

AVCO-STABIQUEST HS

ORGANIC STABILIZER AND COMPLEXING AGENT FOR HOT PEROXIDE BLEACHING

AVCO-STABIQUEST HS is a synergistic blend of organic stabilizer and complexing agents. Their combination is particularly suited for the stabilization of the peroxide in hot alkaline bleaching baths for bleaching cotton, viscose and blends with polyester.

AVCO-STABIQUEST HS does not contain any silicates, therefore, stabilization can be obtained either with or without the use of silicate.

AVCO-STABIQUEST HS is free from surface active substances and is non-foaming.

SPECIFICATION:

Chemical nature	Aqueous solution containing magnezium complexes of polyhydroxy and polycarboxy organic compounds.
Appearance	Clear yellowish liquid.
Solubility	Miscible with water in any ratio.
Ionicity	Anionic.
pH (as supplied)	5 – 7
Density at 20°C	About 1.11 - 1.13 g/cm ³
Compatibility	a. Good with anionic products, alkalis and electrolytes. b. Is not compatible with cationics and strong acids.
Storage	Stable for at least 12 months.

PROPERTIES & USES:

AVCO-STABIQUEST HS is an organic stabilizer that provides a perfect peroxide stabilization, without the use of silicate. When a high alkalinity and/or elevated temperature becomes responsible for an increased decomposition rate of the hydrogen peroxide AVCO-STABIQUEST HS would slow down such process and make it happen in controlled mode.

AVCO-STABIQUEST HS serves for stabilizing alkaline peroxide bleach liquors at temperatures 95-100°C and in HT conditions. Contrary to the use of sodium silicate, there is no risk of precipitation when using AVCO-STABIQUEST HS.

This obviates the need for the time and labor consuming cleaning especially of HT and continuous bleaching ranges.

Technical - Information

AVCO-STABIQUEST HS is fortified with specific complexing agent having high complexing capacity towards iron in alkaline bleaching liquors.

Fabrics bleached with AVCO-STABIQUEST HS are highly absorbent, have very low ash content and soft handle. Fibre impurities that are difficult to remove such as calcium and magnesium pectinates, or other alkaline earth compounds originating from defoliantes or minerals naturally present in raw cotton, are removed by the complexing capacity of AVCO-STABIQUEST HS.

The use of AVCO-STABIQUEST HS counteracts the risk of pin holes caused by catalytic decomposition of peroxide by the influence of heavy-metal ions.

AVCO-STABIQUEST HS is compatible with other auxiliaries without causing any separation of the bleaching liquor.

APPLICATION:

Depending on the method applied, 15-20% AVCO-STABIQUEST HS are added, calculated on the amount of peroxide (50%) used. The quantities of alkali and peroxide depend on the kind of pretreatment, the quality of the fabric to be bleached, the process applied, as well as on the time and temperature of the treatment.

When preparing the bleaching liquor, it is recommended to add the ingredients in the sequence in which they are listed in the following recipes.

RECOMMENDED RECIPES:

Fully Continuous Processes (with de-sized fabrics)

1. Peroxide bleaching by the steaming method at temperatures up to 105°C (on a roller bed steamer)

AVCO-STABIQUEST HS	4	-	8	g/l
AVCO-BLANK HB-LF	3	-	4	g/l
Caustic soda (50%)	8	-	30	g/l
H ₂ O ₂ (50%)	25	-	50	cc/l

The dwell time in the saturated steam atmosphere is usually 15-20 minutes.

2. Peroxide bleaching by the HT steaming method

AVCO-STABIQUEST HS	6	-	10	g/l
AVCO-BLANK HB-LF	3	-	4	g/l
caustic soda (50%)	3	-	6	cc/l
H ₂ O ₂ (50%)	30	-	40	cc/l

The dwell times in the HT steamer usually vary between 60 and 90 seconds. However, a complete removal of husks can only be achieved with an appropriate alkaline pretreatment.

Semi continuous Processes

1. Peroxide bleaching by the pad roll method.

AVCO-STABIQUEST HS	5	-	8	g/l
AVCO-BLANK HB-LF	3	-	7	g/l
Caustic soda (50%)	4	-	10	cc/l
H ₂ O ₂ (50%)	20	-	30	cc/l

Technical - Information

At a temperature of 95°C in the batch box, the dwell time should be about 2 hours.

2. Open Width J-Box Bleaching

AVCO-STABIQUEST HS	6	-	10	g/l
AVCO-BLANK HB-LF	3	-	4	cc/l
Caustic soda (50%)	3	-	6	cc/l
H ₂ O ₂ (50%)	20	-	40	cc/l

Liquor pick-up - about 100%
Bleaching temperature - 100°C
Dwell time: 10-30 minutes

High liquor ratio machines

1. Bleaching in jet machines

AVCO-STABIQUEST HS	0.5	-	1.5	g/l
AVCO-PAL VIC	1	-	2	g/l
Caustic soda (50%)	2	-	3	cc/l
H ₂ O ₂ (50%)	3	-	8	cc/l

Bleach at 90-95°C for 45-60 minutes.
Add antirese agent if needed.

GENERAL INFORMATION:

The following conversion factors relate to the calculation of bleaching liquor recipes:

1 ml H ₂ O ₂ (35%) =	0.66 ml H ₂ O ₂ (50%)
1 ml H ₂ O ₂ (50%) =	1.51 ml H ₂ O ₂ (35%)
1 gr c. soda =	2.50 ml caustic soda solution 36 Be'(66.4 Tw)
	2.44 ml caustic soda solution 38 Be'(71.4 Tw)
	1.64 ml caustic soda solution 45 Be'(91.0 Tw)
	1.33 ml caustic soda solution 50 Be'(106.0 Tw)

In practical working conditions, a 50 Be' caustic soda solution is equivalent to a 50% sol.

In order to calculate the concentration of chemicals required in the replenishing liquor for a wet-on-wet impregnation bleach - presuming an almost 100% liquor turnover - the factor F must first be determined according to the following equation:

$$F = \frac{(\text{L.P.U. after impregnation})}{(\text{L.P.U. after impregnation}) - (\text{L.P.U. before impregnation})}$$

*L.P.U. – Liquor Pick Up

The concentration of the replenishing liquor (Cr) is determined by multiplying the desired concentration of the individual chemical (Ci) in the impregnating liquor by factor "F"

Technical - Information

Example:

Liquor pick-up after impregnation:	100 %
Liquor pick-up before impregnation:	60 %

$$F = \frac{100}{100 - 60} = 2.5$$

As a result, the replenishing liquor must be prepared 2.5 times stronger than the concentration in the impregnating liquor.

Cr	=	concentration of the replenishing liquor (F x Ci)
F	=	2.5
Ci	=	10 ml/l chemical (quantity assumed)
Cr	=	2.5 x 10 = 25 ml/l product

As a result of this example, the replenishing liquor must contain 25 ml/l of the chemical.