Product Overview

TEXTILE AUXILIARIES

Auxiliaries for textile manufacturing products





We offer tailor-made solutions for the broad and highly diversified textile auxiliaries market.

Thousands of formulated textile auxiliaries are produced worldwide to improve the processability of fibers and garments, as well as the desired quality of the final textile goods. Behind the tailor-made properties for these textile auxiliaries is a synergistic combination of specific additives. Evonik is a key supplier of the surfactants and tailor-made chemicals that make up the valuable raw materials needed for the production of textile auxiliaries.

Backed up by technical know-how and long-term experience in the synthesis of organo-modified siloxanes and specialty organic surfactants, we have a unique and strong position as a specialty chemicals producer. Our comprehensive and extremely specialized product range can offer any textile formulator with the valuable components they need. Based on surface and interfacial science, we are continuously developing new molecules which offer special application properties by themselves, or in formulations. Our ability to run preliminary tests in our Technical Service Labs around the globe, as well as our customer orientation creates the best basis for a strong partnership with textile formulators. Since 1847 formulators have trusted in our innovations and have used them successfully as main ingredients and formulation aids for many textile auxiliaries. Our product portfolio covers a broad application range in diverse textile operations. These products may be used wherever softness, lubricity, spreading, static control, emulsification, wetting, water repellence, corrosion inhibition, levelling, foaming or defoaming performance is required.

Evonik is aware of the environmental and toxicological impact of the chemicals used in the textile industry. This is the main reason for our focus on providing our customers with biodegradable, non-toxic and nonsensitizing surfactants. Our attention is also focused on the specific requirements of the textile industry, like reducing heavy metal content and low emission factors. Our R & D, Technical Service and Sales & Marketing organizations are supported by an efficient Environmental, Health & Safety Department which assures the safety and regulatory compliance of our products to support our customers.

YARN / GARMENT PROCESSING

PROCESSING

| WETTING AND SPREADING AGENTS | | ANTIFOAMS |
|---------------------------------|--------|------------------------------|
| | PAGE 4 | |
| TEGOPREN [®] 5840 | | TEGO [®] Antifoam 3 |
| TEGOPREN [®] 5847 | | TEGO [®] Antifoam N |
| TEGOPREN [®] 5850 | | TEGOPREN [®] 4506 |
| TEGOPREN [®] 5852 | | TEGOPREN [®] 5801 |
| TEGOPREN [®] 5873 | | TEGOPREN [®] 6814 |
| | | SURFYNOL® MD 2 |

PRODUCTS TO INCREASE SUSTAINABILITY

Evonik's innovative products, systems and solutions enhance sustainable development and we work closely with our customers to help them meet their sustainability targets. Market-oriented research and development play an important role.

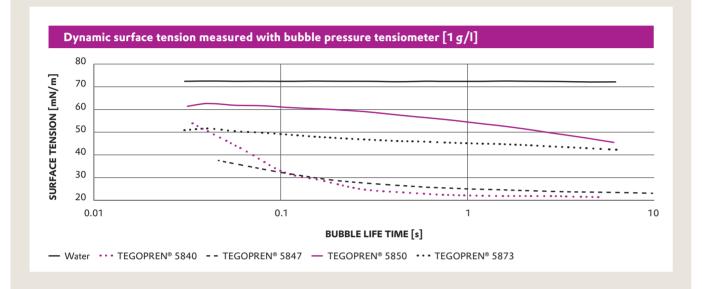
We support our customers in achieving the performance requirements of various textile labels. Our TEGOTEX[®] textile finishing products can prevent peeling effects and improve the durability of apparel and functional textiles which leads to lower micro plastic emissions. Our process improving additives help to use less water and solvents during textile manufacturing and are developed to meet the latest consumer and environmental requirements. We offer our customers resource-saving and energy-efficient solutions for a wide range of applications. In this way, we play a part in meeting the rising sustainability requirements across all of our markets.

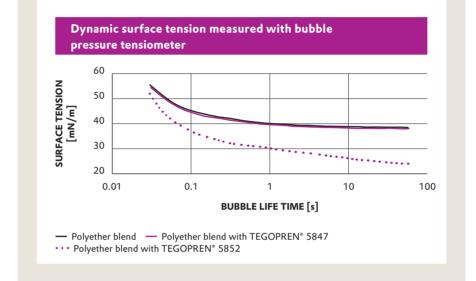


WETTING AND SPREADING AGENTS

Our TEGOPREN® polyether siloxanes provide outstanding wetting and spreading performance in textile auxiliary formulations. The general molecular architecture of these amphiphilic organo-modified siloxanes (OMS) is based on a polydimethylsiloxane (PDMS) backbone which the copolyethers of ethylene oxide (EO) and propylene oxide (PO) then attach to. These

