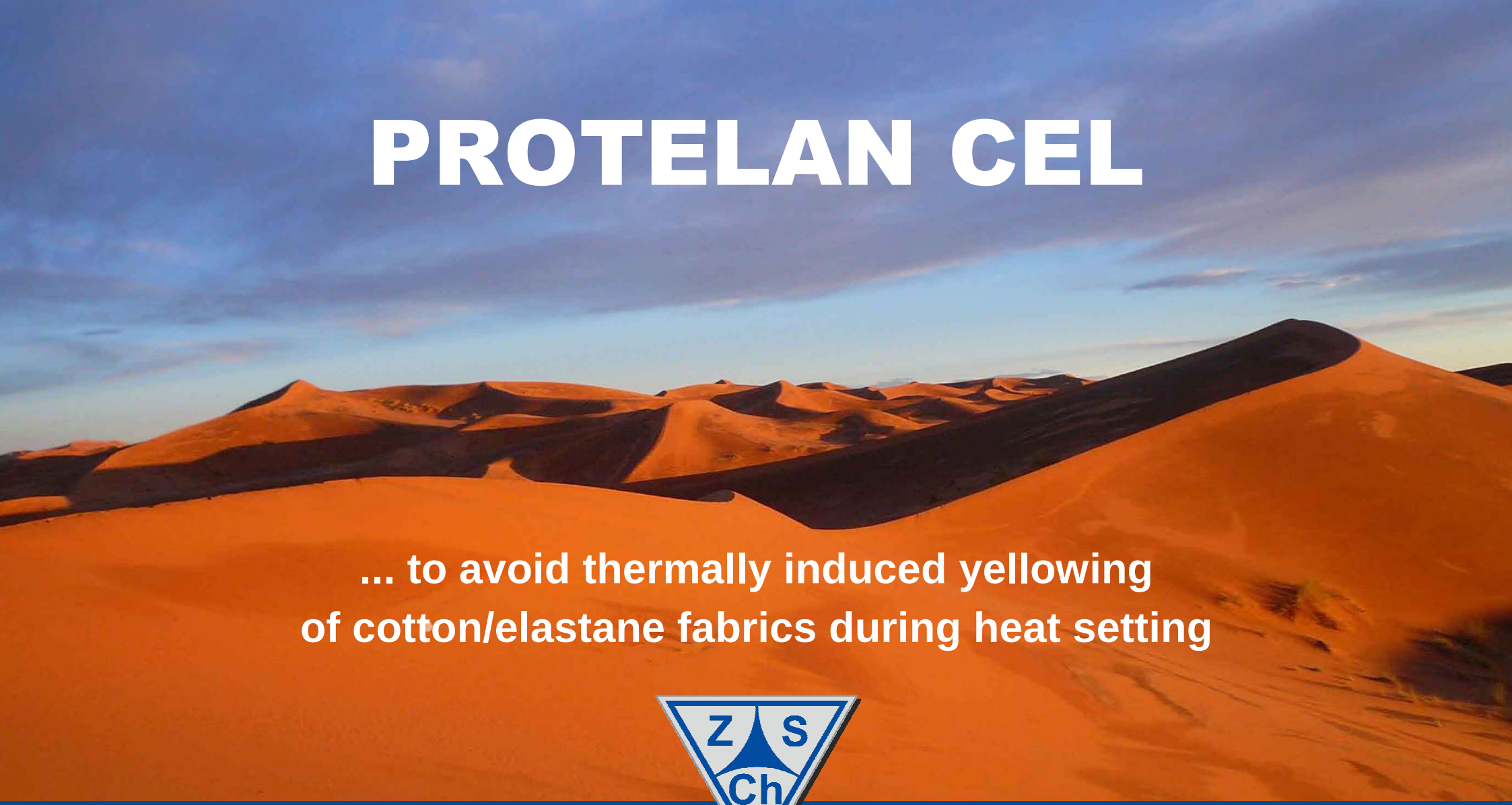

PROTELAN CEL

... to avoid thermally induced yellowing of cotton/elastane fabrics during heat setting

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PROTELAN CEL

Special antioxidant for use in heat setting of cotton/elastane fabrics

Cotton/elastane fabrics often show strong yellowing after hot treatment.

