLANC PT-B

Thermosol process:

2 – 6 g/l TUBOBLANC PT-B

The application quantity depends on the desired whitening

TUBOBLANC PT-O (n · liq)**Styryl benzene derivative**

Optical brightener for polyester fibres. TUBOBLANC PT-O is suited to brighten both PES and fibre blends containing PES in the exhaust and thermosol process. The optimum white is achieved at 110 – 130°C in the exhaust process and at 180 – 200°C in the thermosol process.

Discontinuous process:

0.2 – 1% TUBOBLANC PT-O

Thermosol process:

2 – 10 g/l TUBOBLANC PT-O

TUBOBLANC RBV (a · liq)**Stilbene derivative**

Brightener containing dye with low to medium affinity with strong blue violet white for cellulose which can be applied only in the impregnation process. The colour shade of TUBOBLANC RBV is not stable in the peroxide bleach.

Continuous process:

3 – 10 g/l TUBOBLANC RBV

Application quantity depending on the desired whitening

TUBOBLANC RUB (a · liq)**Stilbene derivative**

Brightener with low to medium affinity with

red violet and very brilliant white shade for cellulose. Because of its affinity we recommend adding salt to TUBOBLANC RUB for complete bath exhaustion in the discontinuous process (peroxide/reduction bleach). TUBOBLANC RUB can also be used for finishing/easy-care finishing. The pH value of the liquors ought to be above pH 3.5. When using nitrate catalysts, an afterwashing is necessary to avoid losses of the fastness to light.

Discontinuous process:

0.4 – 1% TUBOBLANC RUB

Continuous process:

3 – 10 g/l TUBOBLANC RUB

TUBOBLANC STU (a · liq)**Stilbene derivative**

TUBOBLANC STU is a brightener with low affinity and has a blue-tinged white. TUBOBLANC STU mainly stands out for its stability in low pH ranges, for its high stability to electrolyte and metal salt catalysts as well as for its good washing stability. TUBOBLANC STU is our recommendation for resin finishing resp. easy-care finishing. Details on application can be taken from the technical leaflets.

TUBOBLANC STU-B (a · liq)**Stilbene derivative**

TUBOBLANC STU-B is a shaded brightener with low affinity and has a blue-violet white. TUBOBLANC STU-B mainly stands out for its stability in low pH ranges, for its high stability to electrolyte and metal salt catalysts as well as for its good washing stability. TUBOBLANC STU-B is our recommendation for resin finishing resp. easy-care finishing. Details on application can be taken from the technical leaflets.

TUBOSET DAP (n · liq)**Special mixture with modified fatty alcohol ethoxylates**

Low foaming washing-active antioxidant to prevent or to reduce yellowing during thermofixation of articles containing PA. TUBOSET DAP has a very good silicone emulsifying power, and therefore we recommend it preferably on articles containing elastane as fixation protective agent.

Continuous process:

10 – 30 g/l TUBOSET DAP

TUBOSET LVI (a · liq)**Sulphonic acid salt**

TUBOSET LVI reduces the tendency of phenolic yellowing during storage of light textiles in plastic bags. Phenolic yellowing is caused by BHT (2,6 butylated hydroxytoluene) which is sometimes used as anti-oxidation agent in such bags. TUBOSET LVI is mainly used on polyamide, but it can also be used on cotton, polyester and their blends.

The application amount depends on the yellowing tendency. The tendency of phenolic yellowing also depends on the pH value of the fabric (pH value of the fabric should be <5.5). The product is adjusted to be acid, so that in most cases no pH corrective measures are necessary.

Exhaust method:

1 – 3% TUBOSET LVI

Application on the padder:

10 – 30 g/kg TUBOSET LVI

TUBOSET NOX 300 (o · liq)**Mixture of organic acids and salts**

TUBOSET NOX 300 minimizes the tendency of nitrogen oxide yellowing of optically brightened and dyed cellulose articles when textiles are stored. Nitrogen oxide yellowing is caused by nitrogen oxides (NOX) and occurs when fossil fuels burn.

The product ought to be primarily applied on the padder.

Application amounts depend on the yellowing tendency of the substrate.

5 – 15 g/kg TUBOSET NOX 300

TUBOSET PAP (n · liq)**Carboxylic acid amide**

Fibre protection agent for polyamide which prevents the polyamide fibre from a chemical damaging during the oxidative and reductive bleaching. In case of a chemical attack the groups necessary for the dye linkage of the PA fibres are modified in such a way that the dye absorption is reduced. In extreme cases a strong loss of tearing strength results.

Discontinuous process:

0.3 – 0.7 g/l TUBOSET PAP

TUBOSET SAM (n · pow)**Carboxylic acid amide**

TUBOSET SAM is an antioxidant blocker. The special product reduces the yellowing of polyamide fibres and their blends during

thermal fixing or during the moulding process.

Continuous process:

0.5 – 2.5 g/kg TUBOSET SAM

TUBOSET SML (n · liq)**Carboxylic acid amide**

TUBOSET SML is a special thermal protection reducing or preventing the yellowing of polyamide fibres and their blends during treatments at hot temperatures like – thermofixing and moulding.

Continuous process:

5 – 20 g/kg TUBOSET SML

TUBOTEX NCD (a · pow)**Synergetic mixture of inorganic alkali salts with surfactants**

Alkali donor, buffer and stabiliser for discontinuous peroxide bleaching. TUBOTEX NCD contains all auxiliary additions which are normally used for hydrogen peroxide bleaching. Thus, the amount of required and stored bleaching chemicals can be reduced.
Winch beck (LR 1: 15 – 1: 20) 2 – 4 g/l
Jet (LR 1: 6 – 1: 10) 3 – 4 g/l
Jigger (LR 1: 3 – 1: 5) 3 – 8 g/l

VARIO BLEACH 3E (a · liq)**Combination product made of peroxide activating components with anionic comb polymers**

VARIO BLEACH 3E can be used as universal product for all discontinuous alkaline hydrogen peroxide bleaches of cellulosic fibres.

The peroxide activating properties of VARIO BLEACH 3E help increase the whiteness degree and decrease the process times. Despite the peroxide activating effect, there is no danger of more fibre damages. The comb polymers integrated in VARIO BLEACH 3E significantly support the cleaning effect and improve the removal of natural cotton accompanying substances as well as finishes, so that fewer rinsing baths are needed.

VARIO BLEACH 3E also has dispersing and sequestering properties. The broad spectrum of effects of VARIO BLEACH 3E has a positive effect on the pretreatment of various cotton qualities.

VARIO BLEACH 3E can be applied in a temperature range of 60 – 110 °C and does

not foam.

0.5 – 1% VARIO BLEACH 3E

VISCAVIN CCP (a · liq)**Synergistic mixture of modified fatty alcohol ethoxylates, organic stabilising agents and sequestering agents**

VISCAVIN CCP is a multi-functional product for application in discontinuous and continuous bleaching. The product stands out for its exceptional wetting properties. In addition, VISCAVIN CCP has very good stabilising properties of hydrogen peroxide and very good sequestering properties of hardeners and catalysts. Owing to the surface active properties, impurities on the cotton are dissolved, removal during the washing process is improved and a reabsorption of the impurities is prevented. The simultaneous sequestering properties of hardeners and catalysts prevent the formation of precipitations and catalytic damages during peroxide bleaching. Owing to the versatility of VISCAVIN CCP, often only one product is needed, which makes processes easier and sources of error are reduced. Detailed information can be taken from our technical leaflets.

VISCAVIN GFN (a/n · liq)**Modified fatty alcohol alkoxyates in combination with organic stabilisers and sequestering agents**

Low foaming combination product composed of surface-active substances, stabilisers and sequestering agents. With its chemical composition the product can be applied in discontinuous and continuous washing processes.

Discontinuous process:

0.5 – 1% VISCAVIN GFN

Continuous process:

0.5 – 10 g/l VISCAVIN GFN

DYEING

KEY

no	= without ionic character	fla	= flakes
a	= anionic	pow	= powder
n	= non-ionic	pas	= paste
c	= cationic	x	= recommended
psc	= pseudocationic	(x)	= limited recommendation
d	= amphoteric	gran	= granulate
liq	= liquid		

DISPERSION AGENTS AND/OR DYESTUFF SOLVENTS

	Ionic character	Appearance	Chemical base
CHT-DISPERGATOR ORM	a	liquid	aromatic sulphonates
CHT-DISPERGATOR SMS	a	liquid	aromatic sulphonates
CHT-DISPERGATOR XHT-S	a/n	liquid	preparation of polyglycol ether derivatives
HEPTOL SF 4	a	liquid	phosphonates
MEROPAN DA/DA 200	a	liquid	polyacrylate with phosphonate
MEROPAN DPE	a	liquid	polyacrylate, polycarboxylic acid and modified phosphonates
SARABID 200 LL	n	flakes	fatty alcohol polyglycol ether
SARABID LDR	a	liquid	special polymers
SARABID OL	n	liquid	fatty alcohol polyglycol ether
SARABID MIP	a	liquid	mixture of special polymers, fatty alcohol ether phosphate, enzyme

LEVELLING AGENTS FOR NATURAL FIBRES

			Cellulose fibres				Protein fibres			
	Ionic character	Appearance	Direct dyes	Reactive dyes	Vat dyes	Coupling dyes	Acid dyes	1:1 Metal complex dyes	1:2 Metal complex dyes	Reactive dyes
KERIOLAN A2N	d	liquid					x		x	
RETINOL M*	n	liquid	x		x					
SARABID 200 LL	n	flakes				x		(x)	(x)	
SARABID DLC	a	liquid	x		(x)					
SARABID DLO CONC.	n	liquid	(x)					x		
SARABID IPD	n/psc	liquid					x		x	(x)
SARABID IPM	a	liquid					x		x	
SARABID LDR	a	liquid	(x)	x						
SARABID MIP	a	liquid	(x)	x		x				
SARABID OL	n	liquid				x		x	x	
SARABID PAW	n	liquid								x
SARABID VAT	c	liquid			x					

* only small quantities because high affinity to dyestuff
x first recommendation
(x) second recommendation

AUXILIARIES FOR PADDING AND CONTINUOUS DYEING

	Ionic character	Appearance	Chemical base	Fibre type
COLORCONTIN BDF	a	liquid	combination of non-ionic and anionic substances	PA
COLORCONTIN VGP	a	liquid	phosphor acid ester	CEL + SYNTH.
MIGRASOL SAP	a	liquid	aqueous solution of a polymeric Na-acrylamide/acrylate	CEL + SYNTH.

LEVELLING AGENTS FOR SYNTHETIC FIBRES

			PA			PES		CA/CTA	PAN
	Ionic character	Appearance	Acid dyes	Metal complex dyes	Dispersion dyes	Dispersion dyes with affinity to fibres	Dispersion dyes with affinity to dyes	Dispersion dyes	Cationic dyes
CHT-DISPERGATOR XHT-S	a/n	liquid					x	x	
EGASOL MD	a	liquid				x	x		
EGASOL UP	a	liquid				x	x		
SARABID IPD	n/psc	liquid	x	x					
SARABID IPF	a	liquid	x	x					
SARABID IPM	a	liquid	x	x					
TUBACRYL RI	c	liquid							x
TUBACRYL RVR	c	liquid							x
VISCAVIN S 700	a	paste					x		

DYEING ACCELERATORS

	Ionic character	Appearance	Chemical base	Fibre type
SARAPOL BLU	a	liquid	carboxylic acid ester	PES PES/WO
SARAPOL DLN	a	liquid	aromatic esters and hydrocarbons	PES

CREASE PREVENTION AGENTS

	Ionic character	Appearance	Fibre type					Chemical base
			CEL	WO SE	PA	PES, CA, CTA	PAN	
BIAVIN 109	a	liquid	x	x		x*		emulsified fatty compound
BIAVIN BLI	n	liquid		x				aqueous solution of a polyamide derivative
BIAVIN BPA	no	liquid	x	x	x	x	x	polymer amides
BIAVIN DFG	a	liquid	x					combination of polymer dispersion and sequestering agent
BIAVIN PCV	a	liquid	x		x	x		phosphor acid ester
BIAVIN TCC	n	liquid	x	x	x*	x*		polyethylene emulsion
VISCAVIN S 700	a	paste				x		modified ester with ethoxylates and sulphonates

* blends with CEL

PH-REGULATING AGENTS, ACID DONORS AND ALKALI DONORS

	Ionic character	Appearance	Chemical base
EGASOL SF	no	liquid	inorganic buffering solution (alkaline)
MEROPAN CIT	a	liquid	organic/inorganic buffering compound and dispersing agent (acid)
MEROPAN EF 200	n	liquid	special ester (pH control acid)
MEROPAN KP	no	liquid	mixture of organic acids and salts (acid)
NEUTRACID BO 45	a	liquid	organic/inorganic buffering compound (pH acid)
SI-CONTROL KKV	no	liquid	modified silicate of soda with deposit inhibitors and dispersing agents

PRODUCTS TO REMOVE PES OLIGOMERS

	Ionic character	Appearance	Chemical base
CHT-DISPERGATOR XHT-S	a/n	liquid	preparation of polyglycol ether derivatives
INTENSOL OLI	n/c	liquid	quaternary ammonium compound

FIBRE PROTECTION AGENTS FOR WOOL

	Ionic character	Appearance	Chemical base
MEROPAN EW	a	liquid	proteolytic product

BOILING PROTECTION AND OXIDATION AGENTS

	Ionic character	Appearance	Chemical base
MEROPAN LAT	a	liquid	nitrobenzene sulphonate
MEROPAN XR GRANULAT	a	granulate	nitrobenzene sulphonate

REDUCTION AGENTS

	Ionic character	Appearance	Chemical base	Fibre type
REDULIT GIN	a	liquid	glucose blend with dispersing agents	PES PES/CEL
REDULIT RED	no	liquid	sulphinic acid derivative	PES

PEROXIEDE DESTRUCTION

	Ionic character	Appearance	Chemical base	Fibre type
CHT-CATALASE BF	no	liquid	enzyme for destroying residual peroxide after prebleaching	CEL
MEROPAN BRE	no	liquid	inorganic salt	CEL

FASTNESS IMPROVEMENTS OF DYEINGS AND PRINTS

CELLULOSE AND CELLULOSE BLENDS

AFTERSOAPING AGENT	Dyestuff classes						Chemical base	
	Ionic character	Appearance	Reactive	Vat	Sulphur	Coupling dyes		
COTOBLANC KRS	a	liquid	x	x		x	mixture of polyacrylates and modified phosphonates	
COTOBLANC NSR	a	powder	x				mixture of organic and inorganic compounds	
COTOBLANC PCS	a	liquid	x				mixture of sequestering agents and dyestuff affine polymers	
COTOBLANC RS	no	powder		x		x	colloidal system free of surfactants	
COTOBLANC SEL / SEL 200	a	liquid	x				mixture of sequestering agents and dyestuff affine polymers	
MEROPAN DA/DA 200	a	liquid	x	x		x	polycarboxylic acid and phosphonates	
MEROPAN DPE	a	liquid	x	x		x	polycarboxylic acid and phosphonates	
SARABID DLO CONC.	n	liquid	reductive cleaning of CEL/PES blends					combination of ethoxylates
SARABID OL	n	liquid	x	x	x	x	fatty alcohol polyglycol ether	

CATIONIC AFTERTREATMENT	Dyestuff classes				suitable for		Application fields Improvement of the fastness level		Chemical base
	Ionic character	Appearance	Reactive	Direct	Exhaust procedure	Padding procedure	Washing	Contact fastness	
REVOFIX WET*	c	liquid			x	x			polyurethane dispersion
REWID ACP	c	liquid	x	x	x		x	x	polyammonium compound
REWID DMT-N	c	liquid	x	x	x		x	x	polyammonium compound
REWID FSN	c	liquid	x	x	x	x	x	x	polyammonium compound

* improves the dry rubbing fastness and especially the wet rubbing fastness on CEL and synthetic fibres

POLYAMIDE

	Ionic character	Appearance	Chemical base
PAFIX No1 / PAFIX No1 CONC.	a	liquid	aromatic sulphonates
REWIK KF	a	liquid	aromatic sulphonates
REWIK KMB	a	liquid	aromatic sulphonates
REWIK KNR	a	liquid	aromatic sulphonates

CELLULASES FOR SURFACE TREATMENT OF FABRICS AND KNITWEAR

	Ionic character	Appearance	Chemical base	pH and temperature range for highest efficiency
BEIZYM ACE	n	liquid	cellulase	pH 4.5 – 5.5; 45 – 55°C
BEIZYM BPN 300	n	liquid	cellulase, neutral	pH 5 – 8; 45 – 55°C
BEIZYM HC	n	liquid	cellulase	pH 4.5 – 5.5; 45 – 55°C
BEIZYM SPELL	n	liquid	cellulase	pH 5 – 7; 40 – 55°C
BEIZYM UL	n	liquid	cellulase	pH 5 – 7; 40 – 55°C

AUXILIARIES FOR WASTE WATER TREATMENT

	Ionic character	Appearance	Chemical base	Application field
CHT-FLOCKUNGSMITTEL ACL	a	granulate	modified polyacrylamide	flocculant for improving sedimentation
CHT-FLOCKUNGSMITTEL CV	c	liquid	condensation product containing nitrogen	cationic flocculant

PRODUCT INDEX

BEIZYM ACE (n · liq)

Mixture of cellulases (acid)

BEIZYM ACE is a highly effective cellulase for the following application fields: removal of fibre fluffs, pillings, abrasions on cotton and defibrillation of Lyocell fibres. BEIZYM ACE is suitable for the enzymatic treatment of blue denim articles. The following effects are obtained: reduced pilling, clear surface structures, less fibre fluffs at the surface, improved handle, higher surface smoothness and silky brilliance.

0.2 – 1% BEIZYM ACE for surface treatment (pH 4.5 – 5.5; temp. 45 – 55°C)

BEIZYM BPN 300 (n · liq)

Mixture of cellulases (neutral)

Concentrated neutral cellulase with broad application spectrum. BEIZYM BPN 300 is a cellulase product for the biofinish treatment of cotton and cotton blends, particularly for dyed articles and for surface treatment. The application of BEIZYM BPN 300 results in considerable advantages compared with customary acid cellulases:

- ▶ Broad application field of pH 5.0 – 8.0, thus higher process safety and reproducibility
- ▶ Much less bleeding when treating dyed articles in the neutral pH range
- ▶ No or clearly less colour shade changes when working in a neutral pH range
- ▶ Less weight loss and loss of strength

0.5 – 2% BEIZYM BPN 300,
(pH 5 – 8; temp. 45 – 55°C)

BEIZYM HC (n · liq)

Mixture of cellulases (acid)

Mixture of highly concentrated cellulases with a broad application field. The two main fields are surface treatment of fabrics and knitwear as well as the enzymatic treatment of blue denim articles. With BEIZYM HC fibre fluff, abrasion spots and pillings are removed from textile surfaces. BEIZYM HC leads to less shade deviations than conventional acid cellulases. Another advantage is that BEIZYM HC has less influence on the tear resistance of the treated fabric qualities.