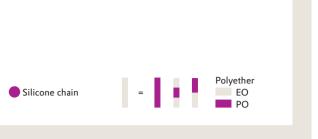
different molecules all vary in chain length and EO / PO ratios. Whereas the siloxane backbone provides a low surface tension, the organic moieties help to improve the compatibility of the OMS with the surrounding matrix. In aqueous systems EO-rich polyethers products are preferred, but the best choice for use in oil systems are products carrying PO-rich polyethers.





| | | - | POLA | RITY | | | | MOLECULAR V | VEIGHT [g/ | mol] | | | | | | | | | SURFACE T [mN/m] MI BY PENDAI METHOD A | EASURED NT DROP | | SOLUB | ILITY II | N DIFFE | RENT S | OLVENT | ſS |
|----------------------------|---------------------|-------------------|-------|---|---|---|-----|-------------|------------|------|------|------|------|------|------|------|----------------|-----------------|---|------------------------------|---------------------|-------|----------|------------|-----------|--------------|-----------|
| PRODUCT | COMPOSITION | ACTIVE MATTER [%] | WATER | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | - - - - - - - - - - - - - - - - - - - | | OIL | <500 | 1000 | 2000 | 3000 | 4000 | 5000 | 6000 | 7000 | 8000 | SI-CONTENT [%] | CLOUDPOINT [°C] | 0.1 % IN H ₂ O | 2 % IN POLY- ETHER BLEND* | VISCOSITY [mPas] | WATER | ALCOHOL | ALIPHATICS | ESTER OIL | PARAFFIN OIL | AROMATICS |
| TEGOPREN [®] 5840 | Trisiloxane | 100 | | | • | | | | | - | | | | | | | 12 | 20-30 | 21 | | 40-90 | + | + | + | - | - | + |
| TEGOPREN [®] 5847 | Trisolxane | 100 | | • | | | | | | | | | | | | | 10 | 51-58 | 22 | 34 | 50–100 | + | + | - | - | - | + |
| TEGOPREN [®] 5850 | Side chain siloxane | 100 | • | | | | | | | | | | | | | | 13 | 85-95 | 30 | | 300-450 | + | + | - | + | - | + |
| TEGOPREN [®] 5852 | Side chain siloxane | 100 | | | | | • | | | | | | | | | | 12 | <20 | | 22 | 220-380 | disp. | + | - | + | - | + |
| | Side chain siloxane | 100 | | | | • | | | | | | | | | | | 10 | 31 | 32 | | 350-580 | + | + | _ | + | - | |

4



This graph shows shows the dynamic surface tension of a polyether blend containing 2 % of our TEGOPREN® 5847 and TEGOPREN® 5852. It shows, that TEGOPREN[®] 5852 reduces the surface tension of the polyether blend, whereas TEGOPREN® 5847 has no effect on the surface tension of this system.

ANTIFOAMS

Today's textile industry faces many conflicting challenges. Improved efficiencies and cost reductions through shorter product cycles need to be achieved. At the same time the highest quality standards need to be maintained, while providing continuous innovation in yarn and garment processing of natural and man-made fibres. Aside from the beneficial characteristics of the surfactants used (leveling agents, scouring agents, wetting agents etc.), they are also responsible for the formation of foam during almost every stage of production. For instance, production will not be able to proceed at optimum speed if the jet fills with foam. So, care must be taken that the applied antifoam does not negatively impact the fabric quality by staining the fabric or does not disturb the machine runability.

PROTECTING AGENTS

Highly demanding processes in yarn and garment production require multi-functional additives. Our products have a wide range of properties such as emulsifiers or antistatic agents that help to protect both the machine, and the fiber filaments.

| | | | | YARN | PROCES | SSING | | GARM | ENT PR | OCESSI | NG |
|------------------------------------|-------------------------------|-------------------|--------------------------------------|--|---|---|-----------------------------------|--|---|-----------------------------------|---|
| PRODUCT | COMPOSITION | ACTIVE MATTER [%] | CLASSIFICATION/ APPLICATION | MELT SPIN FINISHING Polyester; Polyamid | DRY SPIN FINISHING Carbon; Polyacetic acid | WET SPIN FINISHING Viscose; PolyacryInitril | NON-WOVENS Polypropylen | TEXTILE LUBRICANTS Weaving and knitting oils | SIZING AUXILIARY Polyester; Polyamid | SCOURING AGENT Cotton; Viscose | BLEACHING AUXILIARY Alkaline peroxide bath |
| TEGO® Antifoam 3062 | Organic modified siloxane | 100 | Self- dispersible antifoam oil | • | • | | | | | • | |
| TEGO [®] Antifoam MR 1015 | Organic modified siloxane | 70 | Process antifoam | • | | • | | | • | • | |
| TEGOPREN [®] 4506 | Polyether siloxane | 100 | | | | • | | • | • | | |
| TEGOPREN [®] 5801 | Polyether siloxane | 100 | Non-polar dispersing | | | • | | | | • | |
| TEGOPREN [®] 6814 | Alkyl modified siloxane | 100 | auxiliary | | | | | | | • | |
| SURFYNOL [®] MD 20 | Organic molecular defoamer | 100 | Foam destabilizer | | | | • | | | | • |

