

DYEING PROCESS FOR POLYESTER SEWING THREAD

AVCO-AUXILIARIES
FOR POLYESTER SEWING THREAD



AVCOchem[®]

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DYEING AUXILIARIES FOR POLYESTER

PRODUCT	USE	CHEMISTRY	IONICITY	DOSAGE
AVCO-POLYLEV ECO	Levelling Agent	Blend of Nonionic surfactant and anionic polyester polymer	Nonionic/Anionic	1.0 g/l – 3.0 g/l
AVCO-LEV DLX	Levelling Agent	Blend of nonionic and anionic surface active agent	Nonionic/Anionic	1.0 g/l – 3.0 g/l
AVCO-CID PHS NEW	Acid Buffer	Blend of carboxylated organic acids, buffer salt	Anionic	1.0 g/l – 2.0 g/l
AVCO-CID PES-N	Acid Buffer with complexing and dispersing properties	Blend of carboxylated organic acids, buffer salt, dispersing and complexing agent	Anionic	1.0 g/l – 2.0 g/l
AVCO-POLYQUEST 1096	Sequestering Agent	Blend of phosphonate and polycarboxylated polymer	Anionic	0.7 g/l - 1.0 g/l
AVCO-GEN DOA	Oligomer Dispersant	Compound of polymers and anionic surfactants	Anionic	0.5 g/l – 1.0 g/l
AVCO-ACCELERATOR PED NEW	Stripping and Levelling Agent	Compound of eco friendly organic esters with anionic and non-ionic emulsifiers	Anionic / nonionic	1.0 g/l – 7.0 g/l
AVCO-MIGRATOR EXCEL	Stripping and Levelling Agent	Compound of organic esters with anionic and non-ionic emulsifiers and dispersing additives	Anionic / nonionic	1.0 g/l – 7.0 g/l
AVCO-CLEAN OGM	Machine Cleaner	Combination of free APEO surfactants and ammonium quats	Cationic/Nonionic	1.0 g/l – 3.0 g/l

DYEING AUXILIARIES FOR POLYESTER

PRODUCT	USE	CHEMISTRY	IONICITY	DOSAGE
AVCO-CLEAR ARC	Acid Reduction Clearing Agent	Aqueous solution sodium formaldehyde sulfoxylate	Anionic	1.0 g/l – 4.0 g/l
AVCO-BIOCLEAR GLR	Alkaline reductive agent	Compound of eco-friendly polyhydroxy-glucoside and dispersing agents in aqueous solution	Nonionic/Anionic	2.0 g/l – 4.0 g/l
AVCO-REDUCTION THC	Alkali Reduction Clearing Agent	Thiourea dioxide	Anionic	1.0 g/l – 3.0 g/l
AVCO-SILICONE 1000	Lubricant / Winding thread at room temperature	PDMS with viscosity 1000 cps	Nonionic	1-7%
AVCO-SEW HM	Lubricant / Winding thread, melting at 80-90°C	Compound of silicone oil, wax and additives	Nonionic	1-7%
AVCO-LUBROSIL MTL	Lubricant / Winding thread, melting at 60-70°C	Compound of silicone oil, wax and additives	Nonionic	1-7%
AVCO-LUBROSIL CLR	Lubricant / Winding thread, working at room temperature	Compound of silicone oil, wax and additives	Nonionic	1-7%

LOW FOAMING LEVELLING AND DISPERSING AGENT

AVCO-POLYLEV ECO

CHEMISTRY	Blend of Nonionic surfactant and anionic polyester polymer
IONICITY	Nonionic/Anionic
DOSAGE	1 – 3 g/l

ADVANTAGES

- ✓ Low foam, very strong penetrating power.
- ✓ Excellent dispersing power at high temperature, particularly suitable for some sensitive dyes when dye specks and spots often occur.
- ✓ Excellent migration property to gain level dyeing.
- ✓ Little impact on color change, brilliant color can be produced .
- ✓ Very effective levelling power.