0.25 – 0.5% BEIZYM HC for surface treatment (pH 4.5 – 5.5; temp. 45 – 55°C)

BEIZYM SPELL (n · fl)

Cellulases blend

In comparison to a surface treatment with common cellulases BEIZYM SPELL has the

following advantages:

- ▶ efficient on CV and on highly twisted CO qualities and its blends
- ▶ efficient on turquoise, black and critical shades as well as on striped articles with different colours
- ▶ clearly less staining when treating dyed articles in a neutral pH range at 40°C
- ▶ no or clearly less shade deviations when working in a neutral pH range
- ▶ reduced weight or strength losses
- ▶ contains lint dispersants

0.5 – 2.0% BEIZYM SPELL
(pH 5 – 7; temp. 40 – 60°C)

BEIZYM UL (n · liq)

Mixture of cellulases (acid)

Mixture of cellulases with broad application spectrum. The two main application fields are surface treatment of fabrics and knits as well as enzymatic treatment of blue denim articles. With BEIZYM UL fibre fluffs, chafe marks and pilling on textile surfaces are removed. On Lyocell fibres BEIZYM UL is applied for defibrillation. In the treatment of blue denim articles BEIZYM UL is applied on most different enzymatic stone processes.

0.75 – 2% BEIZYM UL for surface treatment (pH 4.5 – 5.5; temp. 45 – 55°C)

0.7 – 2% BEIZYM UL on blue denim
(pH 4.5 – 5.5; temp. 45 – 55°C)

BIAVIN 109 (a · liq)

Emulsified fat compound

Concentrated gliding agent and crease preventing agent. Dyeing machines can carry a higher load or the liquor ratio may be reduced which reflects in a considerable savings of salt, alkali and energy. Since it is resistant to acids, BIAVIN 109 can also be used for one-bath dyeing of fibre blends with reactive, acid or disperse dyes. A stock solution can be prepared.

Max. 0.3 g/l BIAVIN 109

BIAVIN BLI (n · liq)

Special polymer amides

BIAVIN BLI is mainly used for dyeing wool and wool mixtures in all forms and on all common machines and dyeing apparatus. Particularly under boiling temperature conditions, permanent fixation of the wool (= "setting") is decreased to a large extent. The mechanical properties of the wool are improved and thus the quality of the wool is increased.

BLIAVIN BLI minimizes the permanent fixation of the wool when dyeing it as yarn. Thus a better yarn elasticity is achieved and this results in better weaving and knitting properties. Permanent fixation of the wool when dyeing it as piece goods is also decreased. This minimizes running creases and crease marks. The mechanical stability such as tearing and abrasion resistance is improved and a better dimension stability during absorption of the moisture results. Felting of the wool is minimized in all wet treatment steps and a more even appearance in all forms results. Improvement of the running properties and gliding effect of wool and polyamide fibres: 1 – 2 g/l BLIAVIN BLI
Reduction of wool felting: 1 – 2 g/l BLIAVIN BLI
In extreme cases it is possible to work with higher concentrations without danger of retention.
For anti-setting effects in acid pH ranges up to pH 4: 1 – 2 g/l BLIAVIN BLI

BLIAVIN BPA (no · liq)

Polymeric amides

BLIAVIN BPA is a universally applicable crease preventing agent and lubricant. Sensitive qualities have better gliding properties and have a lower tendency to form creases if there is less mechanical friction and less mechanical load. BLIAVIN BPA increases the liquor viscosity and therefore more liquor adheres to the product. The product is non-foaming and can be applied on all machines of cellulose dyeing and for all blends. 0.5 – 2 g/l BLIAVIN BPA in long liquors, 1 – 2 g/l BLIAVIN BPA in short liquors

BLIAVIN DFG (a · liq)

Combination of polymer dispersion and sequestering agent

BLIAVIN DFG is a crease preventing agent, lubricant and sequestering agent for cellulose fibres and cellulose fibre mixtures as well as for synthetic fibres by exhaust method. BLIAVIN DFG gives good running properties and prevents creases on the material. The product also has a sequestering effect in an alkaline medium on hardening substances. Mechanical rubbing is reduced, the viscosity of the liquor is increased and the fabric tends less to crease formation. A part of the product remains on the fabric which improves

the sewability. The application quantities depend on the machine, the substrate and the liquor ratio: 1 – 3 g/l BLIAVIN DFG

BLIAVIN PCV (a · liq)

Phosphor acid ester

Outstanding fibre/fibre gliding agent that can prevent the formation of creases in pretreatment or in the dyeing bath at room temperature or at higher temperatures (130 – 140 °C) of cellulosic and synthetic fibres.

BLIAVIN PCV gives synthetic materials an antistatic effect and improves the handle when applied in aftertreatment.

BLIAVIN PCV is low-foaming so that it can be applied on jets very well.

BLIAVIN PCV impairs neither the dyestuff yield nor the light fastnesses and the fastnesses of dispersion dyes when used in aftertreatment.

BLIAVIN PCV should be added at the beginning of pretreatment or dyeing as follows:

0.5 – 2 g/l BLIAVIN PCV in long liquors

1 – 2 g/l BLIAVIN PCV in short liquors

BLIAVIN TCC (n · liq)

Polyethylene emulsion

Crease preventing agent and lubricant for cellulose fibres, mixtures and synthetic fibres. It is particularly suitable for microfibrils and blends with elastane.

BLIAVIN TCC is low foaming and can be used in dyeing on all machines.

Application quantities:

0.5 – 2 g/l BLIAVIN TCC

CHT-CATALASE BF (no · liq)

Catalase

Enzymatic auxiliary for destroying residual peroxide after bleaching. The following advantages are achieved through the application of CHT-CATALASE BF:

- ▶ less water consumption
- ▶ no ecological wastewater pollution
- ▶ dyeing in the same bath possible

0.2 – 0.5 g/l CHT-CATALASE BF

pH range: 4 – 9

temperature: cold – 60 °C

CHT-DISPERGATOR ORM (a · liq)

Aromatic sulphonates

Universally applicable dispersing agent, levelling agent and special stripping agent. CHT-DISPERGATOR ORM has an outstanding dispersing effect in a broad pH

range. Handle of the treated fabric is not impaired at all.

The product is non-foaming.

1 – 4 g/l CHT-DISPERGATOR ORM

CHT-DISPERGATOR SMS (a · liq)

Aromatic sulphonates

Universally applicable dispersing agent, levelling agent and special stripping agent. CHT-DISPERGATOR SMS has an outstanding dispersing effect in a broad pH range. Handle of the treated fabric is not impaired at all.

The product is non-foaming.

0.5 – 2 g/l CHT-DISPERGATOR SMS

CHT-DISPERGATOR XHT-S (a/n · liq)

Preparation of polyglycol ether derivatives

Low-foaming and APEO-free dispersing/levelling agent for dyeing polyester and blends. CHT-DISPERGATOR XHT-S stands out for its very good dispersing and levelling capacity. It promotes the fine distribution and thus migration of disperse dyes throughout the entire temperature range and in this way prevents dyestuff agglomerations. Its outstanding property is stabilisation of the dispersion. Problems with unlevelness due to lack of dispersion stability can be solved with CHT-DISPERGATOR XHT-S. Light fastness of polyester dyed with CHT-DISPERGATOR XHT-S is not impaired.

0.5 – 3 g/l CHT-DISPERGATOR XHT-S

(depending on the application)

CHT-FLOCKUNGSMITTEL ACL (a · gran)

Modified polyacrylamide

Flocculant for decolorizing wastewater in combination with cationic flocculants. CHT-FLOCKUNGSMITTEL ACL accelerates the sedimentation of flocculated wastewater contents, makes filtration easier and leads to a higher dry content of the mud. A 0.1 % solution of CHT-FLOCKUNGSMITTEL ACL is added to the flocculated substance after dyeing.

CHT-FLOCKUNGSMITTEL CV (c · liq)

Condensation product containing nitrogen

Flocculant for wastewater decolorizing in textile finishing. CHT-FLOCKUNGSMITTEL CV has a high affinity to anionic dyestuffs and is applied for removal of anionic dyes, most of all of reactive dyes and hydrolyzates. The precipitated dyestuffs are removed by sedimentation and filtration from the

wastewater in suitable plants.

0.1 – 1 g/l CHT-FLOCKUNGSMITTEL CV, depending on the amount of residual dyestuff

COLORCONTIN BDF (a · liq)

Combination of non-ionic and anionic substances

Frosting prevention agent for continuous PA carpet dyeing. Promotes wetting of the material and levelness of the dyeing. With COLORCONTIN BDF you get a stable foam with fine bubbles in the steamer. Special product for continuous PA ribbon dyeing. It evens out the colour bath application and acts as frost prevention agent and in this way increases the colour levelness. 1 – 3 g/l COLORCONTIN BDF in PA continuous carpet dyeing
5 – 20 g/l COLORCONTIN BDF in PA ribbon continuous dyeing

COLORCONTIN VGP (a · liq)

Phosphor acid ester

Padding auxiliary for continuous dyeings on cellulose fibres and cellulose fibre mixtures. COLORCONTIN VGP is applied as penetration agent and deaerating agent including cold pad batch dyeing, for pad-jig procedures and for deaerating wound packages. It is most efficient at cold temperatures and up to 40°C. COLORCONTIN VGP is compatible with reactive, vat, direct, sulphur and dispersion dyes. It is not retarding. 2 – 5 g/l COLORCONTIN VGP for pad dyeing processes, 0.5 – 2 g/l COLORCONTIN VGP in long liquors

COTOBLANC KRS (a · liq)

Mixture of polyacrylates and modified phosphonates

COTOBLANC KRS serves to remove the unfixed reactive dye from reactive dyeings and reactive printings. As liquid product COTOBLANC KRS is suitable for aftertreatment processes on continuous aggregates, yarn dyeing apparatus and piece dyeing machines. Being non-foaming, well miscible with cold water and being dosable without problems an easy handling is guaranteed. The product does not contain any surfactant and is absolutely non-foaming. It has no surface tension and is not subject to the European regulation concerning detergents.

Continuous aftertreatment:

reactive dyeing 1 – 3 g/l COTOBLANC KRS

Aftertreatment of prints:

prints with reactive dyes 2.5 – 5 g/l COTOBLANC KRS

COTOBLANC NSR (a · pow)

Mixture of organic and inorganic sequestering agents and dispersing agents

COTOBLANC NSR pushes out non-fixed parts of the dyestuffs which stick to the surface and keeps them in the treatment liquor. A reabsorption can be prevented effectively. Being non-foaming COTOBLANC NSR can be used on all ranges. Due to its very good effectiveness COTOBLANC NSR allows savings of time, energy and rinsing baths. The product is free from surfactants; it does not have any surface tension and is not subject to the European regulation concerning detergents. 0.2 – 0.5 g/l COTOBLANC NSR

COTOBLANC PCS (a · liq)

Mixture of sequestrants and polymers with affinity to the dyestuff

Surfactant-free and non-foaming special product for removing reactive dyestuff hydrolysate from reactive dyeings and reactive prints from liquors containing electrolyte. Being a liquid product, COTOBLANC PCS is suitable for aftertreatment processes on continuous machines, yarn and piece dyeing machines. The product is easy to handle since it does not foam at all, is well miscible with cold water and easy dosing is ensured. A special feature of COTOBLANC PCS is its efficiency in the presence of electrolyte. On light dyeings (< 1.5% dyestuff) an intermediate rinsing before the actual soaping process may be omitted by using 1 – 2 g/l COTOBLANC PCS. For soaping darker dyeings (> 1.5%) without intermediate rinsing, we recommend using COTOBLANC SEL or COTOBLANC SEL 200.

COTOBLANC RS (no · pow)

Colloidal system free of surfactants

Special non-foaming product to remove non-fixed dye pigments. Particularly suitable to aftersoap vat dyeings. COTOBLANC RS removes non-fixed dyes and dyes adhering on the surface from the material, disperses them and prevents them from reabsorption. The product is free from surfactants and absolutely foam-

free. It does not have surface tension and is not subject to the European regulation concerning detergents.

0.5 g/l COTOBLANC RS with LR 1 : 10,
1 g/l COTOBLANC RS with LR < 1 : 10

COTOBLANC SEL (a · liq)

Mixture of sequestrants and polymers with affinity to the dyestuff

COTOBLANC SEL dissolves non-fixed reactive dyes from cellulose substrates. The product holds dissolved hydrolysate in the liquor and prevents its reabsorption. The efficiency of COTOBLANC SEL helps to save rinsing baths and also soaping baths because residues of salt and dyestuff hardly disturb the soaping process. Depending on the reactive dyestuff anchor, neutralisation is done after rinsing and the correct pH value is adjusted before afterwashing at the boil. The recommendations from the dyestuff producers are to be observed: for reactive dyestuffs with a vinyl sulphone anchor a pH value of 6.5 – 8 is recommended, for reactive dyestuffs with other anchor systems (such as monochlorite triazine) a pH value between 7 and 9 is recommended.

COTOBLANC SEL can be applied on continuous plants, yarn dyeing machines and jets or the like. On dark dyeings, best fastnesses are achieved using COTOBLANC SEL. When rewashing yarn-dyed materials, bleeding of the light colours or white is prevented to a large extent. COTOBLANC SEL does not contain any surfactant and is therefore absolutely foam-free. It has no surface tension and is not subject to the European regulation concerning detergents.

Continuous treatment:

0.5 – 2 g/l COTOBLANC SEL

Piece dyeing machines:

0.3 – 2 g/l COTOBLANC SEL

COTOBLANC SEL 200 (a · liq)

Mixture of sequestrants and polymers with affinity to the dyestuff

COTOBLANC SEL 200 is chemically comparative, but more concentrated than COTOBLANC SEL and therefore has different application quantities.

Continuous treatment:

0.3 – 1.5 g/l COTOBLANC SEL 200

Piece dyeing machines:

0.2 – 1.5 g/l COTOBLANC SEL 200

EGASOL MD (a · liq)**Aromatic carboxylic acid ester**

Low foaming levelling agent for polyester in the HT range with levelling, dispersing and migrating properties. EGASOL MD has an affinity to dyes and fibres, and it has a dyeing accelerating effect. Due to the dyeing accelerating and levelling effect EGASOL MD is also well suitable for polyester microfibrils.

Application quantity: 0.5 – 2%

EGASOL SF (no · liq)**Inorganic buffer solution**

EGASOL SF is used as an alkali donor for reactive dyeing on CEL and its blends. EGASOL SF guarantees an optimum pH control throughout the entire dyeing process. Approx. 1.5 – 3.5 g/l EGASOL SF depending on the colour depth.

EGASOL UP (a · liq)**Aromatic carboxylic acid ester**

During heating up EGASOL UP makes dispersion dyes to be synchronously absorbed. Furthermore, EGASOL UP improves the migration capacity of dyes, so that levelled dyeings can be supplied. Due to its excellent dispersing effect EGASOL UP prevents agglomerations of dispersion dyes. The application of additional dispersing or levelling agents is not absolutely necessary. EGASOL UP has a good oil emulsifying effect. Oily soiling caused by greases or coning oils of looms and knitting machines is emulsified and dispersed by corresponding application quantities applied for dyeing even without pretreatment, so that there are no markings in the end. The product keeps high oil quantities emulsified during dyeing under HT conditions, without any stain formation. EGASOL UP is low foaming and excellently suited to be applied on jets and overflow machines. For thread dyeing we recommend applying CHT-DISPERGATOR XHT-S due to its improved dispersion stability and oligomer dispersion in combination with EGASOL UP. There is no influence on the light fastness properties of the polyester dyed with EGASOL UP with application quantities of 0.5 – 2.0 g/l. The product can be used for dyeing automotive parts. For dyeing Trevira CS, microfibrils and Coolmax EGASOL UP is also suited, for darker shades the addition of a diffusion accelerator may be necessary.
1 – 2% EGASOL UP

INTENSOL OLI (n/c · liq)**Quaternary ammonium compound**

INTENSOL OLI has the characteristic to saponify oligomers in the presence of alkali at temperatures between 80°C and 130°C. The various components are mixed in such a way that a reliable boiling out of apparatus and machines is guaranteed. Deposits of dyestuffs, oligomers, preparations and hardeners are dissolved and dispersed by the precipitation inhibitors so that they do not redeposit in the machine parts when drained.

Machine cleaning at the boil:

2 – 5 g/l INTENSOL OLI

Reductive aftercleaning:

1 – 3% INTENSOL OLI

HEPTOL SF 4 (a · liq)**Synergetic mix of different phosphonates**

HEPTOL SF 4 has a very high sequestering power on alkaline earth ions and prevents the formation of alkaline earth silicates, alkaline earth carbonates and alkaline earth hydroxides and of heavy metal ions in an alkaline medium. HEPTOL SF 4 can be applied as sequestering agent in processes of pretreatment and dyeing. 0.5 – 3 g/l HEPTOL SF 4 depending on the metal content

KERIOLAN A2N (d · liq)**Polyglycol ether derivative**

Levelling agent for dyeing wool and wool blends. The product controls the absorption rate of dyestuffs and increases their migration properties, so that even dyeings are achieved. KERIOLAN A2N does not impair the fastness level of the dyeings. If PAN/WO blends are dyed with cationic or anionic dyes according to the single-bath dyeing process, KERIOLAN A2N will guarantee a good dye bath stability due to its good dispersing effect.
0.5 – 2% KERIOLAN A2N

MEROPAN BRE (no · liq)**Inorganic salt**

MEROPAN BRE is applied for single-bath, two-step oxidative bleaching and dyeing of reactive dyestuffs on cellulose fibres. MEROPAN BRE quantitatively destroys the residual peroxide after the bleach so that it is possible to add reactive dyestuff to the same liquor and to dye. The process

technique is especially interesting when reactive hot dyeing processes are used. A slight surplus of MEROPAN BRE does not impair the subsequent dyeing. The application quantity of MEROPAN BRE is usually twice as much as the residual peroxide after the bleach (H₂O₂ 35%). The necessary quantity of MEROPAN BRE can be calculated if you know the residual peroxide quantity resp. if this value can be determined by means of titration.