| PRODUCT | COMPOSITION | ACTIVE MATTER [%] | HYDROPH LIPOPHILIO 5 10 | ILIC- C BALANCE 20 30 | AQUEOS SOLUBILITY | LUBRICANTS | ANTISTATICS | EMULSIFIERS | COROSION |
|-------------------------------|--|-------------------------|-------------------------------|-----------------------------|----------------------|------------|-------------|-------------|----------|
| | | | | | | | | | |
| TEGOPREN [®] 6922 | Silicone quat | 50 | | 20 | soluble | | • | | |
| REWOQUAT [®] CPEM | Coco pentaethoxy methyl ammonium methosulfate | 100 | | 28 | soluble | | • | • | |
| REWOPHAT° EAK 8190 | Lauryl polyglycol ether based phosphoric acid ester | > 98 | | 30 | soluble | • | | • | • |
| REWOCOROS [®] O 3 | Fatty acid monoethanol amine (MEA) conden- sation product based on oleamide | 100 | 10 | | dispersible | | | • | • |

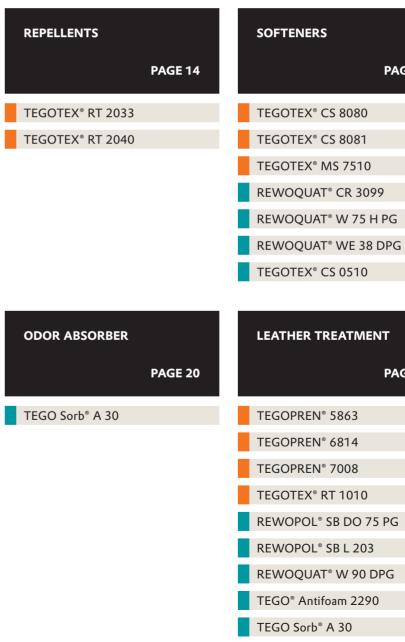
GARMENT FINISHING

PROCESSING

| WETTING AND SPREADING AGENTS/LOW FOAM PAGE 10 | WETTING AND SPREADING AGENTS/HIGH FOAM PAGE 10 |
|---|--|
| DYNOL [®] 360 | REWOMINOX® L 408 |
| SURFYNOL [®] 440 | REWOPOL [®] L 203 |
| SURFYNOL® AD 01 | SURFYNOL® 465 |
| SURFYNOL [®] PSA 336 | TEGO [®] Betain F 50 |
| TEGO [®] SQS 25 | |

| DEFOAMERS | EMULSIFIERS |
|---------------------------------|---------------------------|
| PAGE 12 | PAGE 13 |
| TEGO [®] Antifoam 2-89 | TOMADOL® 1-9 |
| TEGO [®] Antifoam 730 | TOMADOL® 23-6.5 |
| TEGO [®] Antifoam 1435 | TOMADOL [®] 25-7 |
| SURFYNOL® DF 110 D | TOMADOL [®] 25-9 |
| | TOMADOL [®] 45-7 |

TREATMENT



| PAGE 21 |
|---------|
| 3 |
| |
| 4 |
| 8 |
| 10 |
| O 75 PG |
| 203 |
| 90 DPG |
| |
| 2290 |
| |
| |

PAGE 16

TEGOTEX[®] UV 5050 REWOQUAT[®] W 75 H PG REWOQUAT® WE 15 DPG

PAGE 18

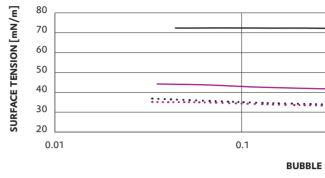
DENIM PROTECTION

9

WETTING AND SPREADING AGENTS

The processes in garment finishing are highly dynamic. Here our low molecular wetting and spreading agents help to rapidly decrease the surface tension. Our oleo platform offers a diverse spectrum of different structures, including for example Gemini surfactants and ethoxylated molecules, which provide hydrophilic, or lipophilic behavior and good compatibility across the complete pH range.