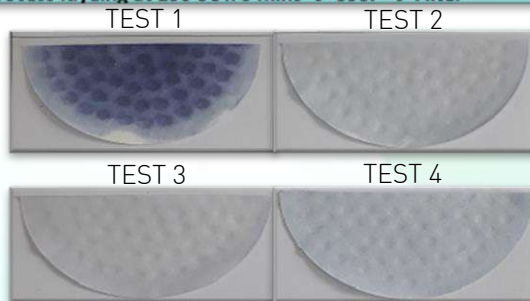
MIGRATION AND LEVELLING

Products	Concentration (g/l)			
	Test 1	Test 2	Test 3	Test 4
Polylev-ECO	Blank	2.0	3.0	
Competior's product				2.0
Cid- PHS New	0.5	0.5	0.5	0.5
pH	4.8			
Process :dyeing at 130 oC x 30 mins → Hot water → Cool drain				



DISPERSING DYESTUFF

Products	Concentration (g/l)			
	Test 1	Test 2	Test 3	Test 4
Polylev-ECO	Blank	1.0	1.5	
Competior's product				1.0
Syntopers Navy HGL 200%	0.5 %	0.5%	0.5%	0.5%
Cid- PHS New	0.5	0.5	0.5	0.5
pH	4.8			
Process :dyeing at 130 oC x 5 mins → Cool -> Filter				



OLIGOMER DIPERSANT

Products	Concentration (g/l)		
	Test 1	Test 2	Test 3
	BLANK		
AVCO-GEN DOA		2,0	
AVCO-POLYLEV-ECO			1.5
OLIGOMER STANDARD SOLUTION	10ml	10ml	10ml
PURE WATER	200ml	200ml	200ml
Process :Dyeing at 130 oC x 60 mins → Cool → Filter with Black paper			



PERFORMANCE

LOW FOAMING LEVELING AGENT

AVCO-LEV DLX

CHEMISTRY	Blend of nonionic and anionic surface active agent
IONICITY	Nonionic/Anionic
DOSAGE	1 – 3 g/l

ADVANTAGES

- ✓ Highly effective dispersing properties towards disperse dyes.
- ✓ Very good levelling properties and very suitable for beam and package dyeing process .
- ✓ Has no retarding effect, resulting in a very good color yield.
- ✓ Shorten dyeing time, even heating speed is 4° C/ min, dyeing result are very even and leveled.
- ✓ Levelness in tri-chromine or other dye combinations is excellent.
- ✓ Improve the stability of disperse dye liquors.

ACID BUFFER WITH COMPLEXING AND DISPERSING PROPERTIES

AVCO-CID PES N

CHEMISTRY	Blend of carboxylated organic acids, buffer salt, dispersing and complexing agent
IONICITY	Anionic
DOSAGE	1 - 2 g/l

ADVANTAGES

- ✓ High buffering capacity at pH range of 4-6
- ✓ Non -foaming at all .
- ✓ Highly complexing toward Iron and Copper ions
- ✓ Good complexing of Calcium and Magnesium.
- ✓ Does not complex metal ion included in the dyestuff molecules, so use of AVCO-CID PES-N eliminates shade change when dyeing .
- ✓ The complexing and dispersing properties of AVCO-CID PES-N are effective in both acid and alkaline range.

ACID BUFFER WITH COMPLEXING AND DISPERSING PROPERTIES

AVCO-CID PHS NEW

CHEMISTRY

Blend of carboxylated organic acids, buffer salt.