MEROPAN CIT (a · liq)**Organic/inorganic buffer mixture**

Buffer for PES-dyeing with good sequestering, dispersing properties. MEROPAN CIT has a high binding capacity of heavy metal ions. It allows to maintain a constant slightly acid pH range (4.5 – 5.5). Metal complex dyestuffs are not influenced.
0.5 – 2 g/l MEROPAN CIT

MEROPAN DA (a · liq)**Polycarboxylic acid and modified phosphonates**

MEROPAN DA is a protective colloid with sequestering properties for hardening agents when prewashing, dyeing and aftersoaping cellulose and cellulose fibre blends. It disperses the cotton accompanying substances insoluble in alkaline liquors. Dyestuffs containing metal are not stripped. MEROPAN DA is non-foaming and has no dyestuff retaining property.
1 – 4 g/l MEROPAN DA

MEROPAN DA 200 (a · liq)**Polycarboxylic acids and modified phosphonates**

MEROPAN DA 200 is the double concentrated form of MEROPAN DA.

MEROPAN DPE (a · liq)**Polycarboxylic acids and modified phosphonates**

MEROPAN DPE is a protective colloid with sequestering properties for hardening agents when prewashing and dyeing cellulose and cellulose fibre blends. MEROPAN DPE disperses the cotton accompanying substances insoluble in alkaline liquors. Dyestuffs containing metal are not stripped. MEROPAN DPE is non-foaming and has no dyestuff retaining property. 1 – 4 g/l MEROPAN DPE

MEROPAN EF 200 (n · liq)**Special esters**

Acid donor when dyeing polyamide and wool. MEROPAN EF 200 is slowly saponified during the heating and boiling phase of the dyeing process. The acid being released in this way slowly and evenly moves the pH value into the acid range. Thus, favourable conditions for achieving even dyeings are created. In combination with suitable levelling agents (e.g. SARABID IPD, SARABID IPF, SARABID IPM and KERIOLAN A2N), an excellent colour levelness is achieved.

0.25 – 1 ml/l MEROPAN EF 200

MEROPAN EW (a · liq)**Proteolytic products**

Fibre protecting and levelling agent for wool dyeing. If used in the dyeing bath MEROPAN EW will prevent water-soluble accompanying substances from being removed from the wool. The characteristic features of the wool concerning softness, gloss and elasticity are preserved. Furthermore, the levelling behaviour of the wool dyestuffs is improved.

2 – 3% MEROPAN EW

MEROPAN KP (no · liq)**Mixture of organic acids and salts**

MEROPAN KP is a phosphate-free buffer and is applied to adjust pH values to approx. 3.5 – 7. The product is applied in dyeing baths for polyamide, polyamide carpets, polyester and wool. MEROPAN KP makes sure the pH value remains stable during the dyeing process. The product forms complexes with heavy metal ions and prevents changes of colour shade when applying dyestuffs containing iron or copper. Metalliferous dyes are not impaired by MEROPAN KP and the product can be pumped. The application quantities depend on the water quality and the additions to the dyeing liquors.

With 0.5 – 1 g/l MEROPAN KP pH values between 4 – 5.5 are achieved.

With 1.5 – 3 g/l MEROPAN KP pH values between 3 – 3.5 are achieved.

MEROPAN LAT (a · liq)**Nitrobenzene sulphonate**

MEROPAN LAT is applied as weak oxidation agent in textile finishing. It prevents negative influences of reducing effects in the treatment baths when scouring and

dyeing. In vat dyeing the product is used for the oxidation of dyestuffs.

3 – 6 g/l MEROPAN LAT

MEROPAN XR GRANULAT (a · gran)**Sodium-m-nitrobenzene sulphonate**

MEROPAN XR GRANULAT is used as a mild oxidising agent for textile finishing and prevents the unwelcome reducing effects during the various finishing steps. In direct and reactive dyeing MEROPAN XR GRANULAT prevents the dyestuff from boiling off in direct and reactive dyeing processes. In the pad steam process with direct and reactive dyes, MEROPAN XR GRANULAT avoids damages caused by chemicals which are contained in the steam. For vat dyeing it is used as mild oxidising agents.

1 – 2 g/l MEROPAN XR GRANULAT for reactive and direct dyeing.

5 – 10 g/l MEROPAN XR GRANULAT for the pad-steam process with reactive dyes, approx. 3 g/l MEROPAN XR GRANULAT in vat dyeing during oxidation

MIGRASOL SAP (a · liq)**Aqueous solution of a polymer****Na-acrylamide/acrylate**

Migration inhibitor for continuous dyeing. MIGRASOL SAP prevents migration of disperse, vat, sulphur and pigment dyes in pad dyeing procedures on cotton, polyester and their blends.

Due to the better penetration and because of the lower surface migration, a more even fabric appearance is obtained. MIGRASOL SAP is most efficient in pH ranges between 5 and 9.

MIGRASOL SAP can be rinsed out easily and is non-foaming.

Cotton fabric:

10 – 15 g/l MIGRASOL SAP

Synthetic fibres:

10 – 20 g/l MIGRASOL SAP

PES/CO blends:

5 – 15 g/l MIGRASOL SAP

NEUTRACID BO 45 (a · liq)**Organic/inorganic buffer mix**

Slightly acid buffer, preferably for polyester and wool dyeings in a pH range of 4 – 5. The product has an outstanding buffer capacity which guarantees the highest possible pH constancy in dyeing baths. 1 – 2 ml/l NEUTRACID BO 45 (polyester dyeings) 2 – 5 ml/l NEUTRACID BO 45 (wool

dyeings; depending on the wool quality a stronger buffer such as MEROPAN KP may have to be added). The product is also highly suitable for optically brightening polyamide/cellulose mixtures. 0.5 – 2 ml/l NEUTRACID BO 45

PAFIX No1 / PAFIX No1 CONC. (a · liq)**Condensation product of aromatic sulphonic acids**

PAFIX No1 / PAFIX No1 CONC. is an all-round fixing agent for PA dyeings. Being a phenol-free product PAFIX No1 / PAFIX No1 CONC. is excellently suited both for standard shades and for brilliant PA dyeings with fluorescent dyestuffs.

PAFIX No1 / PAFIX No1 CONC. has the following advantages:

- ▶ Stable to acids: can be dosed, stable to jets, suited for continuous procedures (PA tape dyeing)
 - ▶ Heat-stable: subsequent heat-setting or steaming processes do not influence the effects or if so, only to a minor extent
 - ▶ Hardly any influence on the shade or on yellowing and therefore ideal for pastel shades and brilliant colours
 - ▶ Neutral with regard to the light fastness
- The post-treatment process with PAFIX No1 / PAFIX No1 CONC. must be adjusted to the corresponding shade.

Standard shades:

2 – 4% PAFIX No1, pH 4 – 5, 70 – 80 °C

2 – 3% PAFIX No1 CONC.

Brilliant fluorescent dyestuffs:

2 – 5% PAFIX No1, pH 5.5*, 65 °C*

2 – 4% PAFIX No1 CONC.*

* For further details, see technical leaflet

REDULIT GIN (a · liq)**Glucose mix with dispersing agents**

REDULIT GIN is a liquid reduction agent mix for aftercleaning polyester dyeings. REDULIT GIN has a reductive effect in the alkaline pH range. After dyeing, the bath is cooled down to 70 – 80 °C. In this bath the pH value is adjusted alkaline. REDULIT GIN is added to this bath. The dispersing agents contained in this product additionally improve the fastness level. Unfixed and destroyed dyestuff can be detached more easily due to the dispersing and can be kept in the treatment liquor. For very deep shades the reductive cleaning should be carried out in a separate bath. REDULIT GIN does not foam so that it can be applied on all dyeing machines. Due to the stability to

air oxygen, it can also be easily applied on jets and open systems. REDULIT GIN also disperses oligomers. In case of extreme oligomer problems, we recommend adding 3% CHT DISPERSATOR XHT-S or 2 g/l INTENSOL OLI to the dyeing bath. REDULIT GIN is sulphur-free and is based on renewable raw materials. REDULIT GIN is easily biodegradable and has little odour.

Reductive cleaning:

4 g/l NaOH 50 °Bé + 2 g/l REDULIT GIN, 20 minutes, 80 °C

REDULIT RED (no · liq)

Sulphinic acid derivative

REDULIT RED is a reduction agent for afterscouring PES in acid dyeing baths. It is also well suitable for the reductive cleaning of polyester with wool, cotton, polyacrylonitrile etc. The application amount of REDULIT RED depends on the colour depth and the dyestuff components. After cooling down the dyeing bath to 70 – 80 °C, 2 ml/l acetic acid 60% are added.

For medium shades:

1 – 1.5 ml/l REDULIT RED

For dark shades:

1.5 – 2 ml/l REDULIT RED

RETINOL M (n · liq)

Polyfunctional nitrogen compound

RETINOL M can be used for stripping dyeings in blind vat and for pulling down dyeings which turned out too dark. Good stripping and pulling down effects are mainly achieved with vat, sulphur, direct and reactive dyestuffs. RETINOL M is also applied for washing out prints. Due to the dyestuff affinity, a staining of the white can be prevented.

1 – 3 g/l RETINOL M for pulling down,
2 – 5 g/l RETINOL M for stripping in the blind vat, approx. 2 g/l RETINOL M for washing out prints

REVOFIX WET (c · liq)

Polyurethane dispersion

Distinctly improves the dry rubbing fastness and especially the wet rubbing fastness on CEL and synthetic fibres. The product is applied for the aftertreatment of dyeings and prints.

REVOFIX WET is universally applicable. Main application fields are PES/dispersion, CEL/reactive, vat, sulphur, pigment.

Preliminary tests have to be carried out on Indigo to check if the necessary fastnesses are impaired.

Exhaust process:

3.0 – 5.0% REVOFIX WET

Padding Process:

30 – 60 g/l REVOFIX WET

Its compatibility with softeners and easy-care finishes has to be checked in preliminary trials.

REWIN ACP (c · liq)

Polyammonium compound

REWIN ACP improves the wash fastness and wet fastnesses of dyeings with reactive and direct dyestuffs on natural and regenerated cellulose fibres. REWIN ACP meets highest fastness demands made to an aftertreatment agent today.

2 – 3% REWIN ACP

REWIN DMT-N (c · liq)

Polyammonium compound

REWIN DMT-N improves the wet fastness and wash fastness of dyeings with reactive dyestuffs on cellulose fibres. REWIN DMT-N highly improves the wash fastness at 60 °C of reactive dyeings, especially in critical reactive red and scarlet ranges.

2 – 3% REWIN DMT-N

REWIN FSN (c · liq)

Polyammonium compound

REWIN FSN is applied as cationic aftertreatment agent with affinity to the fibre for improving the wash fastnesses of dyeings with direct and reactive dyes on cellulose fibres. Aside from the good wash fastness improvement, the contact fastnesses of direct and reactive dyeings on cellulose fibres are improved very much. REWIN FSN can be applied in exhaust as well as in padding procedures.

2 – 3% REWIN FSN

REWIN KF (a · liq)

Aromatic sulphonate

REWIN KF is a universal aftertreatment agent to improve the wet fastness properties of polyamide dyeings and prints. An outstanding characteristic of the product is the enormous stability to acids, jet and PA levelling agents. It allows a one-bath aftertreatment in the cooling down dyeing bath with SARABID IPM as levelling agent. In case of application in a new aftertreatment

bath with intermediate rinsing, all currently used PA levelling agents can be applied. Good improvement of washfastness of light to medium colour shades up to washing at 40 °C.

3 – 5% REWIN KF

REWIN KMB (a · liq)

Aromatic sulphonate

REWIN KMB is applied for one-bath dyeing and fastness improving aftertreatment of polyamide. When dyeing polyamide with acid dyestuffs, REWIN KMB has a positive influence on the levelness. The fibre surface is covered with a coat that prevents the dyestuff from discharging. A better fastness level is achieved. The product is stable to shearing forces and to a large extent stable to non-ionic residual substances.

2 – 4% REWIN KMB

REWIN KNR (a · liq)

Condensation product of aromatic sulphonic acids

Fastness improving aftertreatment agent for PA dyeings.

Good washfastness improvement for light to medium colour shades up to washing at 50 °C.

2 – 4% REWIN KNR

SARABID 200 LL (n · fla)

Alkyl polyglycol ether

Universally applicable dyeing auxiliary. SARABID 200 LL mainly serves as dyeing auxiliary with supplementary good washing, wetting and dispersing properties. SARABID 200 LL is applied advantageously for: dyeing of PAN with basic dyes, dyeing of wool with 1:1 metal complex dyes, dyeing of fibre mixtures of PAN/WO, PAN/CO and PAN/PES as well as semi-wool.

0.3 – 1 g/l SARABID 200 LL

SARABID DLC (a · liq)

Solution of polymers

Levelling agent for direct dyes on cellulose fibres. Excellent levelling power without dye retention worth mentioning. The different absorbing power of direct dyes is levelled out and a regular build-up behaviour is obtained. SARABID DLC is non-foaming and can be applied on all machines and apparatuses.

0.5 – 1.5 g/l SARABID DLC depending on colour depth and liquor ratio

SARABID DLO CONC. (n · liq)**Combination of special ethoxylates**

Dyestuff affinity auxiliary for pretreatment, dyeing and aftertreatment. Due to its dyestuff affinity character, its good dispersing capacity and high washing power the product has a broad field of application, e. g.:

- ▶ pre-washing of CV, CA and synthetic fibres
- ▶ intermediate and aftercleaning of PES and PES/WO qualities
- ▶ dyeing of wool, semi-wool and PA fibres 1 – 2 g/l SARABID DLO CONC.
- ▶ bleaching of coloured goods for vat dyeings

SARABID IPD (n · psc)**Fatty amine polyglycol ether**

SARABID IPD is a low foaming, highly efficient levelling agent for dyeing polyamide with acid and 1:2 metal complex dyes. SARABID IPD is a levelling auxiliary with affinity to the dyestuff. It controls the absorption speed of the dyestuffs in the heating up phase and promotes an even distribution of the dyestuffs in the migration phase. The product forms addition compounds with anionic dyestuffs which split again during the heating up and migration phase. This results in good bath exhaustion. SARABID IPD does not impair the wet and light fastnesses of the dyeings. It increases contrasts when continually dyeing anionically differentiated polyamide carpet fibres. Depending on the kind of polyamide fibre and the dye class, SARABID IPD is applied to the dyeing bath alone or in combination with the levelling agent SARABID IPF which has affinity to the fibre. 0.5 – 3% SARABID IPD

SARABID IPF (a · liq)**Aromatic sulphonate**

Levelling agent with affinity to the fibre for streaky dyed polyamide fibres. SARABID IPF is a levelling agent with affinity to the fibre which levels out streaky dyeing of PA with acid and 1:2 metal complex dyes. SARABID IPF is active as anionic retarder. It slows down and evens out absorption of the dyestuffs during the heating up phase and levelled dyeings result. The product is low foaming and therefore well suited for application on jet dyeing machines. It does not impair the colour fastnesses or the light fastnesses. Depending on the polyamide fibre and dyestuff class, SARABID IPF

is applied either alone in the dyebath or in combination with the dyestuff affine levelling agent SARABID IPD.

0.5 – 4% SARABID IPF

SARABID IPM (a · liq)**Composition of fatty amine polyglycol ether and aromatic sulphonates**

SARABID IPM is a low foaming, multifunctional levelling agent when dyeing polyamide with acid and 1:2 metal complex dyestuffs. The product has affinity to the polyamide fibre as well as to the dyestuffs which guarantees an exact control of the dyestuff composition and a levelled dyeing, even on streaky dyed articles. SARABID IPM stands out for the following properties:

- ▶ low foaming
- ▶ affinity to dyestuff and fibre
- ▶ imparts best surface levelness
- ▶ evens out streakiness caused by the material
- ▶ absorption speed of the dyestuffs is decelerated and therefore even absorption of the dyestuffs
- ▶ good and even dyestuff penetration
- ▶ no impact on the wet and light fastnesses of the dyeings

1 – 4% SARABID IPM

SARABID LDR (a · liq)**Special polymers**

SARABID LDR improves the solubility of reactive dyestuffs and disperses the dyes excellently. Due to the prevention of agglomerates, the levelness of the dyeing is improved. Dyes containing metals are not stripped. SARABID LDR is almost foam-free and can therefore be applied on all machines types. The product is stable to salt up to 120 g/l.

0.5 – 2 g/l SARABID LDR in the exhaust process,

3 – 10 g/l SARABID LDR in the continuous process

SARABID MIP (a · liq)**Mixture of special polymers, fatty alcohol ether phosphate, enzyme**

Multiprocess product for prewashing, dyeing and aftersoaping cellulose fibres and their blends. SARABID MIP is a mixture of numerous components with parts of very stable enzymes. Due to its large activity spectrum, it can be applied in many different processes and on all kinds of fibres. SARABID MIP has sequestering,

washing, pectine degrading and antcrease properties. It masks disturbing non-ionic parts and increases the liquor throughput in apparatus. When applied in the dyeing bath, the product can improve the fastnesses, particularly on dyeings with vat and sulphur dyes or on wool blends.

0.5 – 3 g/l SARABID MIP

SARABID OL (n · liq)**Special alkyl polyglycol ether**

Universally applicable dyeing auxiliary. Due to its chemical character SARABID OL has a good levelling effect towards anionic dyes and pigments as well as a good dispersing and washing effect. Therefore the product has a broad application field, e. g.:

- ▶ dispersing agent for dyeing PAN with basic dyes
- ▶ levelling agent for dyeing wool with 1:1 metal complex dyes
- ▶ dispersing and levelling agent for dyeing fibre mixtures: PAN/CO and PAN/WO
- ▶ levelling agent for dyeing semi-wool
- ▶ Application in PA (ribbon) dyeing, especially for aftercleaning on continuous wash compartments

0.5 – 2 g/l SARABID OL

SARABID PAW (n · liq)**Fatty amine polyglycol ether**

Levelling agent with affinity to the dyestuff when dyeing with wool reactive dyes, particularly for tippy dyeing wool fibre qualities.

0.5 – 2% SARABID PAW

SARABID VAT (c · liq)**Condensate containing nitrogen**

SARABID VAT is used as foam-free, not surface-active levelling agent for vat dyes without wetting, washing and protective colloid effect. SARABID VAT does not have any retarding effect and has affinity to dyes.

0.5 – 1.5 g/l SARABID VAT

with LR 1:30 – 1:15,

1 – 2 g/l SARABID VAT

with LR 1:15 – 1:8,

2 – 5 g/l SARABID VAT

with LR 1:8 – 1:3

SARAPOL BLU (a · liq)**Carboxylic acid ester**

Ecological dyeing accelerator for polyester fibres, Trevira CS, cationically dyeable PES and PES/Wool blends. Wool staining during dyeing of PES/ WO is low. SARAPOL BLU is

also suited for levelling out faulty dyeings.