Dynamic surface tension measured with bubble pressure tensiometer [1 g/l]



- Water ···· SURFYNOL® 440 ···· SURFYNOL® PSA 336 - SURFYNOL® 465

Wetting and spreading agents

| | | | | POLARI | тү | • | | | MOLECULAR | R WEIGHT | [g/mo | 1] | | SURFACE TENSION [mN/m] MEASURED BY PENDANT DROP METHOD AT 300 s, RT | |
|--------------------------|---|----------------------|---------|--------|----|---|-----------------------|-----|-----------|----------|-------|-------|----------|--|------------------|
| PRODUCT | COMPOSITION | ACTIVE MATTER [%] | SOLVENT | HIGH | | | · · · · · | LOW | 500 |) 10 | 00 | 10000 | pH RANGE | 0.1 % IN H ₂ O | VISCOSITY [mPas] |
| DYNOL® 360 | Hydroxyl thio-ether-based superwetter | 100 | | | | | | ٠ | | | | | 3-13 | not soluble in water | 120 |
| SURFYNOL® 440 | Ethoxylated acetylenic diol | 100 | | | | | • | | | | | | 3-12 | 33 | <200 |
| SURFYNOL® AD 01 | Hydrated acetylenic diol | 100 | | | | | | ٠ | | | | | 3-13 | not soluble in water | 2800 |
| SURFYNOL® PSA 336 | Acetylenic diol blend with Dioctylsulfosuccinat | 100 | | • | | | • | • | | | | - | 5-9 | 32 | <50 |
| TEGO [®] SQS 25 | Sorbitan sesquioctanoate | 100 | | | | | • | | | | | | 4-12 | not soluble in water | 4000-5000 |

| | | | | | POLARI | тү | | | MOLEC | ULAR WE | iGHT [g/m | ol] | | SURFACE TENSION [mN/m] MEASURED BY PENDANT DROP METHOD AT 300 s, RT | |
|------|-------------------------------|---------------------------------------|----------------------|---------|--------|----|---|-----|-------|---------|-----------|-------|----------|--|------------------|
| | PRODUCT | COMPOSITION | ACTIVE MATTER [%] | SOLVENT | HIGH | | - | LOW | | 500 | 1000 | 10000 | pH RANGE | 0.1 % IN H₂O | VISCOSITY [mPas] |
| | REWOMINOX® L 408 | Lauryl dimethyl amine oxide | 30 | water | | • | | | | • | | | 1-14 | 29 | 400 |
| FOAM | REWOPOL [®] SB L 203 | Disodium Lauramido-MEA-sulfosuccinate | 40 | water | • | • | | | | • | | | 6-8 | 32 | <50 |
| НОН | SURFYNOL® 465 | Ethoxylated acetylenic diol | 100 | | | | • | | | • | | | 3-12 | 40 | <200 |
| | TEGO [®] BETAIN F 50 | Coco amido propyl betaine | 50 | water | | • | | | | • | | | 4-10 | 29 | 100 |

| | | - |
|---------------|-----|---|
| | | - |
| | | |
| | | - |
| | | - |
| | | - |
| | | - |
| | 1 1 | 0 |
| LIFE TIME [s] | | |

DEFOAMERS

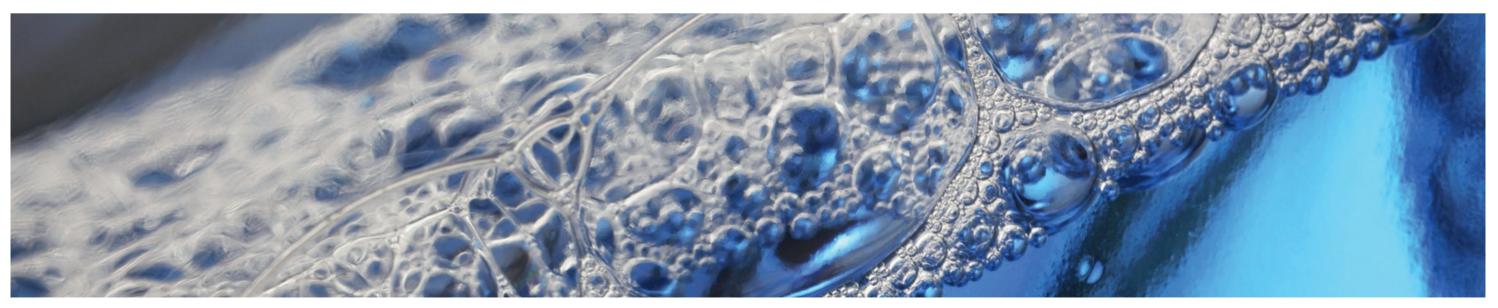
Our TEGO[®] Antifoam and SURFYNOL[®] defoamer product ranges include concentrates, emulsion concentrates and ready to use emulsions. Depending on the product, they can either be added as an internal antifoam – where it is incorporated into the textile auxiliary to prevent foam formation, or added as an external antifoam, where it is added to destroy the foam as it occurs. Our defoamers are based on organo-modified siloxanes, or on organic Gemini structures. Our organic and silicone antifoams provide high stability and high efficiency during various textile application processes. In addition, we also offer silica and silicone oil-free defoamers.

