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TEXCARE SRN 260 SG TERRA

Technical Data Sheet

Publisher
Rothausstrasse 61
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Switzerland

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TEXCARE SRN 260 SG TERRA

Nonionic Soil Release Polyester for household and industrial products

Chemical name	Bio poly ethyleneglycol propyleneglycol oligo ester

Product properties [1]

Appearance (20°C)	Clear to lightly turbid liquid, light yellow

Chemical and physical data

Active substance	Approx. 60 %
pH (20°C, 50 g/L aq.)	Approx. 4.5
Viscosity	Approx. 1500 mPa·s
Renewable Carbon Index (RCI)	75%

Profile

TexCare SRN 260 SG Terra is a nonionic soil release polyester which was developed especially for application in liquid detergents and cleaners. Due to its nonionic character, TexCare SRN 260 SG Terra exhibits a broad tolerance to the most common surfactant systems.

[1] These characteristics are for guidance only and not to be taken as product specifications. The tolerances are given in the product specification sheet. For further product properties, specifications, safety, and ecological data, please refer to the MSDS.

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Soil Release Effect

Fabrics made from polyester and polyester/cotton can be difficult to clean when they are soiled with oily or fatty stains. Such stains adhere strongly to the hydrophobic synthetic fibres, which are then only poorly wetted by the washing liquor.

If these fabrics are washed with a detergent containing a soil release polymer from the TexCare series, e.g. TexCare SRN 260 SG Terra, the soil release polyester is adsorbed onto the hydrophobic fibres and forms a hydrophilic film. This prevents the soil from adhering directly to the fibres. Furthermore, the affinity of hydrophobic soils for the hydrophilic film is reduced significantly compared to the untreated fibres. This makes it much easier to remove oily stains from the fabric during subsequent washing.

The soil release effect was tested on polyester using dirty motor oil as a model soil.

The polyester swatches were pre-washed with two different mild and eco-friendly laundry liquids (Formulation 1 + Formulation 2) containing either no soil release polymer or 0.4% active TexCare SRN 260 SG Terra.

Formulation 1

Genapol LRO Paste *(SLES 2 EO)*	*12% active*
Genapol LA 070 *(Laureth-7)*	*3% active*
GlucoPure Sense *(Sunfloweroyl Methylglucamide)*	*3% active*
Soap	*2% active*
TexCare SRN 260 SG Terra	*0.4 % active*

NaOH was used to adjust the pH to 7.5.
With 2% citrate, the final viscosity of the formulation was 700 mPas.

Formulation 2

Genapol LRO Paste *(SLES 2 EO)*	*6% active*
Genapol LA 070 *(Laureth-7)*	*12% active*
Soap	*2% active*
TexCare SRN 260 SG Terra	*0.4 % active*

NaOH was used to adjust the pH to 7.6.
With 2% citrate, the final viscosity of the formulation was 420 mPas.

The swatches were stained with dirty motor oil, dried for 2 hours and washed again without polymer or TexCare SRN 260 SG Terra. The results of a colorimetric evaluation and the appearance of the swatches are shown in Fig. 1.

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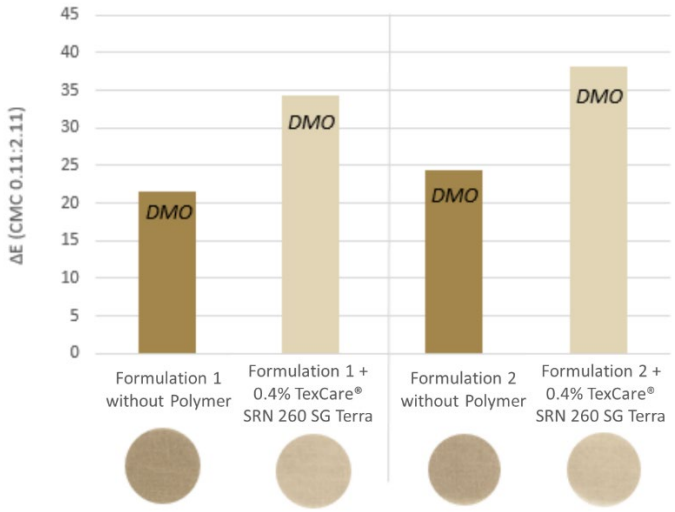

Fig. 1: Improvement of soil removal using TexCare SRN 260 SG Terra on polyester. Frontloading washing machine, 40°C, 4.3 g/L liquid detergent

Primary Detergancy

A further benefit of TexCare SRN 260 SG Life is the improvement of primary detergency on oily and greasy soils. Even without a first prewash of the fabric to give it a soil release finish, soil is removed better from polyester and polyester/cotton. Fig. 2 shows the results of washing soiled polycotton swatches with a variety of soils at 40°C with a standard liquid detergent containing 1% active TexCare SRN 260 SG Terra.