SARAPOL BLU is bluesign® listed.

2 – 5% SARAPOL BLU at boiling

temperature

1.5 – 3% SARAPOL BLU at 102 – 120 °C

1 – 2% SARAPOL BLU at 120 °C and higher temperatures

SARAPOL DLN (a · liq)

Aromatic esters and hydrocarbons

SARAPOL DLN is a dyeing accelerator for dyeing PES and PES mixtures with good emulsion stability and good levelling capacity. SARAPOL DLN causes little soiling of wool with selected suitable disperse dyes for dyeing PES/WO blends at 98 – 120 °C (with wool protective agents), has good emission values and is well degradable in biological sewage plants. at 98 – 120 °C : 1.5 – 4 g/l SARAPOL DLN, at 120 – 130 °C : 0.5 – 1 g/l SARAPOL DLN

Si-CONTROL KKV (no · liq)

Modified silicate of soda with deposit inhibitors and dispersing agents

Si-CONTROL KKV is a modified silicate of soda and serves as alkali donor and buffering agent in reactive dyeing on cotton and its blends in all forms. Moreover, the product can be applied in alkaline peroxide bleaching processes. Si-CONTROL KKV has an outstanding peroxide stabilizing effect also in the presence of heavy metal traces like iron, copper and manganese. Si-CONTROL KKV stands out for its special inhibiting properties which prevent or distinctly decrease the alkaline earth silicate deposits on paddlers, rollers, machine parts and in wash compartments. Si-CONTROL KKV can be washed out much easier than silicate of soda 38°Bé which allows for an early neutralisation of the goods.

Si-CONTROL KKV and silicate of soda 38°Bé have exactly the same alkalinity and buffering capacity and can be replaced 1:1. Application quantities in pad dyeing liquors: see the technical leaflet

Application in pretreatment:

e.g. bleaching on HT apparatus:

1 – 2% Si-CONTROL KKV

TUBACRYL RI (c · liq)

Quaternary ammonium compound

Levelling agent for basic dyes when dyeing PAN. TUBACRYL RI is a cationic retarding agent with blocking effect and a K value of 1.5. The product is especially suited if basic dyestuffs are used in the K-range of 1 – 3.5. 0.5 – 3% TUBACRYL RI

TUBACRYL RVR (c · liq)

Quaternary ammonium compound

Levelling and migration agent for basic dyestuffs when dyeing PAN. TUBACRYL RVR is a non-blocking levelling auxiliary with affinity to the dyestuff when dyeing PAN. 3 – 5% TUBACRYL RVR

VISCAVIN S 700 (a · pas)

Modified esters with ethoxylates and sulphonates

VISCAVIN S 700 is a levelling and dispersing agent for dyeing PES and PES blends with a considerable crease-prevention effect. Since the product does not foam, it can be applied on all dyeing machines. 1 – 2 g/l VISCAVIN S 700 are normally added to the dyeing liquors.

FINISHING AGENTS

KEY

no	= without ionic character	x	= recommended
a	= anionic	+	= good
n	= non-ionic	++	= very good
c	= cationic	+++	= excellent
d	= amphoteric	o	= satisfactory
psc	= pseudocationic	-	= not suitable

FILLING AND STIFFENING AGENTS

	Ionic character	Polymeric dispersions	Film properties	Application fields
ARRISTAN AC 54 FF	a	polyacrylate	very hard	stiffening finishing
ARRISTAN CPU	psc	polyurethane	very soft, elastic	improvement of abrasion resistance and tear strength, antipilling, hydrophilicity, easy-care finishing
ARRISTAN EPD	d	polyurethane	very soft, elastic	improvement of abrasion resistance and tear strength, antipilling, hydrophilicity, easy-care finishing
ARRISTAN HM	n	polyvinyl acetate	soft to medium hard	filling finishing
ARRISTAN NIO	n	polyurethane	very soft	hand feel modification, improvement of elastic resiliency, easy-care finishing
ARRISTAN SAC 10 FF	a	styrolacrylate	very soft	filling finishing, antipilling, improvement of abrasion resistance
ARRISTAN WT	n	polyvinyl acetate	hard, brittle	stiffening finishing, selvedge gumming

REACTANT RESINS AND CATALYSTS FOR EASY-CARE FINISHING

	Ionic character	Chemical base	Suitable for catalysis of
CHT-KATALYSATOR FS	no	metal salt with organic additives	REAKNITT FF
CHT-KATALYSATOR ABT	no	aqueous solution of inorganic compounds	REAKNITT ZF

	Ionic character	Chemical base	Formaldehyde		
			Application fields	low	free
REAKNITT FF	no	etherified DMDHEU for easy-care finishing (OEKO-TEX® Standard 100)		x	-
REAKNITT TIO	no	etherified DMDHEU with integrated catalyst system for easy-care finishing (OEKO-TEX® Standard 100)		x	-
REAKNITT ZF	no	DMeDHEU for formaldehyde-free easy-care finishing (OEKO-TEX® Standard 100)		-	x

ADDITIVES FOR EASY-CARE FINISHING

	Ionic character	Chemical base	Hydrophilic	Bath stability with brightener
ARRISTAN 66	n/c	semi macro emulsion of an aminofunctional polysiloxane	-	++
ARRISTAN 71	n	semi macro emulsion of a modified polysiloxane	-	+++
ARRISTAN EPD	d	polyurethane dispersion	+++	++
ARRISTAN NIO	n	polyurethane dispersion	+++	+++
POLYAVIN PEN	n	polyethylene emulsion	+++	+++
TUBINGAL 220	n	fatty acid condensation product	+	++
TUBINGAL FMH	n	micro emulsion of a modified aminosiloxane	++	+++
TUBINGAL PURE	n	polyurethane dispersion	++	+++
TUBINGAL RGH	c	micro emulsion of an organomodified polysiloxane	+++	++
TUBINGAL RMG	n	fatty acid condensate with functional polysiloxane	-	+++
TUBINGAL RNJ	n	wax emulsion with fatty acid condensation products	+	++
TUBINGAL RRW	psc	fatty acid condensate with additives	0	+
TUBINGAL SMF	n/c	highly concentrated silicone micro emulsion	-	++

SOFTENERS - EMULSIONS

	Ionic character	Contains silicone	Stable to shearing	Hydrophilic	Non-yellowing	Antistatic	Esp. for OE yarns	Bath stability with brightener
ARRISTAN 66	n/c	x	-	-	++	0	+++	++
ARRISTAN 71	n	x	0	-	+++	0	++	+++
TUBINGAL 220	n	-	0	0	++	0	0	++
TUBINGAL 3S	n	x	+++	0	+++	0	-	++
TUBINGAL FMH	n	x	-	++	+++	0	+	+++
TUBINGAL HWS	psc	x	+++	+++	+++	+	+	+
TUBINGAL ISP	psc	x	+++	+++	+++	+	+++	++
TUBINGAL KRE	c	-	+	-	0	0	+	-

	Ionic character	Contains silicone	Stable to shearing	Hydrophilic	Non-yellowing	Antistatic	Esp. for OE yarns	Bath stability with brightener
TUBINGAL PURE	n	-	+++	++	+++	+	+	+++
TUBINGAL RGH	c	x	+++	+++	+++	+	+++	++
TUBINGAL RMG	n	x	++	-	++	0	+	+++
TUBINGAL RNJ	n	-	++	+	++	0	0	++
TUBINGAL RRW	psc	-	++	0	+++	0	0	+
TUBINGAL RSK	psc	x	++	-	++	0	+	0
TUBINGAL SMF	n/c	x	-	-	++	0	+	++

(Continuation of the table from page 36)

SOFTENERS – CONCENTRATES

	Ionic character	Appearance	Solubility	Shearing stability	Hydrophilic	Free from yellowing
TUBINGAL 3030	n	flakes	soluble in hot water	+++	-	+++
TUBINGAL 4748	psc	flakes	soluble in hot water	++	-	++
TUBINGAL 7023	c	liquid	soluble in cold water	+++	+++	-

The pH value of the liquor, the drying temperature and time and the ionic character of combination products have influence on the non-yellowing property of softeners. Preliminary tests on industrial conditions are indispensable. The bath stability depends very much on the pH of the liquor. The shearing stability depends in individual cases on the pump capacity. Preliminary tests on jets are necessary.

ANTISTATS

	Ionic character	Chemical base	Padding procedure	Exhaust procedure	Permanence
AVISTAT 3 P	a	phosphoric acid ester	+	-	-
AVISTAT AZ NEU	c	fatty acid condensation product	+	+	-
AVISTAT GPA	a/n	mixture of phosphoric acid esters with modified polyether	+	-	+

WET WAXING AGENTS

	Ionic character	CEL	WO	PAN	PES	Chemical base
LUSTRAFFIN AS	psc	x		x	x	paraffin free, ester and wax based product in combination with fatty acid condensates
LUSTRAFFIN BA	psc	x	x	x	x	paraffin emulsion
LUSTRAFFIN BU	n	x				paraffin emulsion
LUSTRAFFIN DBL	n				x	fatty acid ester with selected spreading agents and optimal antistatic agents
LUSTRAFFIN LF CONC	psc	x				paraffin emulsion with polyethylene
LUSTRAFFIN SA 88	psc	x	x	x	x	paraffin emulsion

SEWING THREAD FINISHING AGENTS AND THEIR APPLICATION PROCEDURES

Dyeing bath process	
PES, PES/PES and PES/CO	POLYAVIN 3000

Exhaust process	
PA 6.6, PES, PES/PES, PES/CO and CV	POLYAVIN 3000 or POLYAVIN HELP
textured PES	POLYAVIN TEX
CO, linen	POLYAVIN CO
PES bonding	POLYAVIN BOND

Lick roller process	
PA 6.6, PES, PES/PES, PES/CO and CV	

Room temperature

Anhydrous	POLYAVIN COLD POLYAVIN UFP
Aqueous	POLYAVIN ANG 35
PES bonding	POLYAVIN BOND

Dosing pump application			
		Room temperature	70 or 80 °C
Anhydrous		POLYAVIN UFP	POLYAVIN UFP

RAISING AUXILIARIES

	Ionic character	CEL	WO	PA	PAN	PES Triacetate	Chemical base
POLYAVIN PEN	n	x				x	polyethylene emulsion
TUBINGAL 220	n	x				x	fatty acid condensate
TUBINGAL HWS	psc	x	x	x	x	x	functional polysiloxane with additives
TUBINGAL RNJ	n	x	x	x	x	x	wax emulsion with fatty acid condensates
TUBINGAL RSK	psc	x	x			x	fatty acid condensate containing silicone with special additives

GLOSS FINISHING AGENTS

	Ionic character	Chemical base
ARRISTAN 66	n/c	semi macro emulsion of an aminofunctional polysiloxane
ARRISTAN 71	n	semi macro emulsion of a modified aminosiloxane
POLYAVIN PEN	n	polyethylene emulsion
TUBINGAL RNJ	n	wax emulsion with fatty acid condensates
TUBINGAL RRW	psc	fatty acid condensate with additives

All gloss finishing agents have to be applied in combination with a mechanical finishing e.g. on calender, so that the produced gloss is supported and increased.

SANFORISING AUXILIARIES

	Ionic character	Chemical base
POLYAVIN PEN	n	polyethylene emulsion
TUBINGAL HWS	psc	functional polysiloxane with additives
TUBINGAL RNJ	n	wax emulsion with fatty acid condensates

HYDROPHILIZING AGENT FOR SYNTHETIC FIBRES

	Ionic character	Chemical base	CEL	WO	PA	PAN	PES
ARRISTAN AIR	n	hydrophilic polyester copolymer with soil release effect			x		x

NON-SLIP FINISH

	Ionic character	Chemical base	Permanence
ARRISTAN CPU	psc	polyurethane dispersion	+++
ARRISTAN EPD	d	polyurethane dispersion	+++
FLEXOFIX FL	c	modified polysilicic acid compound	-

WEIGHTING AGENTS

	Ionic character	Chemical base
PESOFIX WM	no	combination of inorganic and organic substances

PRODUCT INDEX

ARRISTAN 66 (n/c · liq)

Semi macro emulsion of an aminofunctional polysiloxane

Silicone elastomer for improving the handle of finishes of CEL, WO and synthetic fibres as well as their blends. Soft handle as well as outstanding resiliency and highest sewability improvement stand out for fabrics finished with ARRISTAN 66. ARRISTAN 66 is highly suitable for easy-care finishes. The product is sensitive to alkali so that the pH values of the liquor have to be between 5 – 6. ARRISTAN 66 stands out by giving a good running stability in padding processes.

Padding process:

10 – 30 g/l ARRISTAN 66

ARRISTAN 71 (n · liq)

Semi macro emulsion of a modified aminosiloxane

ARRISTAN 71 imparts a very pleasantly soft and smooth handle to textiles, also to pigment printed fabrics. Full white articles can be easily finished without yellowing. The product can be combined with special optical brighteners as well as with selected pigment dyes. ARRISTAN 71 has excellent running stabilities on the padder.

Padding process:

10 – 30 g/l ARRISTAN 71

ARRISTAN AC 54 FF (a · liq)

Polyacrylate dispersion

Finishing agent for stiffening and improving the abrasion resistance. ARRISTAN AC 54 FF forms very hard films.

Padding Process:

10 – 300 g/l ARRISTAN AC 54 FF

ARRISTAN AIR (n · liq)

Polyester copolymer

Hydrophilic agent mostly for synthetic fibres of polyester and polyamide. Excellent hydrophilic effects are obtained, so that the electrostatic charging can also be reduced. ARRISTAN AIR is very well suitable for functional textiles to guarantee an optimal moisture transport. The handle of the fabric becomes smoother and sleeker. The removability of greasy stains is increased (soil release effect). ARRISTAN AIR does not impair the whiteness degree of fabrics treated by optical brighteners, and it is stable to delicate washing.

Padding process:

20 – 50 g/l ARRISTAN AIR

Exhaust process:

2 – 5% ARRISTAN AIR

ARRISTAN CPU (psc · liq)

Micro dispersion of a polyurethane

Polymeric finishing agent for padding as well as for exhaust processes. Already at standard drying temperatures ARRISTAN CPU forms very soft, highly elastic films. The product has many application possibilities for finishing textiles. It can be used as handle modifier for achieving interesting handle effects, as additive in easy-care finishes, for improvement of the technological properties (e.g. abrasion resistance, pilling etc.) as well as for increasing the resilience.

Padding process:

20 – 100 g/l ARRISTAN CPU

ARRISTAN EPD (d · liq)

Micro dispersion of a polyurethane

Polymeric finishing agent for the padding procedure. Due to its chemical structure the product is self-crosslinking and forms very soft, resilient films without addition of special catalysts. ARRISTAN EPD is a multi-purpose additive for the finishing of textiles. It is applied as additive in the easy-care finishing to improve the crease recovery, as additive modifying the handle to create interesting effects and as additive to improve technological properties (e.g. abrasion fastness, pilling etc.).

Padding process:

20 – 100 g/l ARRISTAN EPD

ARRISTAN HM (n · liq)

Vinylacetate copolymer in aqueous dispersion

ARRISTAN HM is a finishing agent for filling finishes with good washing stabilities. Higher application amounts do not have a stiffening effect on the product, its full handle and elasticity remains. ARRISTAN HM does not cause post-yellowing on pure white fabrics.

Padding process:

2 – 10 g/l as filling agent e.g. for clothing fabrics

10 – 50 g/l for cotton or linen articles

ARRISTAN NIO (n · liq)

Micro dispersion of a polyurethane

Polymeric finishing agent for versatile applications. ARRISTAN NIO is applied

to modify handle and surface, to improve the resilience, and as additive to improve the easy-care effects. ARRISTAN NIO is self-crosslinking and forms soft and elastic films without fixing process.

Padding process:

30 – 80 g/l ARRISTAN NIO

ARRISTAN SAC 10 FF (a · liq)**Styrene acrylate dispersion**

Finishing agent for versatile application possibilities like filling finish, anti-pilling agent, agent to improve the abrasion resistance. ARRISTAN SAC 10 FF forms very soft films.

Padding process:

10 – 100 g/l ARRISTAN SAC 10 FF

ARRISTAN WT (n · liq)**Polyvinyl acetate dispersion**

Filling and stiffening finishes which are stable to washing can be made with this product. ARRISTAN WT forms medium hard films, is free from formaldehyde and therefore very suitable for shape wear.

Padding process:

5 – 200 g/l ARRISTAN WT

AVISTAT 3 P (a · liq)**Phosphor acid ester**

AVISTAT 3 P gives excellent antistatic effects on synthetic fibres and imparts a neutral handle. AVISTAT 3 P does not cause yellowing, not even at high drying and fixing temperatures. The antistatic effect is not impaired by drying and fixation processes. AVISTAT 3 P does not influence the shade or the fastness level of dyeings.

Padding process:

4 – 10 g/l AVISTAT 3 P

Spraying process:

20 – 50 g/l AVISTAT 3 P

AVISTAT AZ NEU (c · liq)**Fatty acid condensation product**

Antistatic agent with softening properties. The handle is full and voluminous. AVISTAT AZ NEU is suitable for all synthetic fibres. Best exhaust behaviour is between pH 6 – 6.5. During fixation the product diffuses into the fibre and the antistatic effect decreases.

Padding process:

5 – 10 g/l AVISTAT AZ NEU

Exhaust process:

1 – 2% AVISTAT AZ NEU

AVISTAT GPA (a/n · liq)**Mixture of phosphor acid esters with modified polyether**

Antistatic agent stable to washing and dry cleaning for synthetic fibres and their mixture with natural fibres. Outstanding antistatic effects are achieved on synthetic fibres using AVISTAT GPA. It imparts a neutral handle. AVISTAT GPA does not turn yellow with high drying and curing temperatures. The antistatic effect is not impaired by drying and fixation. AVISTAT GPA does not influence the shade and the fastness level of dyeings.

Padding process:

5 – 30 g/l AVISTAT GPA

CHT-KATALYSATOR ABT (no · liq)**Aqueous solution of inorganic compounds**

CHT-KATALYSATOR ABT is a special catalyst for the formaldehyde-free easy-care finishing, and it is recommended exclusively for REAKNITT ZF. The garlic odour occasionally arising with magnesium chloride is clearly reduced with application of CHT-KATALYSATOR ABT.

Application quantity:

10% CHT-KATALYSATOR ABT with reference to the amount of the crosslinking agent of REAKNITT ZF

CHT-KATALYSATOR FS (no · liq)**Metal salt with organic additives**

The product is a special catalyst for the easy-care finishing with low content of formaldehyde. It considerably reduces the content of free formaldehyde on textile according to Japanese Law 112 in comparison to the conventional magnesium chloride.

