Technical – Information

AVCO-BLANK HB-LF

LOW FOAMING DETERGENT AND WETTING AGENT FOR CONTINUOUS BLEACHING

AVCO-BLANK HB-LF is designed as a low foaming compound for continuous peroxide bleaching of cotton and cotton blend fabrics.
AVCO-BLANK HB-LF is composed of nonionic surfactants having excellent detergency and wetting efficiency combined with extracting agents and defoaming additives.
The product has very good compatibility with the alkali and hydrogene-peroxide as applied in peroxide bleaching processes of cellulosic fabrics.
AVCO-BLANK HB-LF is does not contain any polyethoxylated alkyl phenols and is regarded as APEO free surfactant.
AVCO-BLANK HB-LF is composed of biodegradable ingredients with no potential for bioaccumulation, and with no evolution of toxic compounds during biodegradation.
AVCO-BLANK HB-LF is environmentally acceptable, and can regard as a "GREEN" product.

SPECIFICATIONS:

Appearance	Clear to slightly hazy, colourless liquid.
Chemical nature	Combination of non-ionic surfactants, defoamers and solubilizers.
Ionic type	Nonionic
Density (g/cc)	1.02
PH (10% sol.)	6 - 8
Solubility	Miscible with water at any ratio
Compatibility	i. Compatible with all chemicals normally encountered in peroxide bleaching. ii. Compatible with water hardness.
Storage	Freezes below 0°C, fully usable after thawing and stirring. Storage stability is at least 12 months.

PROPERTIES & USES:

1. Balanced compound of detergents and wetting agents with defoaming additives.
2. High wetting efficiency, with short wetting time.
3. Highly effective under all hot peroxide bleaching conditions. The product will ensure maximum whiteness with good absorbency.

4. AVCO-BLANK HB-LF has good emulsifying and dispersing properties, with excellent soil suspending power.
5. AVCO-BLANK HB-LF is a low foaming product, and is recommended for high speed continuous bleaching ranges.
6. Good compatibility with caustic soda and peroxide used in hot continuous processes.
7. The product is a pourable liquid, and can be metered easily to the bleaching machines as is or pre-diluted.
8. AVCO-BLANK HB-LB is recommended also for peroxide bleaching in batch type processes such as jet machines and for the cold pad batch bleaching process.

APPLICATION:

The quantities of alkali and peroxide depend on the kind of the pretreatment, the quality of the fabric to be bleached, the process applied, as well as on the time and the 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 on de-sized fabrics

1. Contiuous hot bleaching of de-sized cellulosic fabrics by the hot steamer method adjusted with a high add on applicator :

AVCO-BLANK HB-LF	3 - 6 g/kg
AVCO-STABILIZER HSF-200	4 - 8 g/kg
AVCO-POLYQUEST 1096S	1 - 2 g/kg
Caustic soda (50%)	15 - 30 cc/kg
H_2O_2 (50%)	20 - 40 cc/kg

The dwell time in the saturated steam atmosphere is usually 15-20 minutes with saturated steam at 102 – 104^{0}C.

Washing off is carried out in the continuous washer composed of 4 - 5 hot boxes and the last one a neutralizing box.

All hot rinsing boxes should heated to 95 ^{0}C with counter current of app. 100 l/min.

The final neutralizing box should be adjusted to 60 ^{0}C while adding of AVCO-CID PHS to neutralize residual alkalinity in the fabric.

Whiteness of the bleached fabrics can be improved by adding 1 - 2 g/l of POLYQUEST 1096E in the second box.(Dosage according to the counter current flow)

2. Continuous hot bleaching of de-sized cellulosic fabrics, after alkaline cracking, by the hot steamer method, adjusted with a high add-on applicator:

AVCO-BLANK HB-LF	2 - 4 g/kg
AVCO-STABILIZER HSF-200	2 - 6 g/kg
AVCO-POLYQUEST 1096E	1 - 2 g/kg
Caustic soda (50%)	10 - 20 cc/kg
H_2O_2 (50%)	10 - 30 cc/kg

The dwell time in the saturated steam atmosphere is usually 15-20 minutes with saturated steam at 102 – 104^{0}C.

Washing off is carried out in the continuous as explained above at section no. 1.

3. Cold oxidative de-sizing and bleaching of raw cotton fabrics (no persulphate).

AVCO-BIOLUZE KCB	10 - 15 g/l
AVCO-BLANK HB-LF	3 - 5 g/l
AVCO-STABILIZER HSF-200	6 - 8 g/l
AVCO-POLYQUEST 1096E	1 - 2 g/l
Caustic soda (50%)	50 - 60 cc/l
Hydrogen peroxide (50%)	50 - 70 cc/l

Pick-up: 60 - 80 %
Temp.: 20- 30°C
Dwelling time: 16-24 hours, wrapped with plastic cover and rotating.
Washing-off is carried out in a continuous washer (minimum 5 boxes):

Boxes 1-5	hot water	95°C
Box 6	warm water	60°C (neutralizing)

To improve the removal of impurities, add AVCO-POLYQUEST 1096E - to box no. 2.
To neutralize the bleached fabric, add AVCO-CID PHS to box no. 6

4. De-mineralizing process of woven fabrics (pre-desized)

AVCO-CID DM	5 - 7 g/l
AVCO-BLANK HB-LF	3 - 4 g/l

Pad 50- 70°C (P.U. 80%)

Dwell 2-6 hours

Wash off at 90 - 95°C

5. De-mineralizing process of knitted articles in continuous bleaching machine.

AVCO-CID DM	3- 5 g/l
AVCO-BLANK HB-LF	3 -4 g/l

Pad 50- 70°C (P.U. 80%)

Dwell 2-10 min. (J Box)

Wash off at 90 - 95°C

GENERAL INFORMATION:

Following are the conversion factors related to the calculation of the bleaching liquor recipes:

1 ml H_2O_2 (35%) = 0.66 ml H_2O_2 (50%)

1 ml H_2O_2 (50%) = 1.51 ml H_2O_2 (35%)

1 g of caustic soda = 2.50 ml caustic soda solution 36 °Bé (66.4 Tw)
2.44 ml caustic soda solution 38 °Bé (71.4 Tw)
1.64 ml caustic soda solution 45 °Bé (91.0 Tw)
1.33 ml caustic soda solution 50 °Bé (106.0 Tw)

In practice, a 50°Bé caustic soda solution is equivalent to a 50% solution.

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"

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.