



PROTELAN NOX

... our new yellowing protector
to prevent yellowing of elastic textiles
caused by nitrogen oxides



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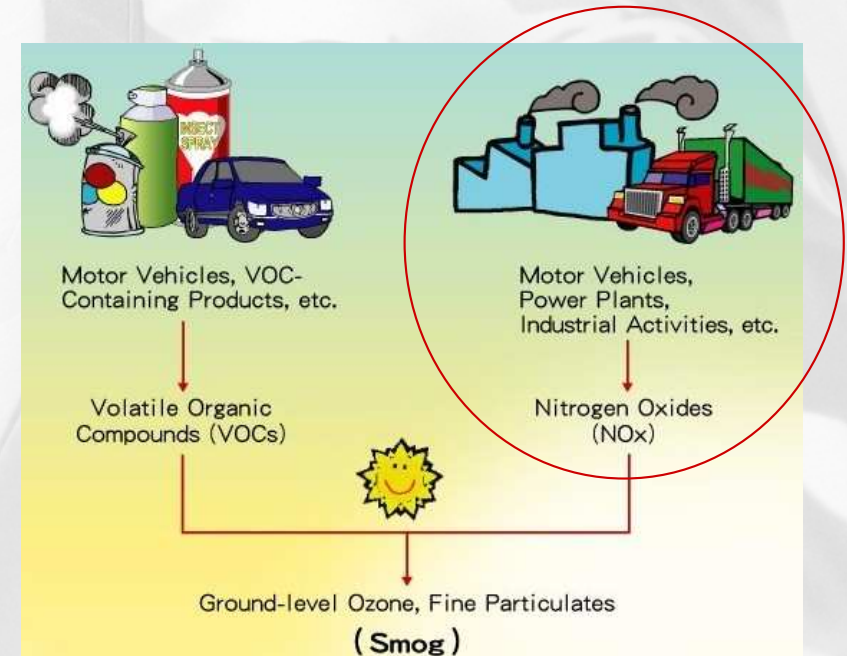
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PROTELAN NOX

Nitrogen oxides are present:

- during thermo-setting
 - oil- and gas heated stenter frames
- in warehouses during storage
 - exhaust gases of forklifts
- environmental pollution
 - industrial plants, motor vehicles etc.



The intensity of NOx-yellowing is depending on:

- 1) Type of substrate, each kind of elastic fabric shows an individual yellowing propensity



- 2) Fibre additives that are used during the manufacturing of synthetic fibres as spinning oils, texturizing oils, preparations, antistatic agents, UV-absorber, delustre agents, elastane softeners.



* Pre-scouring with 2 g/l TISSOCYL RC 9 at 40°C

- 3) Optical brighteners (fastness properties must be considered)

PROTELAN NOX

Special antioxidant to prevent yellowing of elastic textiles caused by nitrogen oxides

Guide recipe and recommendation for application:

25 - 60 g/l PROTELAN NOX, without pH adjustment
drying / heat setting at 110°C - 195°C (depending on the fabric quality)

PROTELAN NOX is applied by padding only.

Best results are obtained when the substrate is impregnated with PROTELAN NOX by a separate step subsequently to the other textile treatment processes. The quantities to be applied depend on the specific yellowing tendency of the goods to be treated.

A combination of anti-yellowing and softening treatments is possible. The combined application with other ZSM agents for preventing storage yellowing (e.g. PROTELAN LG/LGA/LGS) is limited due to the resulting poor liquor stability. However, should this be taken into consideration, it is recommended to apply the specific storage anti-yellowing agent by exhaustion immediately before impregnating with PROTELAN NOX.

The optimum amount to be applied depends on several factors, for example desired protection level against yellowing, NO_x-gas contamination level of the textile goods, the storage conditions and should be checked before.

Combination of anti-yellowing treatments (storage/phenolic + NOx yellowing)

Process and recipes:

1) storage yellowing protection

4 % PROTELAN LGA*

application by exhaustion directly after optical brightening, fresh bath, without pH-adjustment, LR 1:8, 20 min 70°C, centrifugate

*optional: 4 % PROTELAN LGS, pH 3-4 with citric acid

2) NOx-yellowing protection

60 g/l PROTELAN NOX

application by padding, wet in wet, pick up 80%, dryeing 110°C

**Test method:

according to DIN ISO 105-G01:1993 – Colour fastness to nitrogen oxides (one test cycle only with 3 times higher NOx-concentration, 60 min treatment time)

Article	Phenol test M&S C20B	pH-value fabric	Fabric, opt. brightened	Fabric after NOx- treatment**	
				without PROTELAN NOX	60 g/l PROTELAN NOX
80/20 PA/EL	fabric finished 4- <u>5</u>	Morapex- extraction 4,7		 grade 1	 grade 4
60/40 PA 6/EL	4- <u>5</u>	4,7		 grade 1	 grade 3 - 4
PA/EL tape	4- <u>5</u>	4,7		 grade 3	 grade 4
82/18 PA/EL	4- <u>5</u>	4,7		 grade 2	 grade 4-5

PROTELAN NOX

Our new antioxidant to prevent yellowing of elastic textiles caused by nitrogen oxides

- ✓ prevents yellowing of elastic textiles when they are exposed to the oxides of nitrogen in the ambient atmosphere
- ✓ increases the resistance of the colour of elastics articles to combustion gases, in particular air pollutants
- ✓ enables quality production of pale shades and achieving of maximum degrees of whiteness for optically brightened articles
- ✓ practical experience shows no influence on the light fastness and shade