Application quantity:

30 – 40% CHT-KATALYSATOR FS with reference to quantity of crosslinking agent of e.g. REAKNITT FF

FLEXOFIX FL (c · liq)**Modified polysilicic acid compound**

Non-slip finishing agent for all materials, especially for lining fabrics.

Padding process:

5 – 60 g/l FLEXOFIX FL

LUSTRAFFIN AS (psc · liq)**Paraffin free, ester and wax based product in combination with fatty acid condensates**

Yarn lubricant for all fibre kinds. Due to its distinct antistatic properties

LUSTRAFFIN AS is particularly suitable for polyester and polyacrylics.

Exhaust process:

1 – 3% LUSTRAFFIN AS

LUSTRAFFIN BA (psc · liq)**Paraffin emulsion**

Special product for yarn lubrication. The product serves as lubricant to increase the gliding properties of bleached or dyed yarns, so that good handling knitting is guaranteed. It is applied in a separate bath in the exhaust process.

Exhaust process:

1 – 3% LUSTRAFFIN BA

LUSTRAFFIN BU (n · liq)**Paraffin emulsion**

Special product for yarn lubrication if a high whiteness degree is demanded. LUSTRAFFIN BU improves the gliding properties of knitting yarns, which is required for a good processing of such yarns. LUSTRAFFIN BU is applied in a separate bath in the exhaust process.

Exhaust process:

2 – 3% LUSTRAFFIN BU

LUSTRAFFIN DBL (n · liq)**Fatty acid ester with selected spreading agents and optimal antistatic agents**

The product is applied for the lubrication of PES threads. Excellent gliding properties are obtained as well as a good antistatic effect. The oligomer binding power of LUSTRAFFIN DBL prevents dusting in subsequent processes.

Exhaust process:

1 – 3% LUSTRAFFIN DBL pick-up

LUSTRAFFIN LF CONC (psc · liq)**Paraffin emulsion with polyethylene**

Special product for the yarn lubrication in exhaust procedure. The yarns are excellently lubricated by extremely regular exhaustion of the product. In addition LUSTRAFFIN LF CONC is stable up to pH 8 so that a high process safety is guaranteed.

Exhaust process:

1 – 3% LUSTRAFFIN LF CONC

LUSTRAFFIN SA 88 (psc · liq)**Paraffin emulsion**

Special product for yarn lubrication. The product serves as lubricant to increase the gliding properties of bleached or dyed yarns, so that a good further processing

is guaranteed in knitting. The product is applied in a separate bath in the exhaust process.

Exhaust process:

1 – 2% LUSTRAFFIN SA 88

PESOFIX WM (no · liq)

Combination of inorganic and organic substances

Filling and weighting agent with soft handle properties, mainly for wools and wool blends. The product is applied on the padder.

Padding process:

20 – 150 g/l PESOFIX WM

POLYAVIN 3000 (c · liq)

Synergetic mixture of silicones, special lubricants and antistats

Lubrication of man-made fibre sewing threads and core yarns in the dyeing bath or in fresh bath. Total bath exhaust at 70 – 75 °C, therefore also suitable for higher initial temperatures.

Exhaust process:

6 – 15% POLYAVIN 3000

POLYAVIN ANG 35 (n · liq)

Synergetic mixtures of silicones, special lubricants and antistats

Lubrication of sewing threads and embroidery yarns on the lick roller or by means of dosing pump. It is water based and confers low friction values and good heat protection.

Exhaust process:

2 – 4% POLYAVIN ANG 35

POLYAVIN BOND (n · liq)

Polymer dispersion

Bonding agent for PES sewing threads. POLYAVIN BOND has a sticking effect without influencing the friction coefficient and without stiffening, so that the textile character remains.

Exhaust process:

3% POLYAVIN BOND

Lick roller:

50 – 100 g/l POLYAVIN BOND

POLYAVIN CO (c · liq)

Synergetic mixture of silicones, special lubricants and antistats

Lubrication of CO sewing threads. It imparts excellent processing properties by decreasing the coefficient of friction without impairing the tensile strength.

Exhaust process:

5 – 10% POLYAVIN CO

POLYAVIN COLD (no · liq)

Mixture of special silicones with special lubricants

Non-aqueous product for the lubrication of sewing threads at room temperature for reducing the coefficient of friction.

Recommended pick-up:

2 – 5% POLYAVIN COLD

POLYAVIN HELP (c · liq)

Synergetic mixture of silicones, special lubricants and antistatic agents

Lubrication of sewing threads made of man-made fibres and their mixtures with cotton in the exhaust process. The product guarantees very high process safety in a broad pH range. As a result, complete bath exhaustion and a very even distribution of the product within the bobbin are achieved.

Exhaust process:

6 – 12% POLYAVIN HELP

POLYAVIN PEN (n · liq)

Special polyethylene emulsion

Additive to improve the sewability of all kind of fibres. Even on very fine knits the number of mesh breakages is considerably reduced or completely prevented. The handle of the goods is pleasantly soft. POLYAVIN PEN is excellently suitable for easy-care finishing and to improve the abrasion resistance and tear strength.

Padding process:

10 – 30 g/l POLYAVIN PEN

POLYAVIN TEX (c · liq)

Synergetic mixture of silicones, special lubricants and antistats

The product is used as finishing for textured PES sewing thread. POLYAVIN TEX imparts excellent gliding and running properties, thus a very good sewability to the sewing threads by highly decreasing the coefficient of friction.

Exhaust process:

6 – 15% POLYAVIN TEX

POLYAVIN UFP

Synergetic mixture of modified siloxane with special paraffins and waxes

Sewing thread lubricant for application by means of dosing system at room temperature and at 70 – 80 °C. It can also be applied on the lick roller at room

temperature. In this way very good heat protection and excellent sewability properties are achieved.

Recommended pick-up:

2 – 5% POLYAVIN UFP

REAKNITT FF (no · liq)

Reactant resin with low formaldehyde content

Crosslinking agent for the easy-care finish of fabrics made of cellulose fibres and their blends with synthetics. If used properly, very low formaldehyde contents will result on the fabric, so that OEKO-TEX® Standard 100 will be achieved (according to Japanese Law 112: formaldehyde < 75 ppm).

REAKNITT T10 (no · liq)

Reactant resin with integrated catalyst system with low formaldehyde content

Due to the "one-component system" no catalyst needs to be added. Therefore the "handling" is clearly simplified. Easy-care effects achieved with REAKNITT T10 have a very good wash fastness because of the hydrolysis stability. Moreover, the finishes produce a neutral handle without stiffening the handle.

REAKNITT ZF (no · liq)

Formaldehyd free reactant resin

The product is used for the formaldehyde-free easy-care finishing on cellulose fibres and their mixtures with synthetics. The dry and wet shrinking is improved by REAKNITT ZF and a very soft handle is obtained. Finishing effects which are fast to washing and dry cleaning are achieved.

TUBINGAL 220 (n · liq)

Fatty acid condensation product

Non-ionic, universally applicable softener for all types of fibres. TUBINGAL 220 stands out for its excellent compatibility with brightening agents. When applied on white goods TUBINGAL 220 does not yellow. It is possible to combine it with reactant resins for anti-shrink and easy-care finishing. TUBINGAL 220 can be applied in the padding and exhaust process.

Exhaust process:

2 – 4% TUBINGAL 220

Padding process:

20 – 40 g/l TUBINGAL 220

TUBINGAL 3030 (n · fla)**Fatty acid condensation product**

Non-ionic softener concentrate in flakes, soluble in hot water. The handle is very soft and TUBINGAL 3030 is very well compatible with white materials.

Exhaust process:

2 – 4% TUBINGAL 3030
(15% stock emulsion)

Padding process:

20 – 4% TUBINGAL 3030
(15% stock emulsion)

TUBINGAL 4748 (psc · fla)**Fatty acid condensation product**

Softener concentrate in flakes easily soluble in hot water. A very soft and full handle is achieved.

Exhaust process:

1 – 3% TUBINGAL 4748
(stock emulsion of 12%)

Padding process:

10 – 40 g/l TUBINGAL 4748
(stock emulsion of 12%)

TUBINGAL 7023 (c · liq)**Fatty acid condensation product**

Liquid softener concentrate easily soluble in cold water. TUBINGAL 7023 is a hydrophilic softener for cellulosic fibres and their blends well suitable for terry cloth materials.

Exhaust process:

2 – 5% TUBINGAL 7023
(stock emulsion of 15%)

Padding process:

20 – 50 g/l TUBINGAL 7023
(stock emulsion of 15%)

TUBINGAL 3S (n · liq)**Micro emulsion of a modified polysiloxane**

TUBINGAL 3S is a special development for the soft handle finish of knits and wovens, particularly for synthetic fibres as well as their mixtures. An excellent soft handle can be achieved especially on polyester and polyamide. It can be applied on the padder as well as for the exhaust process. TUBINGAL 3S stands out for its very good compatibility with white and its minor impact on thermomigration of dispersion dyes.

Padding process:

10 – 40 g/l TUBINGAL 3S

Exhaust process:

1 – 3% TUBINGAL 3S

TUBINGAL FMH (n · liq)**Micro emulsion of a modified aminosiloxane**

The product is a pH stable micro emulsion (tested up to pH 9), which allows to minimise the risk of stains. In addition it has very good running properties, and it can also be applied in combination with optical brighteners and blueing dyes (preliminary tests are necessary). TUBINGAL FMH has hydrophilic character which guarantees a good rewettability to the fabric. TUBINGAL FMH clearly increases the easy-care finishing effects.

Padding process:

10 – 40 g/l TUBINGAL FMH

TUBINGAL HWS (psc · liq)**Functional polysiloxane with additives**

TUBINGAL HWS is a softener for hydrophilic finishing of textile goods. The product stands out for its exceptionally soft, smooth handle and outstanding degree of whiteness. TUBINGAL HWS can be used in exhaust and padding processes. TUBINGAL HWS can be used in numerous application fields.

Exhaust process:

2 – 4% TUBINGAL HWS

Padding process:

20 – 40 g/l TUBINGAL HWS

TUBINGAL ISP (psc · liq)**Micro emulsion of a modified aminopolyether siloxane**

TUBINGAL ISP is a multi-functional textile softener with outstanding softness and distinct hydrophilic properties. The product is stable to yellowing and is tailor-made for today's requirements in industrial use. Accordingly TUBINGAL ISP can be applied on a wide range of substrates.

Exhaust process:

1 – 4% TUBINGAL ISP

Padding process:

20 – 40 g/l TUBINGAL ISP

TUBINGAL KRE (c · liq)**Fatty acid condensation product**

Cationic standard softener for all fibre sorts. It is possible to obtain excellent handle effects with TUBINGAL KRE, especially on CO, PES, PA and PAN. On PAN fibres TUBINGAL KRE can be applied directly in the dyeing bath as finishing agent and crease-prevention agent. When dyeing PA carpets, the handle of the carpet will be smooth and slightly silky if TUBINGAL KRE

is added. Due to its high affinity to the fibre, the product is preferably applied in the exhaust method.

Exhaust process:

1 – 3% TUBINGAL KRE

Padding process:

10 – 40 g/l TUBINGAL KRE

TUBINGAL PURE (n · liq)**Polyurethane dispersion**

Silicone-free soft handle agent for all kinds of fibres. TUBINGAL PURE stands out for a very soft handle; a good rewettability, combinability and compatibility with white materials. TUBINGAL PURE is stable to shear forces and can therefore be applied by exhaust procedure and by padding. TUBINGAL PURE can be applied in processes in which silicone containing softeners might have a disturbing effect.

Exhaust process:

2 – 4% TUBINGAL PURE

Padding Process:

20 – 4% TUBINGAL PURE

TUBINGAL RGH (c · liq)**Micro emulsion of an organomodified polysiloxane**

The silicone micro emulsion combines the best shearing stability, pH stability (tested at pH up to 11), excellent white compatibility and hydrophilic character with core soft handle. Even on open-end yarns a smooth and soft handle is obtained. TUBINGAL RGH is combinable in easy-care finishing and with many brighteners (preliminary tests are recommended). The application field is large for this universally applicable product for knit fabrics and woven fabrics of cellulosic fibres, wool, synthetics and their blends.

Exhaust process:

1 – 4% TUBINGAL RGH

Padding process:

10 – 40 g/l TUBINGAL RGH

TUBINGAL RMG (n · liq)**Fatty acid condensate with functional polysiloxane**

Universal softener suitable for all kinds of fibres. The fabric gets a smooth handle and the sewability is improved. The product is well compatible with white and can be combined with optical brighteners (preliminary tests are recommended). Due to the good exhaust behaviour and the good shearing stability TUBINGAL RMG can be applied by exhaust process on all jets.

Exhaust process:

1 – 3% TUBINGAL RMG

Padding process:

10 – 40 g/l TUBINGAL RMG

TUBINGAL RNJ (n · liq)

Wax emulsion with fatty acid
condensation product

Special softener for woven and knit fabrics to improve the sewability. TUBINGAL RNJ can be used as processing aid for raising and emerizing as well as for compacting and sanforizing. The product is equally suited to be applied for white and coloured fabrics.

Exhaust process:

2 – 3% TUBINGAL RNJ

Padding process:

20 – 40 g/l TUBINGAL RNJ

TUBINGAL RRW (psc · liq)

Fatty acid condensation product

Silicone free textile softener for exhaust and padding processes. The product is stable to jets, low foaming and largely resistant to yellowing. It provides the fabric with a pleasantly, smooth, soft handle and also optimises the sewability.

Exhaust process:

1 – 3% TUBINGAL RRW

Padding process:

10 – 30 g/l TUBINGAL RRW

TUBINGAL RSK (psc · liq)

Fatty acid condensate containing silicone
with special additives

TUBINGAL RSK is a pseudocationic, multifunctional softener. The product is low foaming, gives a special soft handle, a smooth surface and an optimum sewability. Due to these properties TUBINGAL RSK is preferably used in finishing of knitted fabrics.

Exhaust process:

1 – 4% TUBINGAL RSK

Padding process:

10 – 30 g/l TUBINGAL RSK

TUBINGAL SMF (n/c · liq)

Highly concentrated silicone micro
emulsion

TUBINGAL SMF is applied as high quality softener on all kind of fibres and is excellently suitable as additive in the easy-care finishing. It confers very soft and flowing touch. Application is by padding process.

Padding process:

20 – 40 g/l TUBINGAL SMF

FIBRE AUXILIARIES

KEY

a	= anionic	p	= paste
c	= cationic	CF	= Continuous Filament
psc	= pseudocationic	BCF	= Bulk Continuous Filament
n	= non-ionic	FDA	= Food & Drug Administration
liq	= liquid	x	= recommended
FDY	= Fully Drawn Yarn		

SPIN FINISHES FOR POLYPROPYLENE FILAMENT

	Ionic character Appearance	CF textured	CF FDY	Tapes	BCF	Notes
DURON OF 2230	n-liq	x			x	soft textile handle/not supporting gasfading/good fibre protection
DURON OF 2236	n-liq	x			x	soft textile handle/not supporting gasfading/moderate fibre protection
DURON OF 3174	n-liq		x			speciality for hydrophobic yarns
DURON OF 3201	n-liq	x	x		x	scroopy handle, FDA*
DURON OF 3206	n-liq			x		low splash
DURON OF 3217	n-liq	x			x	soft textile handle/not supporting gasfading/excellent fibre protection
DURON OF 3225	n-liq				x	speciality for supersoft carpet yarns
DURON TX 2080	a-liq		x			monofil finish/low emission coning oil (all fibre types)

* ingredients included in regulations for indirect food contact according to FDA

SPIN FINISHES FOR POLYPROPYLENE STAPLE FIBRE

	Ionic character Appearance	Fibres for yarn production		Fibres for nonwoven production			Shortcut fibres	Notes
		Rotor spinning	Ring spinning	Needle-punched	Thermal bonded	Hydro-entangled		
DURON K 3168	a·p					x		low foaming antistat, FDA*
DURON OS 1547	c·liq				x			permanent hydrophilic, hygienic fibres
DURON OS 2221	n·liq				x			hydrophobic, hygienic fibres, FDA and EU 10/2011**
DURON OS 3034	n·liq		x	x				high crimp fibres
DURON OS 3151	n·liq						x	low foaming, FDA*
DURON OS 3176	n·liq		x	x				not supporting gasfading
DURON OS 3184	n·liq			x				strong crunchy handle
DURON OS 3188	n·liq					x		low foaming, FDA and EU 10/2011**
DURON OS 4012	n·liq				x			permanent hydrophilic, hygienic fibres
DURON OS 4022	n·liq	x	x	x				universal spin finish

* ingredients included in regulations for indirect food contact according to FDA

** ingredients included in regulations for indirect food contact according to FDA and EU 10/2011

SPIN FINISHES FOR POLYPROPYLENE SPUNBOND

	Ionic character Appearance	Spunbond for		Notes
		Hygienic	Technical applications	
DURON OF 1547	c-l	x		permanent hydrophilic, superiour soft handle
DURON OF 4012	n-l	x		permanent hydrophilic
DURON SL 2206	c-l		x	soft, hydrophobic, non silicone
DURON SL 2221	n-liq	x		hydrophobic, soft silicone free
DURON SL 3188	n-l		x	low foaming, FDA and EU 10/2011*
DURON SL 3204	n-l		x	soft, hydrophobic, silicone
DURON SL 3211	n-l	x		hydrophobic, soft silicone handle
DURON SL 3214	n-l		x	dust catching
DURON SL 4035	n-l		x	hydrophilic
DURON SL 4069	n-l	x		permanent hydrophilic, low wet back
DURON SL 4077	a-l		x	rapid wetting

* ingredients included in regulations for indirect food contact according to FDA and EU 10/2011

SPIN FINISHES FOR POLYESTER STAPLE FIBRES

				Fibres for nonwoven production				
	Ionic character Appearance	Fibres for yarn production	Filling fibres	Needle punched	Hygiene	Hydro entangled	Shortcut fibres	Notes
DURON 14 DURON 1105	n-liq a-liq	x	x	x		x		universal spin finish for all kinds of PES fibres
DURON 7024	a-liq		x					antistat
DURON ES 3151	n-liq						x	low foaming, FDA*
DURON ES 3165	n-liq				x			moisture management, FDA*
DURON ES 3176	a-liq			x				coarse fibres
DURON ES 3184	n-liq		x					scroopy handle
DURON ES 3188	n-liq					x		low foaming, FDA and EU 10/2011**
DURON FF 1995	c-liq		x					silicone free fibre fill finish
DURON FF 2084	n-liq		x					1-component self crosslinking fibre fill system
DURON FF 3185 DURON FF 3190 DURON X 730	n-liq a-liq n-liq		x					3-component fibre fill system for enhanced softness and resilience
DURON K 3168	a-p					x		antistat , low foaming, FDA*
DURON K 4054	a-liq		x					thermally stable antistat designed for combination with fibre fill finishes
DURON PP 3	n-liq				x			moisture management