EMULSIFIERS

Our complete range of TOMADOL® Ethoxylated Alcohol surfactants are made from linear synthetic alcohols and are named to indicate the structure of the surfactant.

| Defoamers | | | | | | | | |
|---------------------------------|---------------------------|-------------------------|--------------------------------|--|--|--|---------------------------------------|--|
| PRODUCT | COMPOSITION | ACTIVE MATTER [%] | CLASSIFICATION/ APPLICATION | DYEING BATH temperature sensitive process | TEXTILE PRINTING highly dynamic process | GAR MENT FINISHING universal usable | SURFACE FINISH funtional treatment | PROCESS WATER filterabiility and handling |
| TEGO [®] Antifoam 2-89 | Organic modified siloxane | 20 | | • | • | | • | |
| TEGO [®] Antifoam 730 | Silicone oil | 33-36 | Process antifoam | | | • | | |
| TEGO [®] Antifoam 1435 | Silicone oil | 20 | | | | | | • |
| | | | | | | | | |

| | | | | I | 1 | |
|-------------------------------|--|-----------------------------|-------------------|---|------------------|------|
| PRODUCT | LINEAR ALCOHOL Carbon Chain Length | EO GROUPS Average | CLOUD PT. [°C] | SURFACE TENSION [mN/m] 1 g/l IN WATER | POUR PT. [°C] | HLB |
| TOMADOL [®] 1-9 | C ₁₁ | 9 | 74 | 31 | 18 | 13.9 |
| TOMADOL [®] 23 – 6.5 | C ₁₂₋₁₃ | 7 | 43 | 28 | 15 | 12.0 |
| TOMADOL° 25 – 7 | C ₁₂₋₁₅ | 7 | 50 | 30 | 19 | 12.3 |
| TOMADOL [®] 25 – 9 | C ₁₂₋₁₅ | 9 | 74 | 30 | 21 | 13.1 |
| TOMADOL° 45 – 7 | C ₁₄₋₁₅ | 7 | 45 | 29 | 19 | 11.6 |



silicone-based product organic-based product



REPELLENTS

Our TEGOTEX® RT 2033 and 2040 are free of fluorocarbons and flammable liquids, both with properties that improve the soil and water repellency of many different kinds of fabrics. For synthetic fibers it also gives an extraordinary handfeel to

the fabric. In addition, it shows an excellent spray rating with minimal water pick up and good durability for cleaning in household washing machines. It disperses easily in water and does not contain SVHC above the threshold limit of 0.1 %.

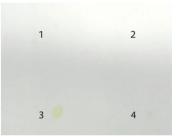


| Repellents | | | | | | | | | | |
|------------------------------|-------------------------------|-------------------------|--|----------------------|---------------------|-----------|----------------------|--------------------|----------|----|
| | | | | RECOMMEND | ED FABRICS AND DOSA | GE [g/l] | | | | |
| PRODUCT | COMPOSITION ACTIVE MATTER [%] | RECOMMENDED TEMPERATURE | COTTON | POLYESTER/ COTTON | POLYESTER | POLYAMIDE | POLYACRYL- NITRIL | WASHING DURABILITY | HANDFEEL | |
| TEGOTEX [®] RT 2033 | | 33 | drving: 105 °C /2 min | 50-150 | 70-150 | 25-100 | • | | ++ | ++ |
| TEGOTEX [®] RT 2040 | Polyamide Modified Siloxane | 40 | drying: 105 °C/2 min baking: 160–180 °C/0.5–2 min | | | 50-100 | 15-75 | 25-100 | + | ++ |

+ good ++ very good







TREATED FABRIC, WIPPED OFF

SOFTENERS

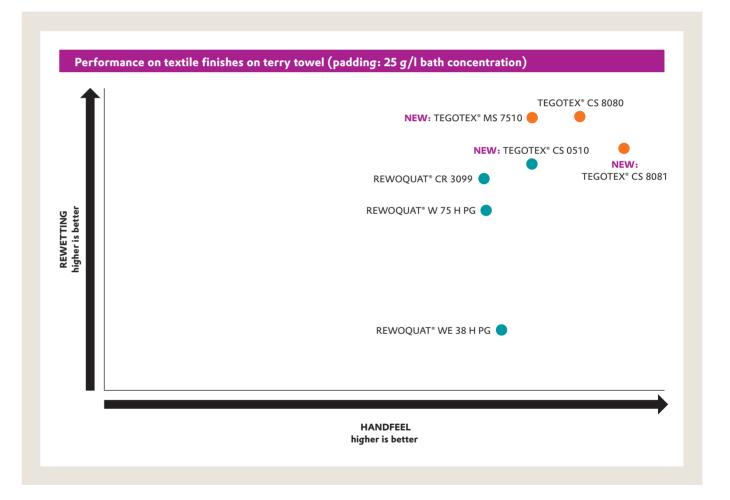
All fabrics, whether natural or synthetic-based, need to maintain a certain finish such as, soft to handle, smoothness or bulkiness, as well as retaining hydrophilicity. This applies to terry towels, knitted and woven fabrics as well as nonwoven fabrics. Our extensive product portfolio comprises softeners based on organic modified siloxanes and different oleo-based molecules, like ester quats. They come as concentrated, easy to handle liquids or pastes to provide the high-quality base ingredients needed for your softener formulations.