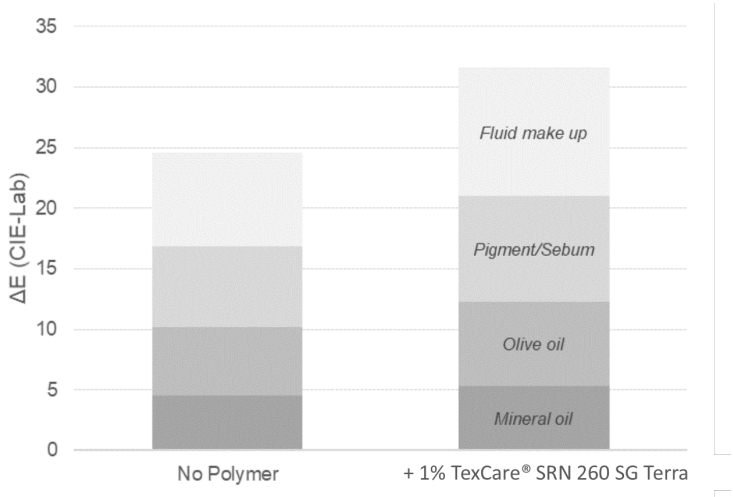

Fig. 2: Improvement of primary detergency using TexCare SRN 260 SG Terra on polycotton. Frontloading washing machine, 40°C cotton cycle, 4.3 g/L liquid detergent.

Anti-Redeposition

Lime soap and various soils present in the washing liquor need to be dispersed in order to avoid redeposition onto the fabrics present. A detergent which poorly fulfills this requirement will lead to greying of the washed garments. Due to its amphiphilic structure, TexCare SRN 260 SG Terra can effectively aid in the dispersion of this soil and prevents redeposition through repelling soil from the polyester fabric surface. Fig. 3 shows images of polycotton swatches washed with a 5% carbon black in olive oil mixture dosed at 0.08 g/L.

As Fig. 3 shows, the inclusion of small amounts of TexCare SRN 260 SG Terra can lead to large improvements in anti-redeposition performance.

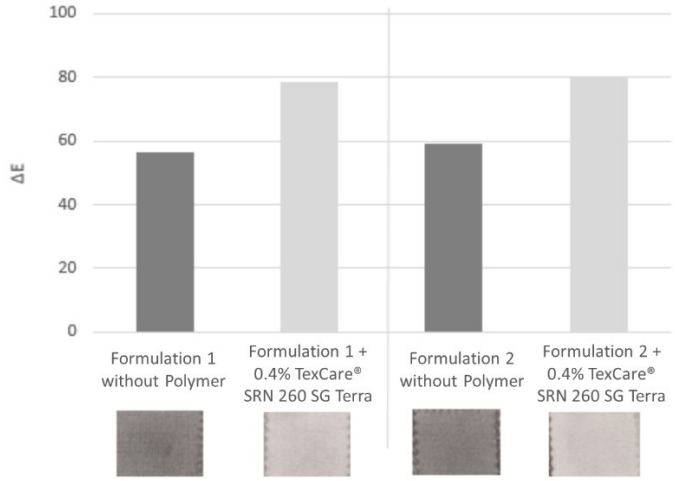

Fig. 3: Improvement of anti-redeposition of a liquid detergent through inclusion of 0.4% a.m. TexCare SRN 260 SG Terra on polycotton. Tergotometer, 25°C for 30 min, 2 g/L liquid detergent, 0.08 g/L olive oil-carbon black soil.

Hydrophilization

Wear comfort of clothes is a very important topic for consumers. Compared to hydrophilic cotton fabrics, vapour cannot pass through hydrophobic standard polyester fabrics, which leads to an unpleasant wear comfort. By deposition of TexCare SRN 260 SG Terra, water absorption of the dried fabric increases strongly.

Recommended Applications

TexCare SRN 260 SG Terra can be used in all kinds of liquid detergent formulations, e.g. heavy duty-, color and fine fabric detergents. In particular, TexCare SRN 260 SG Terra shows improved stability against hydrolysis at higher pH values than other TexCare grades.

TexCare SRN 260 SG Terra can also be formulated into fabric softeners together with cationic surfactants. In addition, TexCare SRN 260 SG Terra may be applied in liquid hard surface cleaners.

Formulation advice

TexCare SRN 260 SG Terra is compatible with most common surfactant systems. Due to its partially hydrophobic nature, slight turbidities might occur when adding TexCare SRN 260 SG Terra to a formulation. In this case, it might help to reduce the soap content of the formulation, add additional solvent (e.g. propylene glycol) or switch to the more hydrophilic TexCare SRN 170 SG Terra.

In some cases, most notably when TexCare SRN 260 SG Terra has become turbid itself, turbidity may remain upon formulation. Typically this turbidity can be removed by brief heating and stirring of the formulation at around 40 to 50°C. Alternatively TexCare SRN 260 SG Terra can be pre-blended at around 40 to 50°C with a nonionic surfactant, such as Genapol LA 070, before preparing the final detergent formulation.

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Storage and Shelf Life

TexCare SRN 260 SG Terra can be stored for at least 2 years in original sealed containers at room temperature under the recommended conditions.

The clear solution can become slightly turbid or form a slight precipitation but this is typical for a water-soluble polyester and does not affect the efficiency of the product. At lower temperatures the solution becomes slightly turbid or crystallizes but this is reversible upon warming. The product should be homogenized before use.

Feedstock Provenance

TexCare SRN 260 SG Terra is derived from plant based polyalkylethylene glycol. The renewable carbon index of TexCare SRN 260 SG Terra is approximately 75%.

Safety

Further information on handling, storage and dispatch is given in the material safety data sheet.