* ingredients included in regulations for indirect food contact according to FDA

** ingredients included in regulations for indirect food contact according to FDA and EU 10/2011

SPIN FINISHES FOR POLYAMIDE STAPLE FIBRES

	Ionic character Appearance	Lubricant	Antistat	Notes
DURON 14	n-liq	x		standard lubricant for all types of PA staple fibres
DURON 1105	a-liq		x	textile handle
DURON 7024	a-liq		x	soft handle, suitable for stretchbreaking process
DURON AS 1711	n-liq	x		lubricant with antistatic properties
HANSA ASE 7620 DURON K 2088	n-liq n-liq	x		final finish containing silicone for super soft fibres (coloured ranges)

SPIN FINISHES FOR SECONDARY SPINNING

	Ionic character Appearance	Top production	Worsted yarn spinning	Semi-worsted yarn spinning	Woollen yarn spinning	Notes
DURON HK 1040	n-liq			x	x	for all kinds of fibres in semi-worsted and woollen yarn spinning
DURON KG 1710	n-liq	x	x		x	universal lubricant for fibre blends with high amount of synthetic fibres
DURON KG 2450	n-liq	x				carding finish
DURON KG 3010	n-liq	x	x	x		universal lubricant for wool
DURON P 1	n-liq		x			reducing yarn/solid friction
DURON SG 2420	n-liq				x	mineral oil-free lubricant
DURON VVS	n-liq	x				silicone softener for aftertreatment of "Chlorine-Hercosett" treated wools

NEEDLE-PUNCHED NONWOVEN FINISHES

	Ionic character Appearance	Notes
DURON NV 2	n-liq	gives high fibre/fibre cohesion for good fibre bonding, even on straight coarse fibres
DURON NV 7	n-liq	low fogging for the automotive sector
DURON NV 12	n-liq	universal finish for needle-punched nonwovens for all kinds of fibres (synthetic fibres, natural fibres, ceramic fibres)

ADDITIVES FOR SECONDARY SPINNING

	Ionic character Appearance	Notes
DURON 7024	a-liq	antistatic agent for synthetic fibres with decreasing friction capacity
DURON AC	n-liq	highly efficient antistatic agent for processing all fibres and blends in conventional and rotor spinning – increases cohesion
DURON SI	n-liq	component to increase the fibre/fibre cohesion in conventional and rotor spinning

CONING AND TEXTURIZING OILS, WARP WAXES

	Ionic character Appearance	Coning oil	Warp wax	Notes
DURON KETTWACHS 109	n-liq		x	watersoluble, readily biodegradable
DURON TX 2080	a-liq	x		esteroil based, biodegradable, low emission
DURON TX 4015	a-liq	x		classical, mineral oil based
DURON TX 4073	a-liq	x		classical, mineral oil based, superiour antisplash properties

PRODUCT INDEX

DURON 14 (n · liq)

Combination of fatty acid polyglycol esters with anticorrosion-additives

Spin finish component for polyester and polyamide staple fibres. Increases the static fibre/fibre friction of polyester staple fibres and decreases the dynamic fibre/fibre and fibre/metal friction. Imparts polyamide staple fibres slightly higher values of fibre/fibre friction and average values of fibre/metal friction. The product is used in combination with phosphoric acid esters such as DURON 1105 and DURON 7024. Imparts a low climate sensitivity to the fibres in further processing and is suitable for fibres in ring and OE spinning. The application amount on cotton type is 0.14% and 0.3% on wool type.

DURON 1105 (a · liq)

Phosphoric acid ester mix

Spin finish component for polyester staple fibres (C and W type) as well as tow. The product is applied as antistatic component together with a lubricant e.g. DURON 14. The application amount is on cotton type max. 0.14%, and max. 0.3% on wool type.

DURON 7024 (a · liq)

Aqueous preparation of neutralized primary alkyl phosphate

Antistatic component and finish for synthetic staple fibres as well as PP-spunbond. DURON 7024 is applied as antistatic component together with a lubricant, e.g. DURON 14. The application amount is max. 0.14% on cotton type, and max. 0.3% on wool type. DURON 7024 is also applied in the field of PP-spunbond whenever certain antistatic properties are demanded for protective clothing.

DURON AC (n · liq)

Alkylbetain

Highly efficient antistatic agent for processing all fibres and blends in conventional and rotor spinning. High antistatic efficiency mostly as additive for spin finishes. Decreases the fibre/metal friction and increases the fibre/fibre friction and is therefore highly suitable for rotor spinning and short staple range. 0.1 – 0.2% as additive for spin finishes; application is done from aqueous dilution.

DURON AS 1711 (n · liq)

Combination of fatty acid polyglycol ester and phosphoric acid ester

Spin finish for polyamide staple fibres. The product imparts polyamide staple fibres slightly higher values in fibre/fibre friction and average values in fibre/metal friction. One component finish which contains an antistatic agent. The product is applied at the spinning chamber and the fibre line. Altogether the pick-up amounts to 0.2 – 0.7% depending on the fibre titre.

DURON ES 3151 (n · liq)

Mixture of selected fatty acid polyglycol ethers and esters

Spin finish for polyester shortcut fibres. The product supports the cutting process. DURON ES 3151 has an extremely low tendency to foam and prevents the antistatic charge of the fibres during processing and particularly during packing. Fibres produced with DURON ES 3151 are spontaneously and evenly distributed in concrete. The product is based on FDA listed raw materials.

DURON ES 3165 (n · liq)

Preparation of non-ionic surfactants

Spin finish for PES staple fibres. Exactly adjusted wetting and rewetting behaviour. Suitable for the production of hygienic nonwovens, particularly ADL fibres. It is applied in fibre production. The application amount is approx. 0.4%. Ingredients included in regulations for indirect food contact according to FDA.

DURON ES 3176 (a · liq)

Fatty acid polyglycol ester

Spindraw and final spin finish for PES-staple fibre production. Spin finish for PES-fibres, that need high fibre cohesion for subsequent processing. The following application quantities are recommended: 0.6 – 0.8% of active substance of DURON ES 3176.

DURON ES 3184 (n · liq)

Solution of fatty acid polyglycol ester

Spin finish component for PES staple fibres. The product is applied in combination with fibre fill finishes, changing the handle from soft to crunchy or applied on coarse carpet fibres.

DURON ES 3188 (n · liq)**Mixture of polyglycols and additives**

Duron ES 3188 is applied in the production of staple fibres used for hydroentanglement. The total pick-up is 0.4 – 0.7%. In case of changing the finish a contamination with surfactant systems should be avoided. Ingredients included in regulations for indirect food contact according to FDA and EU 10/2011.

DURON FF 1995 (c · liq)**Fatty acid condensation product**

Silicone free fibre fill finish with no influence on flammability of fibres. Giving soft bulky fibres without heat treatment. Recommended opu: 0.5%.

DURON FF 2084 (n · liq)**Emulsion of aminofunctional siloxane**

One component silicone softeners for PES fibre fill. Imparts the fibre softness and high bulkiness with very good resilience. Non-yellowing. Good wetting and spreading on the fibre. Application is done by means of an aqueous dilution by spraying or dipping. Between 0.4 – 0.6% are applied. Condensation for 5 – 15 min at 130 – 170 °C to achieve permanent siliconisation.

DURON FF 3185 (n · liq)**Aminofunctional polysiloxane**

Silicone finish for polyester fill fibres. The product can be applied by spraying or dipping. The product pick-up should be 0.4 – 0.5% (active substance) based on the fibre weight. To improve the very good resilience we recommend the additional application of DURON FF 3190 in combination with DURON FF 3185. For application in short curing conditions (e.g. 176 °C/3.5 min) additional use of low yellowing crosslinker system DURON X 370 is recommended.

DURON FF 3190 (a · liq)**Polysiloxane**

Component for silicone softener for fill fibres. The product can be applied by spraying or dipping. The total product pick-up should be 0.3 – 0.5% (active substance) based on the fibre weight. By the use of DURON FF 3190 it is possible to adjust the controversial dependency of soft handle and resilience. Therefore we would like to suggest using DURON FF 3190 in combination with an aminofunctional

polysiloxane such as DURON FF 3185 which gives an excellent soft handle.

DURON HK 1040 (n · liq)**Combination of fatty acid ethoxylates and antistatic agents**

Lubricant for all types of fibres in semi-worsted yarn and woollen yarn spinning. Imparts a uniform drafting which has a positive influence on the running properties and the yarn evenness in all processing steps. Application is normally done from an aqueous dilution by spraying. The application amount depends on the spinning and fibre type and is between 0.25 – 1.2%.

DURON K 2088 (n · liq)**Reactive silicone crosslinking agent**

The product increases the softness and permanence of silicone softeners.

DURON K 3168 (a · p)**Mono/dialkyl phosphate**

Low foaming antistat, suited for fibres used in hydroentanglement processes. Usually used in combination with low foaming lubricants. Recommended opu: 0.2 – 0.5%.

DURON K 4054 (a · liq)**Fatty acid polyglycol ester with antistatic agent**

Especially developed antistat with enhanced thermal stability. Used in combination with any kind of fibre fill finishes. Recommended opu: 0.1 – 0.4%.

DURON KETTWACHS 109 (n · liq)**Aqueous solution of polyethylene glycols**

Liquid warp wax for stable fibre yarns. The product flattens the warp yarns and prevents singular fibres from sticking out by its film building properties. Missed threads during the weaving process are avoided, and in many cases sizes do not have to be applied. The application amount depends on the kind of fibre and is between 0.3 and 2%.

DURON KG 1710 (n · liq)**Ethoxylated carboxylic acid with phosphoric acid esters**

Synthetic lubricant for all kinds of fibre blends with high part of synthetics in worsted yarn and woollen yarn spinning mills. The product imparts a uniform drafting which positively balances the running properties in all processing steps. Excellent antistatic properties which allows

easy processing of 100% synthetic fibre blends. Also suitable for acrylic fibres in semi-worsted yarn spinning. Application is done by means of aqueous dilution, the application amount is between 0.1 and 0.4%.

DURON KG 2450 (n · liq)**Oxethylated carboxylic acid**

Carding finish for combing. Average fibre/fibre friction with low fibre/metal friction and thus good yield. The water retention is improved. Wool fats are not dissolved. Easily biodegradable. Application is either done pure or from an aqueous dilution. The application amount is between 0.2 – 0.4%.

DURON KG 3010 (n · liq)**Oxethylated carboxylic acids and antistatic agents**

Synthetic lubricant for all kind of fibres in combing mills, worsted spinning mills and semi-worsted spinning mills. Uniform drafting effectuates good and balanced running properties in all processing steps. Application is done by means of aqueous dilution, the application amount is between 0.15 – 0.4% depending on the fibre material.

DURON NV 2 (n · liq)**Fatty acid ethylene oxide addition in combination with colloidal silicic acid**

Synthetic finish for the production of needle punched nonwovens made of man-made fibres (flat fabric, cotton felts). Imparts the fibres an average to high fibre/fibre friction and in this way very much improves the dimension stability. Good antistatic properties. Application is done from an aqueous dilution, the application amount is approx. 1%. DURON NV 2 is recommended on coarse fibres.

DURON NV 7 (n · liq)**Mixture of water-soluble ethoxylates with phosphoric acid esters**

Needle-felt finish for the automotive sector. Special low-fogging needle-felt finish without odour. Guarantees trouble-free processing on the card and cross layer. The result is an intensive and fibre-protecting needling of the material. Application is done from an aqueous dilution made in the mixing line, the application amount is between 0.4 – 0.7%. DURON NV 7 is also applied in combination with DURON 14 for the production of PES staple fibres, application automotive sector.

DURON NV 12 (n · liq)**Combination of fatty acid polyglycol esters and antistatic agents**

Free from hydrocarbons. Synthetic finish for the production of needle-punched nonwovens made of man-made fibres. Guarantees a trouble-free processing on the card and cross layer. The result is an intensive and fibre protecting needling of the material. Effectively supports structure needling (loop-needles). Decreases the needle penetration force and in this way permits higher speeds of the sewing machine. Application is done from an aqueous dilution in the mixing unit; the application amount is between 0.3 – 0.5%.

DURON OF 1547 (c · liq)**Compounds of fatty acid amines, fatty acid esters and functional silicone**

Permanent hydrophilic spin finish for PP-spunbond. DURON OF 1547 stands out with excellent "Repeated Liquid Strike Through" values. It gives a soft handle to the PP material. The product is suitable for applications in the hygienic field. An oil pick-up of approx. 0.4% is recommended. On request botanicals can be incorporated.

DURON OF 2230 (n · liq)**Polyglycoether, derivated**

Spin Finish for PP-BCF and textured PP-CF-yarns. Due to good fibre protection suited for processing of low dpf yarns and Frieze, air-texturing also possible. Not supporting gasfading, no masterbatch solving. Thermally stable and by that applicable in any kind of heat set processes. Imparting good soft handle.

DURON OF 2236 (n · liq)**Polyglycoether, derivated**

Commercially attractive spin finish for PP-BCF and air-textured PP-CF-yarns. Not supporting gasfading, no masterbatch solving. Thermally stable and by that applicable in any kind of heat set processes. Imparting moderate soft handle.

DURON OF 3174 (n · liq)**Polydimethylsiloxane**

Spin Finish for continuous filaments from polypropylene. Imparts hydrophobic properties.

DURON OF 3201 (n · liq)**Mixture of polyglycoether and surfactants**

Spin finish for PP-FDY, PP-BCF and PP-tapes. DURON OF 3201 shows excellent spreading behaviour and thus uniform covering of the polypropylene surface. This is one important point for a trouble-free production.

DURON OF 3206 (n · liq)**Fatty acid polyglycol ester**

Spin finish for polypropylene tapes. DURON OF 3206 was designed to apply in neat form with special rheological properties to avoid splashing off.

DURON OF 3217 (n · liq)**Polyglycoether, derivated**

Spin Finish for PP-BCF- and textured PP-CF-yarns. First choice for production of high quality carpet yarns. Due to excellent fibre protection suited for processing of low dpf yarns, Frieze, and frictional texturing processes, air-texturing also possible. Not supporting gasfading, no masterbatch solving. Thermally stable and by that applicable in any kind of heat set processes. Imparting excellent soft handle.

DURON OF 3225 (n · liq)**Polyether derivatives**

PP-BCF spin finish imparting outstanding softness to carpet yarns. Excellent fibre protection, not supporting gasfading or masterbatch solving.

DURON OF 4012 (n · liq)**Finish of fatty acid esters**

Permanent hydrophilic spin finish for PP-spunbond. Permanent hydrophilic finish to 100% silicone-free for nonwovens which stands out due to its very good "Repeated Liquid Strike Through" values. The product is suitable for applications in the field of hygienic articles. The recommended application amount is between 0.4 – 0.5%. On request botanicals can be incorporated.

DURON OS 1547 (c · liq)**Compounds of fatty acid amines, fatty acid esters and functional silicone**

Permanent hydrophilic spin finish for PP staple fibre. DURON OS 1547 stands out by excellent "Repeated Liquid Strike Through" values and good repeated sinking times. It imparts PP material a soft handle. The product is for application in the field of

hygienic articles. An application amount of approx. 0.4% is recommended. On request botanicals can be incorporated.

DURON OS 2221 (n · liq)**Aqueous preparation of non-ionic fatty acid esters**

Hydrophobic spin finish for production of hygienic PP-fibres. It combines soft handle with highest cardability. The raw materials used are neither animal derived nor genetically modified.

DURON OS 3034 (n · liq)**Mixture of selected fatty acid polyglycol esters**

Spin finish for high crimped PP staple fibres. In spite of the high crimp it guarantees a good bale opening and an easy further processing of the fibres. The recommended application amount is between 0.6 – 0.8%.

DURON OS 3151 (n · liq)**Combination of fatty acid polyglycol ethers and esters**

Spin finish for PP short cut fibres. The product supports the particularly difficult cutting process for short cut fibres. DURON OS 3151 has an extremely low tendency to foam and prevents the static charging during the processing, and especially during packaging. Fibres produced with DURON OS 3151 show a spontaneous and even distribution in concrete. The product is based on FDA listed raw materials and therefore it is suitable for the production of short cut fibres with contact to food articles. Oil pick-up: 0.5 – 0.7%.

DURON OS 3176 (n · liq)**Fatty acid polyglycol ester**

Spin-draw finish and final spin finish for the PP staple fibre production. Provides a good cohesion, and gives an average fibre/fibre and fibre/metal friction. Due to selected raw materials DURON OS 3176 does not support gas fading. The total oil pick-up is 0.6 – 0.8%.

DURON OS 3184 (n · liq)**Solution of fatty acid polyglycol ester**

Suitable for the production of PP fibres particularly for carpet fibres. By application of DURON OS 3184 a strong crunchy handle is obtained on PP fibres. PP fibres generate thus a particularly high cohesion.

Recommended application quantity on the fibre: 0.5 – 0.7%.

DURON OS 3188 (n · liq)

Mixture of polyglycols and additives

Spin finish for polypropylene staple fibres. The product is applied for the production of staple fibres for the hydroentanglement. The total oil pick-up is 0.4 – 0.7%. In case of change of finish contamination with systems containing surfactants is to be avoided.

DURON OS 4012 (n · liq)

Preparation of fatty acid esters

Silicone-free, 100% active matter, permanent hydrophilic spin finish for PP staple fibres which are used in the hygienic field. DURON OS 4012 is adjusted to a skin friendly pH of 5.5. Recommended application amount: 0.4%. On request botanicals can be incorporated.

DURON OS 4022 (n · liq)

Fatty acid polyglycol ester with antistatic agent

Spin-draw finish and final finish for PP staple fibres. Provides a good yarn cohesion and an excellent antistatic effect. The produced PP fibres are suitable for the OE process and the ring spinning process. An oil pick-up of 0.6 – 0.8% is recommended.

DURON P 1 (n · liq)

Paraffin dispersion

Finely dispersed paraffin dispersion for an application in the textile and glass filament industry. Reduces the yarn/metal and yarn/yarn friction and replaces the hard waxing. Increases the flatness of the glass filament size and gives a soft handle on glass filaments. Oil pick-up: 1.3 – 2.5% in dependence on the yarn mixture.

DURON PP 3 (n · liq)

Combination of non-ionic and amphoteric surfactants

Spin finish for PES staple fibres. Exactly adjusted wetting and rewetting behaviour. Suitable for the production of hygienic nonwovens, particularly ADL fibres. It is applied in fibre production. The application amount is approx. 0.4%.