| Softeners | | | | | | | | | | |
|---------------------------------|--|-------------------|---------|---------------|------------------|---------------|-----------|----------|----------------|--------|
| PRODUCT | COMPOSITION | ACTIVE MATTER [%] | SOLVENT | IONIC TYPE | PHYSICAL FORM | DNIMOTTER-NON | REWETTING | HANDFEEL | MAN-MADE FIBER | COTTON |
| TEGOTEX [®] CS 8080* | Quaternary organo modified siloxane | 80 | DPG | cationic | liquid | ++ | ++ | ++ | | x |
| TEGOTEX® CS 8081* | Quaternary organo modified siloxane | 80 | DPG | cationic | liquid | ++ | + | ++ | | x |
| TEGOTEX® MS 7510® | Polyether siloxane | 100 | | nonionic | liquid | ++ | ++ | + | x | x |
| TEGOTEX® CS 0510 | TEA-Esterquat, vegetabile | 100 | | cationic | liquid | + | ++ | + | | x |
| REWOQUAT [®] WE 38 DPG | TEA-Esterquat, vegetabile | 85 | DPG | cationic | paste | + | 0 | + | | x |
| REWOQUAT [®] CR 3099 | MDIPA-Esterquat, vegetabile | 100 | | cationic | liquid | + | + | + | | x |
| REWOQUAT [®] W 75 H PG | lmidazoline quat, methosulfate | 75 | PG | cationic | solid | + | + | + | x | x |

O acceptable + good ++ very good

 * does not contain SVHC above the threshold limit of 0.1 %.



Our products have a unique chemical composition that
provides a wide variety of properties to enhance fabrics,
like outstanding handfeel or rewetting. This diagram compares
the improvement of handfeel and rewetting properties through
our different products, where the horizontal axis shows thehandfeel and the vertical axis shows the rewetting. For both,
the higher value shows the better performance. Based on the
color of the dots, the chemical composition can be identified.Products were applied by padding with a concentration of
25 g/l on a terry towel.25 g/l on a terry towel.

DENIM PROTECTION

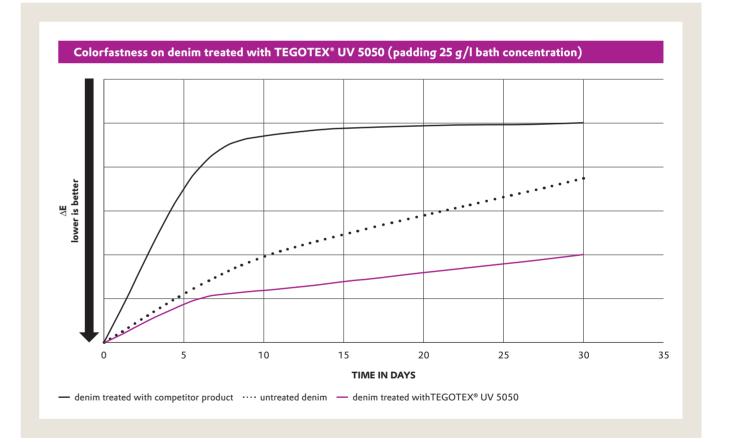
Denim products require excellent non-yellowing and antifading characteristics, while also providing the pleasant handfeel that the the shoppers demand. Our TEGOTEX[®] UV 5050 provides outstanding skin protection in low concentration and is specially designed for light and bright-colored fabrics.

Denim protecton

| PRODUCT | COMPOSITION | ACTIVE MATTER [%] | SOLVENT | IONIC TYPE | PHYSICAL FORM |
|---------------------------------|---------------------------------------|-------------------------|---------|------------|------------------|
| TEGOTEX [®] UV 5050 | Organic modified polydimethylsiloxane | 50 | DPG | cationic | liquid |
| REWOQUAT [®] WE 15 | TEA-Esterquat, vegetabile | 85 | DPG | cationic | liquid |
| REWOQUAT [®] W 75 H PG | Imidazoline quat, methosulfate | 75 | PG | cationic | paste |



| Formulation for denim protection | | | | | |
|----------------------------------|------------|--|--|--|--|
| | DOSAGE [%] | | | | |
| TEGOTEX° UV 5050 | 1.8 | | | | |
| REWOQUAT [®] WE 15 | 1.5 | | | | |
| REWOQUAT° W 75 H PG | 13.3 | | | | |
| Acetic acid | 0.2 | | | | |
| Water | 83.2 | | | | |
| | | | | | |