Preheat-setting before dyeing is necessary to reduce the edge-curling propensity of knitted goods and to achieve a dimensionally stable fabric.

Yellowing of CO/EL during pre heat-setting results in:

- lower degree of whiteness after heat setting
- lower degree of whiteness after bleaching
- lower brilliance of shade
- danger of stretching power decrease of elastane

PROTELAN CEL

relieves the manufacturing of an optimal white and brilliant shades.

The pad application of an antioxidant before heat-setting yields big advantages for the customer because

PROTELAN CEL has multiple effects:

- emulsifying of oily deposits, dust and spots
- no burn-in of preparations
- reducing of yellowing of cotton/elastane during heat setting
- optimal protection of the elastane fiber during heat setting

impregnation of greige fabric with PROTELAN CEL before setting

PROTELAN CEL penetrates the fabric very quickly and evenly.

The treated cotton/elastane fabrics show a lower tendency to yellowing after heat setting than without using of this antioxidant.

We compared different antioxidants used in preheat setting of CO/EL. The products were applied by padding before preheat setting.

Depending on the kind of antioxidants, a higher or a lower degree of whiteness after scouring and bleaching results.

PROTELAN CEL achieved the best protection against yellowing during heat setting of the sample cotton/elastane knitwear.

Fabric: 92/8 cotton/elastane knitwear	**without**	20 g/l **PROTELAN AY**	20 g/l **competitor SPX**	2 g/l **competitor VW** (powder)	20 g/l **competitor EFR**	20 g/l **PROTELAN CEL**
degree of whiteness of greige fabric	7.1 CIE	7.1 CIE	7.1 CIE	7.1 CIE	7.1 CIE	7.1 CIE
padding of antioxidant heat set for 45 sec at 195℃ **degree of whiteness after heat setting**	- 18.8 CIE	3.8 CIE	- 4.8 CIE	- 9.2 CIE	8.3 CIE	11.4 CIE
scouring 20 min at 90℃ **degree of whiteness after scouring**	19.3 CIE	25.3 CIE	22.6 CIE	19.9 CIE	28.4 CIE	29.7 CIE
bleaching 45 min at 98℃ **degree of whiteness after bleaching**	67.8 CIE	72.0 CIE	71.4 CIE	69.1 CIE	73.9 CIE	75.0 CIE

The same comparison using an other knitwear which shows very strong yellowing during heat-set if no antioxidant is used.

PROTELAN CEL protected this fabric in an optimal way so that a significantly higher degree of whiteness after scouring resulted.

SAMPLES - only scoured before dyeing -

Fabric: 90/10 cotton/elastane Knitwear very dark shade	**without**	20 g/l **PROTELAN AY**	20 g/l **competitor SPX**	2 g/l **competitor VW** (powder)	20 g/l **competitor EFR**	20 g/l **PROTELAN CEL**
degree of whiteness of greige fabric	- 13.9 CIE	- 13.9 CIE	- 13.9 CIE	- 13.9 CIE	- 13.9 CIE	- 13.9 CIE
padding of antioxidant heat set for45 sec at 195℃ **degree of whiteness after heat setting**	- 34.4 CIE	- 13.8 CIE	- 18.1 CIE	- 28.7 CIE	- 8.6 CIE	- 7.8 CIE
scouring 20 min at 90℃ **degree of whiteness after scouring**	11.7 CIE	20.8 CIE	16.2 CIE	13.0 CIE	22.3 CIE	23.6 CIE

PROTELAN CEL

Our new special antioxidant for use in heat setting of cotton/elastane fabrics

ADVANTAGES for our customers:

- ✓ optimal degree of whiteness
- ✓ brilliant shades
- ✓ no burn-in of preparations
- ✓ optimal protection of elastane fiber during heat setting
- ✓ better reproducibility