DURON SG 2420 (n · liq)

Ethoxylated carboxylic acid

Woollen spinning lubricant, free from mineral oil. Medium fibre/fibre friction

and low fibre/metal friction, thus a good yield. The product facilitates dyeing without a pre-wash and does not dissolve wool fat. DURON SG 2420 is applied out of an aqueous dilution in blending. The application quantity is between 0.5 and 2%.

DURON SI (n · liq)

Inorganic silicic sol in combination with polyglycols

Component for increasing the fibre/fibre friction in conventional and rotor spinning. DURON SI is added to the spin lubricant. The application quantity depends on the substrate. Compared with pure silicic acid products, guides for fibre and thread are more wear resistant if DURON SI is used. The product facilitates higher spinning speeds due to a reduced yarn twisting and is particularly of interest to rotor spinning.

DURON SL 2206 (c · liq)

Fatty acid condensation product

Silicone free hydrophobic spin finish for PP-spunbond in technical applications to increase softness and drapeability. Recommended opu: 0.5%.

DURON SL 2221 (n · liq)

Aqueous preparation of non-ionic fatty acid esters

Silicone free, hydrophobic spin finish for PP-spunbond imparting softness to PP-surface. Ingredients included in regulations for indirect food contact according to FDA and EU 10/2011. Recommended opu: 0.35 – 0.5%.

DURON SL 3188 (n · liq)

Mixture of polyglycols and additives

Spin finish for PP-spunbond with enhanced requirements on low foam build up. Recommended opu: 0.3 – 0.5%.

DURON SL 3204 (n · liq)

Aqueous emulsion of aminofunctional polysiloxanes

Silicone based hydrophobic spin finish for PP-spunbond in technical applications to increase softness. Recommended opu: 0.5%.

DURON SL 3211 (n · liq)

Macroemulsion of alkylmodified aminosiloxane

Hydrophobic silicone based spin finish for PP-spunbond to achieve a smooth and soft

surface. Suited for hygienic application. Recommended opu: 0.5%.

DURON SL 3214 (n · liq)

Emulsion of paraffines

Spin finish for PP-spunbond with dust catching properties. Recommended opu: 0.5% – 0.8%.

DURON SL 4035 (n · liq)

Fatty acid polyglycol ester

Spin finish for PP-spunbond fabrics with hydrophilic properties. DURON SL 4035 can be applied by lick roller, by kiss roller, by foam etc. All raw materials applied for DURON SL 4035 are included in regulations for indirect food contact according to FDA. Recommended opu: 0.4 – 0.8%. Recommended application quantities: spunbond fabrics 0.4 – 0.5%.

DURON SL 4069 (n · liq)

Mixture of selected fatty acid polyglycol esters

Permanent hydrophilic spin finish for PP-spunbond. Excellent "Liquid Strike Through" values are going along with lowest wet back. Suited for hygienic application with recommended opu of 0.5%. On request botanicals can be incorporated.

DURON SL 4077 (a · liq)

Fatty acid polyglycol ester with additives

Hydrophilic spin finish for PP-Spunbond material with enhanced requirements in respect of rapid wetting properties. Recommended opu: 0.4 – 0.8%.

DURON TX 2080 (a · liq)

Special oils combined with emulsifiers

Preparation for filaments and coning oil for textured filaments. DURON TX 2080 is particularly designed for a perfect runability on filaments of all polymer types. Could be used as a coning oil if low emission values are required. The oil pick-up is according to the application field.

DURON TX 4015 (a · liq)

Preparation of mineral oil and non-ionic surfactants

Coning and spinning oil easily to be washed off for processing of filament and staple fibre yarns of synthetic and natural fibres in spinning, twisting and texturing. DURON TX 4015 is applied in neat form. Pick-up: 0.5 – 2%.

DURON TX 4073 (a · liq)

Preparation of mineral oil and non-ionic surfactants

Alternative to Duron TX 4015 in case of enhanced requirements in respect of anti-splash properties. Recommended opu: 0.5 – 2%.

DURON VWS (n · liq)

Aqueous emulsion of an aminofunctional polysiloxane

Softener based on silicone for the finishing of wool tops. Very soft and smooth handle, improvement of the "antipilling", "felting" and "non felting" effect, not yellowing. Particularly designed for wool aftertreatment subsequent to a Basolan procedure.

DURON X 730 (n · liq)

Reactive silicone crosslinking agent

Crosslinking agent for silicone softeners. Depending on the individual handle we recommend 1 – 5% active substance of DURON X 730 based on the quantity of applied silicone softener such as DURON FF 3185 and DURON FF 3190. To obtain a durable siliconisation a higher temperature for condensation is needed (e.g. 170 °C/5 min).

HANSA ASE 7620 (n · liq)

Silicone emulsion

Super soft finish for PA staple fibre. HANSA ASE 7620 is applied in combination with the crosslinking agent DURON K 2088 in a ratio of 9:1 (tel quel). The product is applied either in addition to the spin finish on the fibre line or by dipping. An oil pick-up of 0.4% referring to the fibre weight is recommended.

COATING

FLAME RETARDANT PASTE COATINGS

	Chemical base	Appearance	Film properties	Application fields
APYROL LV 21	filled compound based on acrylate with flame retardancy based on Br/Sb	smooth, white paste	medium hard	flame retardant coating for roller blinds and vertical blinds and for stiffening the back of black outs
APYROL P-ECO	filled, flame retardant compound based on acrylate, halogen free	smooth, white paste	medium hard	flame retardant halogen free coating for roller blinds and vertical blinds and for stiffening the back of black outs

FLAME RETARDANT FOAM COATINGS

	Chemical base	Appearance	Film properties	Application fields
APYROL B0-H	filled polymer dispersion with halogen donors and antimony oxide	white, low viscous paste	hard	flame retardant B0 coating for roller blinds and vertical blinds for DIN 4102/B1
APYROL GBO-E	filled polymer dispersion with halogen donors and antimony oxide	white, low viscous paste	medium	flame retardant B0 coating for roller blinds and vertical blinds for DIN 4102/B1
APYROL B0 ECO PLUS	filled polymer dispersion with halogen free FR-component	white, low viscous paste	medium	flame retardant halogen free black out coating with a medium, tack free handle for DIN 4102/B1
APYROL PREM E	filled polymer dispersion with organic halogen donors and antimony oxide	white, low viscous paste	soft	flame retardant, soft upholstery backcoating which fulfill the requirements of BS 5852 Part 1

FLAME RETARDANT FINISH BY PADDING

	Chemical base	Appearance	Durability	Application fields
APYROL BKW	phosphorous and sulphur compounds	clear, colourless liquid	no	for Co articles, certified for DIN 4102/B1 (by german institute for construction technic), not permanent
APYROL NCE CONC.	organic N-P compound	clear, colourless liquid	no	allround product for different kind of substrates, not permanent
APYROL PES 80	alkyl phosphonate	clear liquid	yes	for PES articles, permanent

FLAME RETARDANTS FOR THE EXHAUST PROCESS

	Chemical base	Appearance	Durability	Application fields
APYROL ZAC	zirconium acetate solution	clear liquid	yes	for wool – "low smoke" demand
APYROL ZFK	potassium-hexafluorozirconate	white powder	yes	for wool – standard product

AUXILIARIES FOR FLAME RETARDANT COATING

	Chemical base	Appearance	Application fields
APYROL FR CONC. E	aqueous dispersion of antimony and halogen donors	white, low viscosity paste	binder-free compound based on Sb/halogen
APYROL PP 41	ammonium polyphosphate	fine, white powder	binder-free, Sb-free/halogen-free powder

DISPERSIONS / BINDERS

	Chemical base	Appearance	Film properties	Characterisation
TUBICOAT A 19	polyacrylate	white dispersion	soft	crosslinkable
TUBICOAT A 22	polyacrylate	white dispersion	soft	self-crosslinking
TUBICOAT A 23	styrene acrylate	white, dispersion	medium hard	not crosslinking, slightly hydrophobic
TUBICOAT A 36	styrene acrylate	white dispersion	very soft	self-crosslinking
TUBICOAT A 41	polyacrylate	white dispersion	soft	self-crosslinking, also used as selvedge gum
TUBICOAT AC 506	polyacrylate	white dispersion	soft	self-crosslinking, can be combined with different FR components
TUBICOAT AC 541 FF	polyacrylate	white dispersion	hard	self-crosslinking, formaldehyde-free
TUBICOAT B 45X	latex	white dispersion	soft	butadiene copolymer, durable to dry cleaning
TUBICOAT CH 5078 FF	polyacrylate	white dispersion	very soft	self-crosslinking, formaldehyde-free
TUBICOAT E 4	ethylene vinyl acetate	white dispersion	soft	self-crosslinking
TUBICOAT PU 60	polyurethane	white dispersion	soft	stable to hydrolysis, good durability to dry cleaning
TUBICOAT PU-UV	polyurethane	white dispersion	hard	UV-stable, stable to hydrolysis
TUBICOAT PU-VH NEU	polyurethane	white dispersion	very hard	pleatable
TUBICOAT PUH-BI	polyurethane	white dispersion	hard	heat-sealable
TUBICOAT PUS	polyurethane	white dispersion	soft	stable to electrolytes, foamable
TUBICOAT SC FF	styrene	white dispersion	very hard	crosslinkable, formaldehyde-free
TUBICOAT SI 55	polysiloxane with functional groups	white emulsion	soft	silicone elastomer to optimize the handle
TUBICOAT VA 10	vinyl acetate	white dispersion	hard	not crosslinking

THICKENERS

	Chemical base	Appearance	Application fields
TUBICOAT HEC	cellulose ether	yellowish powder	natural thickener, stable to electrolytes
TUBICOAT VERDICKER ASD	acrylic polymer	white, low viscous liquid	synthetic thickener, has to be neutralised
TUBICOAT VERDICKER LP	polyacrylic acid	yellowish, slightly viscous liquid	pre-neutralised synthetic universal thickener
TUBICOAT VERDICKER PRA	acrylic acid copolymer	white, low viscous liquid	rheological additive to reduce the penetration of the coating paste into the fabric
TUBICOAT VERDICKER PUR 41	associative PU-thickener	clear to slightly cloudy liquid	rheological thickener for coating pastes, also for lower pH-values

FOAMING AUXILIARIES

	Chemical base	Appearance	Application fields
TUBICOAT AOS	amine oxide	clear liquid	universal foaming agent, also for FC foam finishing
TUBICOAT BOS	mixture of special foamers and stabilizing agents	whitish liquid	foaming component for producing stable foam coatings
TUBICOAT SHM	ammonia stearate	glossy, viscous paste	stabiliser for stable foams
TUBICOAT STABILISATOR RP	alkyl sulphosuccinamide	yellowish, soft paste	stabiliser to improve the stable foam quality

ANTIFOAMS

	Chemical base	Appearance	Application fields
TUBICOAT ENTSCHÄUMER BSN	silicone based compound	white emulsion	antifoam for coating pastes with high effectiveness
TUBICOAT ENTSCHÄUMER N 20	mineral oil	yellowish liquid	antifoam for coating pastes

CROSSLINKING AGENTS / FIXATIVES

	Chemical base	Appearance	Application fields
TUBICOAT FIX CDI	carbodiimide	liquid	crosslinker based on carbodiimide
TUBICOAT FIX ICB CONC.	isocyanate	colourless liquid	unblocked isocyanate, for heat-sensitive substrates
TUBICOAT FIXIERER FA	melamine resin derivative	clear, colourless liquid	melamine resin containing low amount of formaldehyde for crosslinking of coating products, standard fixing agent for coating pastes
TUBICOAT FIX H26	isocyanate	low viscous white liquid	blocked isocyanate, free from butanonoxime, non-ionic, suitable for coating products, resin and FC finishes
TUBICOAT FIXIERER HT	melamine resin	clear, colourless liquid	melamine resin for crosslinking of coating products

COMPOUNDS FOR PASTE COATING

	Chemical base	Appearance	Application fields
TUBICOAT ELH	compound based on polyurethane	black, medium viscous paste	paste for producing highly conductive coatings
TUBICOAT HWS-1	compound based on acrylate	white, medium viscous paste	coating for high watercolumn
TUBICOAT KL-TOP F	compound based on polyurethane	white paste	transparent topcoat for solvent-free imitation leather coatings
TUBICOAT MEA	compound based on polyurethane	white, high viscous paste	coating protecting from liquid metal splashes
TUBICOAT NTC-SG	compound based on acrylate	white, medium viscous paste	topcoat for 2-layer tablecloth coating
TUBICOAT PERL PU SOFT	compound based on polyurethane	smooth, iridescent paste	soft pearlescent compound for fashionable effects
TUBICOAT PERL VC CONC.	compound based on polyurethane	smooth, iridescent paste	pleatable pearlescent compound
TUBICOAT PUL	compound based on polyurethane	white, high viscous paste	three-dimensional dot coating with good abrasion fastness, for technical applications
TUBICOAT TCT	compound based on polyurethane	white, viscous paste	transparent topcoat coating for stable foams or pastes
TUBICOAT WLI	compound based on acrylate	white, smooth paste	compound to achieve a "peach skin" effect or suede-like handle

COMPOUNDS FOR FOAM COATING

	Chemical base	Appearance	Application fields
TUBICOAT BO-UR	filled synthetic dispersion	white, low viscous paste	medium hard, good value blackout coating with cold flexibility
TUBICOAT BO-W	filled synthetic dispersion	white, low viscous paste	soft blackout coating, most of all for curtains
TUBICOAT KLS-M	aqueous synthetic dispersion based on polyurethane	white, low viscous paste	stable foam compound for producing an embossable, solvent-free imitation of leather coating
TUBICOAT MP-W	aqueous synthetic dispersion based on polyurethane	white, low viscous paste	compound for functional, stable foam coating, for technical applications
TUBICOAT MP-D	aqueous synthetic dispersion	white, low viscous paste	good value compound for a functional, stable foam coating

LSR COATINGS

	Chemical base	Appearance	Application fields
TUBCOSIL HAB 4-1 A AND B	2-component silicone elastomer	clear, translucent	soft, high elastic coating with very good abrasion resistance
TUBCOSIL HAB 5-1 A AND B	2-component silicone elastomer	clear, translucent	medium hard, high elastic coating with very good abrasion resistance and high tear resistance
TUBCOSIL HAB 5 FR A AND B	flameretardant 2-component silicone elastomer	black	medium hard, high elastic coating with very good abrasion resistance and high tear resistance

OTHER AUXILIARIES FOR COATING

	Chemical base	Appearance	Application fields
TUBICOAT EMULGATOR HF	ethoxyl adduct	transparent liquid	standard emulsifier to improve the distribution of pigments
TUBICOAT HOP-S	modified polysiloxane	weakly yellowish liquid	auxiliary to optimise adhesion of aqueous coatings on synthetic substrates or substrates which are difficult to wet
TUBICOAT MOP NEU	compound based on acrylate	white, cloudy liquid	compound in combination with vector protection as a one sided application with high wash durability
TUBICOAT WBV	glycol mix	clear, colourless liquid	agent preventing roller deposits
TUBICOAT WEISS EU	suspension based on titanium dioxide	white, slightly viscous paste	suspension for white pigmentation of coating pastes or stable foams

WATER REPELLENCY/OIL REPELLENCY

	Chemical base	Appearance	Application fields
TUBIGUARD® 10-F	fluorocarbon dispersion	beige, low viscous liquid	room temperature fluorocarbon based on C6 chemistry, particularly suitable for temperature sensitive articles
TUBIGUARD® 30-F	fluorocarbon dispersion	beige, low viscous liquid	fluorocarbon product, due to it's non-ionic character it can be combined with most auxiliaries e.g. binders, flamereatrdant properties are barely influenced
TUBIGUARD® 86-F	fluorocarbon dispersion	beige, low viscous liquid	fluorocarbon product, especially suitable for protective clothing and for the filtration range
TUBIGUARD® 90-F	fluorocarbon dispersion	beige, low viscous liquid	fluorocarbon resin especially for cellulosic fibres and their blends
TUBIGUARD® LD-F	fluorocarbon dispersion	beige, low viscous liquid	good value fluorocarbon product, especially for the filter range and synthetic fibres, e.g. PES, PP
TUBIGUARD® PC 3-F	compound based on FC	white paste	FC containing paste for water- and oilrepellency effect on one side for technical protective wear

FLUORINE FREE WATER REPELLENCY

	Chemical base	Appearance	Application fields
ECOPERL 4	functionalized polymers and waxes	white, low viscous liquid	fluorine-free product for washable hydrophobic treatment of outdoor articles
ECOPERL CC	functionalized polymers and waxes	white, high viscous paste	fluorine-free pastecoating for one sided hydrophobic effects
ECOPERL HC	modified polysiloxane	clear to slightly cloudy liquid	fluorine-free hydrophobic treatment with dry-cleaning durability

FILMS/MEMBRANES/LAMINATION

	Chemical base	Appearance	Application fields
LAMETHAN ADH-1	compound based on dispersions	white, low viscous paste	foam adhesive for dry lamination with breathable films or for bonding two fabrics
LAMETHAN ADH-L	compound based on a dispersion	whitish paste	paste adhesive for wet laminations
LAMETHAN LB 15-T/ LB 25	hydrophilic polyurethane film	matt, transparent	breathable, hydrophilic film, with a thickness of 15 µm resp. 25 µm, application for protective and working clothes, leisure and sportswear, also available in white optic
LAMETHAN TAPE DE 80	polyester urethane	matt, transparent	2-layer PU tape for seam sealing, width 22 mm, thickness 80 µm, roller dimension 250 running metres, washdurability up to 40 °C
LAMETHAN VL H920 O BR 160	PES lining with polyurethane film	oliv	prelamine for the production of a three layer laminate by foam lamination. Application field: Protective and workwear
TUBICOAT ASK	acrylic acid ester copolymer	white, medium viscosity dispersion	sticky dispersion as additive to foam or paste adhesives to increase adhesion

PRODUCT INDEX

APYROL BKW

Mixture of special phosphorous and sulphur compounds. Flame retardant for natural and regenerated cellulose fibres as well as for wool and its blends. For textiles made of cellulose fibres APYROL BKW has the test mark PA-III 1.37 of the "Institut für Bautechnik" (institute for construction technique).

APYROL BO-ECO PLUS

Halogen-free, foamable compound for producing flameretardant black-outs (3-layer) or light-out systems (2-layer). Suitable for all knife systems which permit a defined add-on and layer thickness. Provided the base material and application amount are suitable, articles coated with APYROL BO-ECO PLUS can comply with the requirements of DIN 4102/B1.