The chart above shows the delta E value of denim, which was exposed to UV light for longer (seen on the x-axis). The intensity of the UV light represents the intensity of UV light found at the Mediterranean Sea. The denim was treated

PROCESSING

- Melt REWOQUAT[®] W 75 H PG at approx. 60 °C,
- add REWOQUAT° W 15 and TEGOTEX° UV 5050.
- Heat up water to approx. 65 °C and add slowly to premixture.
- Keep stirring until it reaches room temperature.

with a formulation which included a product which contains oxybenzone or TEGOTEX[®] UV 5050 (formulation shown above) for color protection compared to the same formulation also containing TEGOTEX[®] UV 5050.

ODOR ABSORBER

Odor Absorbency can help to improve the overall freshness and smell of textiles and leathers which can deteriorate during the production, storage or long transport.

TEGO Sorb[®] permanently removes odor causing substances by chemically binding them together and is based on:

• Amines (nicotine in cigarette smoke),

Odor Absorba

- Thio compounds (allicin in garlic and onions) and
- Acids (isovaleric acid in human sweat, butyric acid)

| Formulation Guideline | |
|-----------------------------|----|
| | % |
| Water | 89 |
| Methylglycine diacetic acid | 1 |
| TEGO Sorb [®] A 30 | 10 |

Blend ingredients in given order while stirring. Recommended dosage: 0,2 g TEGO Sorb $^{\circ}$ A 30/g fabric.

| | | ACTIVE | | | PHYSICAL |
|-----------------|--|------------|---------|------------|----------|
| PRODUCT | COMPOSITION | MATTER [%] | SOLVENT | IONIC TYPE | FORM |
| TEGO Sorb® A 30 | Zinc ricinoleate with special solubilizers | 30 | water | nonionic | liquid |



LEATHER TREATMENT

Leather needs to be treated to improve the handfeel and to increase a garment's lifetime. We offer specialty additives to help improve the properties of leather products, e.g. shoes and

| Processing agents | | | | | | |
|----------------------------------|---|-------------------------|---------------------------|---------------|------------------|---------------------------------------|
| PRODUCT | COMPOSITION | ACTIVE MATTER [%] | SOLVENT | IONIC TYPE | PHYSICAL FORM | FUNCTIONALITY |
| TEGOPREN® 5863 | Polyether siloxane | 100 | | nonionic | liquid | oil and water spreading agent |
| TEGOPREN [®] 6814 | Alkyl modified siloxane | 100 | | nonionic | liquid | oil-spreading agent |
| TEGOPREN® 7008 | Alkyl and polyether modified siloxane | 100 | | nonionic | liquid | oil-spreading agent and emulsifier |
| TEGOTEX® RT 1010 | Carboxyfunctional siloxane | 100 | | nonionic | iquid | water repellent for shoe leather |
| REWOPOL [®] SB DO 75 PG | Sodium diisooctyl sulfosuccinate | 75 | Propylene glycol/water | anionic | liquid | wetting agent |
| REWOPOL [®] SB L 203 | Disodium Lauramido MEA-Sulfosuccinate | 40 | water | anionic | liquid | surfactant |
| REWOQUAT® W 90 DPG | Imidazoline quat, methosulfate | 90 | Dipropyl- englycol | cationic | paste | emulsifier |
| TEGO [®] Antifoam 2290 | Mineral oil-based antifoam | 100 | | nonionic | liquid | defoamer |
| TEGO Sorb® A30 | Zinc di-ricinoleate with special solubilizers | 30 | water | nonionic | liquid | malodour absorber |