APYROL FR CONC. E

Binder-free blend based on antimony/halogen added to different binder systems in order to achieve flame retardant properties.

APYROL GBO E/APYROL BO-H

Flameretardant, foamable compound for producing black-outs (3-layer) or light-out systems (2-layer). Suitable for all knife systems which permit a defined add-on and layer thickness. Provided the base material and application amount are suitable, articles coated with APYROL GBO E or APYROL BO-H can comply with the requirements of DIN 4102/B1.

APYROL LV 21

Flame retardant paste coating for light protection articles. APYROL LV 21 is offered for the coating of roller blinds, vertical blinds, as well as stiffening backcoating for black-outs. On suitable basic materials and with a sufficient application quantity articles coated with APYROL LV 21 can comply with the requirements of DIN 4102/B1.

APYROL NCE CONC.

Product free from halogen and antimony for the flame retardant finishing of cellulosic fibres. Padding application. The necessary product add-on depends on the fabric weight, fibre composition, fabric structure and flame retardant standard to be met.

APYROL P-ECO

APYROL P-ECO is a flame retardant halogen-free coating paste for producing roller blinds and vertical blinds. APYROL P-ECO can also be coated as back coating for black-outs.

APYROL PES 80

Alkyl phosphonate

Permanent flame retardant for 100% polyester for padding application.

APYROL PP 41

Binder-free mixture based on ammonium polyphosphate which can be added to different binder systems in order to achieve flame retardant properties.

APYROL PREM E

Coatings with APYROL PREM E are applied for flame-retardant upholstery backcoatings. They are fast to soaking and with a sufficient add-on they comply with the requirements of BS 5852, part 1. Fabrics coated with APYROL PREM E stand out for their soft fabric handle.

APYROL ZAC/APYROL ZFK

Flame retardant finish of wool which is fast to delicate washing and dry cleaning. The products can be exclusively applied by the exhaust method.

ECOPERL 4

ECOPERL 4 is a fluorine-free hydrophobic agent which gives a wash durable finish to all fibre types. ECOPERL 4 is mainly suited for outdoor and sports clothing.

ECOPERL CC

Fluorocarbon-free paste coating for a one-sided hydrophobic finishing of textiles. With sufficient add-on and good crosslinking ECOPERL CC gives good wash durability. The product can be applied by knife-over-air or suitable screens.

ECOPERL HC

ECOPERL HC is a fluorine-free hydrophobic agent which is suited for various fibre types. ECOPERL HC produces finishes which are durable to dry cleaning.

LAMETHAN ADH-1

Foamable adhesive excellently suitable as dried stable foam for the film lamination with LAMETHAN membranes. Film

laminations with suitable basic fabrics and LAMETHAN LB 15-T or LB 25 give a very soft handle, good durability to washing and high water vapour permeabilities.

LAMETHAN ADH-L

Pasty adhesive applied for the wet lamination. LAMETHAN ADH-L can be applied by screen or knife-over-air.

LAMETHAN LB 15-T/ LAMETHAN LB 25

Transparent hydrophilic polyurethane membrane with a high water vapour permeability to produce breathable film laminates.

LAMETHAN TAPE DE 80

2-layer PU tape for seam sealing. Width 22 mm, thickness 80 µm, roller dimension 250 running metres, washdurability up to 40 °C.

LAMETHAN VL H920 O BR 160

Prelaminate consisting of a hydrophilic PU membrane and a olive PES lining. It is applied to produce three layer laminates. The base material is coated with a stable foam adhesive and then the prelaminate is laminated onto it. It is not necessary anymore to sew in any additional lining material.

TUBCOSIL HAB SERIES

Addition-crosslinking two component silicone elastomers (LSR) mixed at a ratio of 1:1 (components A and B). Depending on the product in use different demands can be met.

TUBICOAT A SERIES

Aqueous dispersions based on polyacrylates and styrene acrylates of different hardness degrees, flexibilities, solids contents and crosslinking properties.

TUBICOAT AC 541 FF TUBICOAT CH 5087 FF TUBICOAT SC FF

Formaldehyde-free, aqueous dispersions based on polyacrylates and styrene of different hardness degrees, flexibilities, solids contents and crosslinking properties.

TUBICOAT AOS

TUBICOAT AOS is a very efficient foaming auxiliary. It stands out for the fine pores of

the produced foams. TUBICOAT AOS can be combined with almost any auxiliary in question.

TUBICOAT ASK

Sticky dispersion based on acrylate as additive to foam and paste adhesives to increase the adhesions.

TUBICOAT B 45X

Aqueous, thermally self-crosslinking, soft dispersion based on acrylonitrile butadiene which is durable to dry cleaning.

TUBICOAT BO-UR/BO-W

TUBICOAT BO-UR and TUBICOAT BO-W are foamable compounds for producing black-outs (3-layer) or light-out systems (2-layer). Suitable for all knife systems which permit a defined add-on and layer thickness. TUBICOAT BO-UR stands out for a good coldflexibility. TUBICOAT BO-W provides a slightly softer handle and often is used for the coating of curtains.

TUBICOAT BOS

TUBICOAT BOS is a combination of foaming auxiliaries and stabilizing agents. It serves as foam component for black-out recipes, but can also be added to other binder systems.

TUBICOAT E 4

TUBICOAT E 4 is based on ethylene vinyl acetate and forms a soft, transparent, slightly sticky and flexible film which has a good washdurability if being crosslinked.

TUBICOAT ELH

TUBICOAT ELH is a ready-to-use product for producing electrically conductive coatings. It is applied as a paste coating with suitable knife systems. The application amount is decisive for the conductivity.

TUBICOAT EMULGATOR HF

TUBICOAT EMULGATOR HF clearly increases the fine distribution of pigments. It has a good dispersing capacity for solids, liquids and water-miscible particles.

TUBICOAT ENTSCÄUMER BSN/N 20

Silicone or mineral oil based antifoams
Both products are highly efficient antifoams for all coating recipes and synthetic dispersions. During preparation they

already reliably prevent foam generation. The products are highly compatible with other common auxiliaries.

TUBICOAT FIX CDI

Crosslinking agent based on carbodiimide which stands out for a good compatibility and a long pot life.

TUBICOAT FIXIERER FA

Melamine resin containing very small amount of formaldehyde to increase the crosslinking degree of various synthetic dispersions.

TUBICOAT FIX H26

Blocked, polyfunctional isocyanate clearly increasing the crosslinking degree of synthetic dispersions at curing temperatures as of 120 °C. The product is free from butanoxime. Due to its non-ionic character TUBICOAT FIX H26 is also suitable for FC finishes.

TUBICOAT FIXIERER HT

TUBICOAT FIXIERER HT is based on melamine resin and excellently suitable for increasing the crosslinking degree and the fastness level of most synthetic dispersions. The formaldehyde content of coatings with TUBICOAT FIXIERER HT is only slightly increased.

TUBICOAT FIX ICB CONC.

Formaldehyde-free, polyfunctional special crosslinking agent based on isocyanate. As TUBICOAT FIX ICB CONC. is unblocked, it is mostly applied if a good crosslinking at lower temperatures has to be achieved.

TUBICOAT HEC

Hydroxyethyl cellulose

TUBICOAT HEC is applied whenever synthetic thickeners cannot be applied. TUBICOAT HEC has a high thickening capacity and balanced rheological properties. TUBICOAT HEC is also used as a stabilizing component in instable foams.

TUBICOAT HOP-S

TUBICOAT HOP-S is an additional component applied to improve the adhesion of a coating on a synthetic substrate by increasing its wetting properties.

TUBICOAT HWS-1**Compound based on acrylate**

TUBICOAT HWS-1 is a ready-to-use compound for technical applications and if a high water column is demanded.

TUBICOAT KLS-M

TUBICOAT KLS-M is a stable foam compound applied for producing solvent-free imitation of leather coatings for fashion. The coating can be embossed and offers a very soft and flexible handle due to its foam structure.

TUBICOAT KL-TOP F

TUBICOAT KL-TOP F is applied as topcoat for solvent-free imitation of leather coatings. The coating is pleasantly dry and is durable to washing.

TUBICOAT MEA

Paste for coating protective clothing. TUBICOAT MEA is applied on permanently FR finished cotton or aramid types. Clothings coated with TUBICOAT MEA protect persons from liquid metal splashes or flying sparks (such as e.g. during welding).

TUBICOAT MOP NEU

TUBICOAT MOP NEU is used in combination with BEMATIN PER 40 as vector protection coating with very good washdurability.

TUBICOAT MP-W

TUBICOAT MP-W is a stable foam compound, based on polyurethane for producing functional coatings. By selecting the right basic fabric very soft coatings with a high water vapour permeability and a high water pressure resistance can be achieved.

TUBICOAT MP-D

TUBICOAT MP-D is a good value stable foam compound for producing breathable coatings. Aside from its application in technical fields, TUBICOAT MP-D is also applied as flexible and elastic coating in fashion trends.

TUBICOAT NTC-SG**Compound based on acrylate**

TUBICOAT NTC-SG is applied as topcoat for tablecloth coatings.

TUBICOAT PERL PU SOFT

Smooth, iridescent paste with a high share of pearlescent pigments. TUBICOAT PERL PU SOFT gives a soft coating with a pearlescent optic and is mainly applied for fashion articles. The product is applied via knife-over-air or screen.

TUBICOAT PERL VC CONC.

Compound for producing stiff pearlescent coatings on vertical blinds and roller blinds which are applied by knife over air or by screen.

TUBICOAT PU 60**Polyurethane dispersion**

TUBICOAT PU 60 forms a soft, film with high elasticity. Coatings with TUBICOAT PU 60 stand out for their very good stability to hydrolysis and durability to dry cleaning and are applied in fashionable and functional articles.

TUBICOAT PU-UV**Polyurethane dispersion**

TUBICOAT PU-UV forms a hard, dry and transparent film. Coatings based on TUBICOAT PU-UV are stable to UV-radiation and highly stable to hydrolysis.

TUBICOAT PUH-BI**Polyurethane dispersion**

TUBICOAT PUH-BI forms a hard, dry and transparent film with an elastic and flexurally rigid handle. Coatings based on TUBICOAT PUH-BI are heatsealable.

TUBICOAT PUL

Compound based on polyurethane for producing three-dimensional dot coatings. TUBICOAT PUL is an anti-slip coating mainly used in the technical field.

TUBICOAT PUS**Polyurethane dispersion**

TUBICOAT PUS forms a very soft, non-sticky and highly elastic film. Its application fields range from fashion, suitcases and bags up to technical coatings.

TUBICOAT VH NEU**Polyurethane dispersion**

TUBICOAT VH NEU forms a very hard, dry and transparent film. Coatings based on TUBICOAT VH NEU can be pleated.

TUBICOAT SHM**Ammonium stearate**

TUBICOAT SHM is applied whenever a good stability of the applied foam is required.

TUBICOAT SI 55

Special silicone elastomer which can also be used for a handle-giving post-impregnation of fine coatings. The coatings are imparted with a washdurable, smooth, soft and "silicone-like" handle.

TUBICOAT STABILISATOR RP

TUBICOAT STABILISATOR RP is applied to improve the foam quality of stable foams. Both, the fine pores and the drying behavior of systems which contain pigments.

TUBICOAT TCT

This paste is applied as topcoat for stable foam or paste coatings when a high water column is demanded. TUBICOAT TCT forms a transparent film.

TUBICOAT VA 10**Polyvinyl acetate dispersion**

TUBICOAT VA 10 forms a hard, brittle film. TUBICOAT VA 10 has proven very well for stiffening textiles and as hard blending component together with e.g. acrylate dispersions.

TUBICOAT VERDICKER ASD

TUBICOAT VERDICKER ASD has a high thickening power with a distinct pseudoplastic character. Due to its low viscosity TUBICOAT VERDICKER ASD can be easily introduced into the recipes to be thickened. TUBICOAT VERDICKER ASD has the best thickening power at pH values > 8.

TUBICOAT VERDICKER LP

Synthetic pre-neutralised thickener for aqueous coating pastes. Coating effects with a distinct surface character are achieved. TUBICOAT VERDICKER LP has to be stirred in with an effective agitator, so that there are no lumps in the paste.

TUBICOAT VERDICKER PRA

Synthetic rheological additive for aqueous coating pastes which stands out for very long-flowing rheological properties.

TUBICOAT VERDICKER PUR 41

Associative PU thickener with a very good thickening effect on concentrated coating pastes. The product has already a thickening effect within the acid range as of approx. pH 4.

TUBICOAT WBV

TUBICOAT WBV is a product especially developed for the padding application. It reduces the deposit of pigments and binders on the padding rollers and supports the redispersibility.

TUBICOAT WEISS EU

Ultra-white, concentrated titanium dioxide suspension as additive for coating pastes and compounds. Easy to use in formulations which need to be foamed or used as a stable foam.

TUBICOAT WLI

Compound based on a soft acrylate. TUBICOAT WLI is a ready-for-use compound to produce coatings with a suede or peach skin effect.

TUBIGUARD® F-SERIES (c · liq)

Fluorocarbon dispersion

Fluorocarbons of the F-SERIES are based on C6 chemistry for achieving water repellent and oil repellent effects, which can be durable to washing and dry cleaning. Products of TUBIGUARD F-SERIES are suitable for synthetic and natural fibres and their blends. They are used in many different technical applications and can be applied by padding, by instable foamcoating or by spraying.

CHT GROUP WORLDWIDE

Australia

CHT AUSTRALIA PTY. LTD.
33 Elliott Road
Dandenong
Victoria, 3175
Phone +61 3 97 06 74 00
Fax +61 3 97 06 74 11
info.australia@cht.com

Austria

CHT AUSTRIA GMBH
Áueleweg 3
6812 Meiningen
Phone +43 55 22 3 12 23
Fax +43 55 22 3 12 29
info.austria@cht.com

Belgium

CHT BELGIUM NV
Otegemstraat 30
8550 Zwevegem
Phone +32 56 20 31 14
Fax +32 56 20 01 19
info.belgium@cht.com

Brazil

CHT BRASIL QUÍMICA LTDA.
Av. Antônio Cândido
Machado, 1779
07760-000-Cajamar - SP
Phone +55 11 33 18 89 11
Fax +55 11 33 18 89 19
info.brazil@cht.com

China

CHT CHINA COMPANY LTD.
Flat C, 23/F
Waylee Industrial Centre
30-38 Tsuen King Circuit
Tsuen Wan
N.T. Hong Kong
Phone +852 24 13 16 98
Fax +852 24 15 24 33
info.china@cht.com

Colombia

CHT COLOMBIANA LTDA.
Calle 84 Sur N° 37 - 10
Parque Industrial Puerta de Entrada
Bodegas 119 y 120
Variante de Caldas
Sabaneta - Antioquia
Phone + 574 44 44 83 8
Fax + 574 44 40 88 7
info.colombia@cht.com

France

CHT FRANCE S.A.R.L.
590 Boulevard Albert Camus
69400 Villefranche sur Saône
Phone +33 4 69 37 00 60
info.france@cht.com

Germany Headquarters

CHT GERMANY GMBH
Bismarckstraße 102
72072 Tübingen
Phone +49 70 71 154 0
Fax +49 70 71 154 290
www.cht.com, info@cht.com

Great Britain

CHT UK MANCHESTER LTD.
Levens Road
Newby Road Industrial Estate
Hazel Grove
Cheshire
Stockport SK7 5DA
Phone +44 161 4 56 33 55
Fax +44 161 4 56 41 53
info.uk@cht.com

India

CHT INDIA PVT. LTD.
121/122, Solitaire Corporate Park
151, M. V. Road
Chakala, Andheri (E)
Mumbai - 400 093
Phone +91 22 61 53 83 83
Fax +91 22 61 53 83 13
info.india@cht.com

Italy

CHT ITALIA S.R.L.
Via Luigi Settembrini, 9
20020 Lainate (MI)
Phone +39 02 93 19 51 11
Fax +39 02 93 19 51 12
info.italia@cht.com

Mexico

CHT MEXICO S.A. DE C.V.
Joaquín Serrano No. 110
Zona Industrial Torreón
270919 Torreón, Coahuila
Phone +52 8 71 7 49 48 00
Fax +52 8 71 7 49 48 20
info.mexico@cht.com

Pakistan

CHT PAKISTAN (PRIVATE) LTD.
CHT House
54-B Sundar Industrial Estate
Raiwind
Lahore
Phone +92 42 35 29 74 76 81
Fax +92 42 35 29 74 82
info.pakistan@cht.com

Peru

CHT PERUANA S.A.
Manzana C1, Lote 3
Lotización Industrial Huachipa Este
Quebrada Huaycoloro
San Antonio - Huarochiri
Phone +511 362 42 42
Fax +511 362 31 79
info.peru@cht.com

South Africa

CHT SOUTH AFRICA (PTY) LTD.
5, Daytona Place,
Mahogany Ridge
P. O. Box 15792
3608 Westmead
Phone +27 31 7 00 84 36
Fax +27 31 7 00 84 45
info.southafrica@cht.com

Switzerland

CHT SWITZERLAND AG
Kriessernstrasse 20
9462 Montlingen
Phone +41 71 7 63 88 11
Fax +41 71 7 63 88 88
info.switzerland@cht.com

Tunisia

BEZEMA TUNISIE S.A.R.L.
Zone Industrielle
8040 Bou Argoub
Phone/Fax +216 72 25 93 44
info.tunesia@cht.com

Turkey

CHT TURKEY KIMYA SAN. VE TIC. A.Ş.
Akçaburgaz Mahallesi 123 Sokak No: 2
34510 Esenyurt/Istanbul
Phone +90 212 88 679 13
Fax +90 212 88 679 20
info.turkey@cht.com

Zimbabwe

CHT ZIMBABWE (PRIVATE) LTD.
Factory No. 5
248 Williams Way
Private Bag 2009
Amby, Msasa, Harare
Phone +263 4 48 73 31
Fax +263 4 48 61 07
info.zimbabwe@cht.com

OFFICES

Poland

OFFICE CHT POLAND
Przedstawicielstwo w Polsce
ul. Sienkiewicza 82/84
90 - 318 Lodz
Phone +48 42 6 30 27 75
info.poland@cht.com

Russia/Belarus

OFFICE CHT MOSCOW
Simferopolskij Bulvar, dom 7A
kvartira 15-16, 4. Etage
117556 Moskau
Phone +7 499 3 17 95 13
Fax +7 499 6 13 97 11
info.russia@cht.com

Spain

**CHT GERMANY GMBH
SUCURSAL EN ESPAÑA**
Av. Ports d'Europa 100
Planta 3 - oficina 8
08040 Barcelona
Phone +34 93 5 52 57 75
Fax +34 93 5 52 57 79
info.spain@cht.com



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www.cht.com