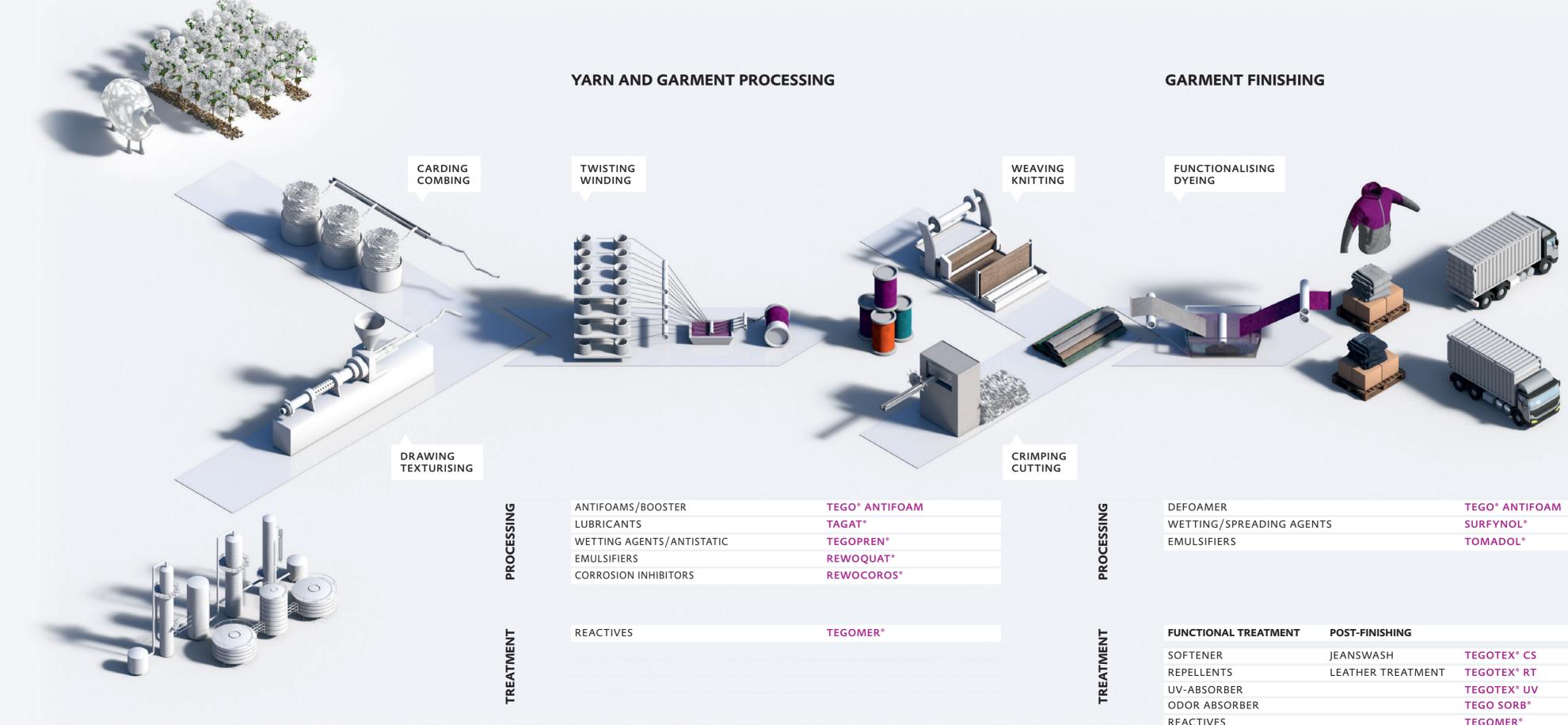


luggage. Our TEGOPREN[®] series provides excellent wetting and spreading for water and oil-based sytems. Defoamers, emulsifiers and malodor absorbers complete our portfolio.

ESPECIALLY ON SHOE LEATHER

TEGOTEX® RT 1010 offers a permanent hydrophobization of the treated leather combined with maintaining the perfectly soft handfeel.

TEXTILE MANUFACTURING



| FUNCTIONAL TREATMENT | POST-FINISHING | |
|----------------------|-------------------|-------------------------|
| 00FTENED | | |
| SOFTENER | JEANSWASH | TEGOTEX [®] CS |
| REPELLENTS | LEATHER TREATMENT | TEGOTEX [®] RT |
| UV-ABSORBER | | TEGOTEX [®] UV |
| ODOR ABSORBER | | TEGO SORB® |
| REACTIVES | | TEGOMER® |

Textile Manufacturing

Starting from either natural cotton and wool, or from synthetic manmade fibers, efficient textile manufacturing requires cost reductions through shorter product cycles and innovations in garment processing. Evonik's diverse additives portfolio helps to improve the performance of textile auxiliaries' formulations while delivering the continuous innovation the industry demands.

YARN AND GARMENT PROCESSING

For yarn production stable emulsions are essential. Our processing additives have different functions like TEGOPREN[®] wetting agents and TEGO[®] Antifoam defoamers.

High speed processes demand protection for the fiber itself as well as protection for the machines. Our protection additives like TEGOPREN[®] antistatic agents, or REWOCOROS[®] corrosion inhibitors offer a wide range of properties to enhance the effects of the formulation.

GARMENT FINISHING

All fibers, whether natural or synthetic-based need to obtain a certain finish such as soft handle, smoothness or bulkiness, as well as hydrophilicity. This applies to terry towels, knitted and woven fabric as well as nonwovens. In the final step of the textile production process the garment is treated for the desired end use.

Different treatments containing TEGOTEX® products help to give better results, like softer handfeel, in-

creased hydrophilicity and water repellency and stronger UV protection.

Evonik also offers various processing additives which support the treatment processes when it comes to foam control or wetting and emulsifying. Here our SURFYNOL[®] products offer an outstanding wetting behavior and our TOMADOL[®] products are excellent emulsifiers in garment finishing emulsions.

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