IONICITY

Anionic

DOSAGE

1 - 2 g/l

ADVANTAGES

- ✓ High buffering capacity at pH range of 4-6
- ✓ Non -foaming at all .
- ✓ Liquid product, can be dosed with automatic dosing machines.
- ✓ Non-flammable and non-toxic, with very low irritating effect due to the mild acidity.
- ✓ Non-corrosive to fibers sensitive to mineral acids.
- ✓ Used for neutralization of bleaching and finishing baths.
- ✓ Used in dyeing process, when dyeing polyester, polyamide, wool, to maintain acidic pH at the range of 4.0 -6.0

PERFORMANCE

AVCO-CID PHS NEW							
CONCENTRATION (G/L)	0.0	0.2	0.5	0.7	1.0	1.5	2.0
pH	6.8	4.9	4.9	4.9	4.8	4.7	4.63

SEQUESTERING AGENT

AVCO-POLYQUEST 1096

CHEMISTRY

Blend of phosphonate and polycarboxylated polymer

IONICITY

Anionic

DOSAGE

1 - 2 g/l

Advantages

- ✓ Good metal ion chelating power and water softening function.
- ✓ To protect the dyes in hard water.
- ✓ To prevent the dyes spots and specks defect caused by condensation of dyes.
- ✓ Good solubility and dispersing power in insoluble calcium, can break down and remove the calcium sediment.
- ✓ Resistant to electrolyte and oxidant.

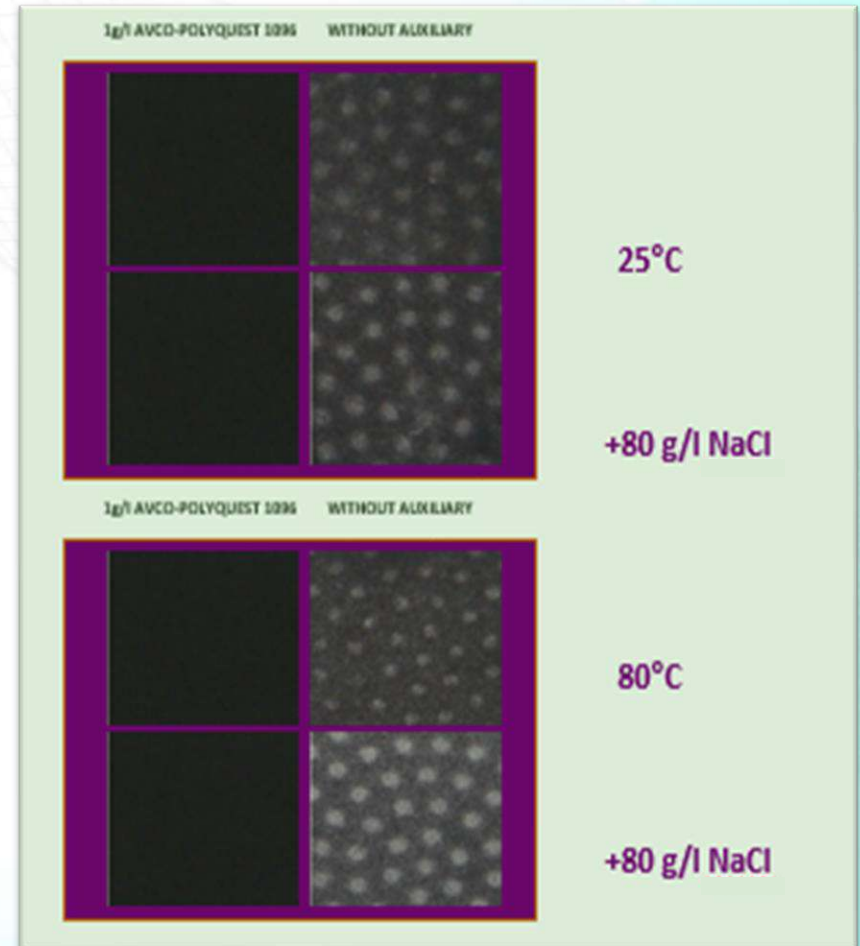
Characteristic

- ✓ Blend of phosphonate and polycarboxylated polymers.
- ✓ Eco-friendly .

FILTRATION TEST

The solution contains 0.5g/l CaCo₃-pH 11


The filtration is carried out at 25°C or 80°C, with salt (80g/l) or without



SEQUESTERING AGENT

AVCO-POLYQUEST 1096

ADVANTAGES

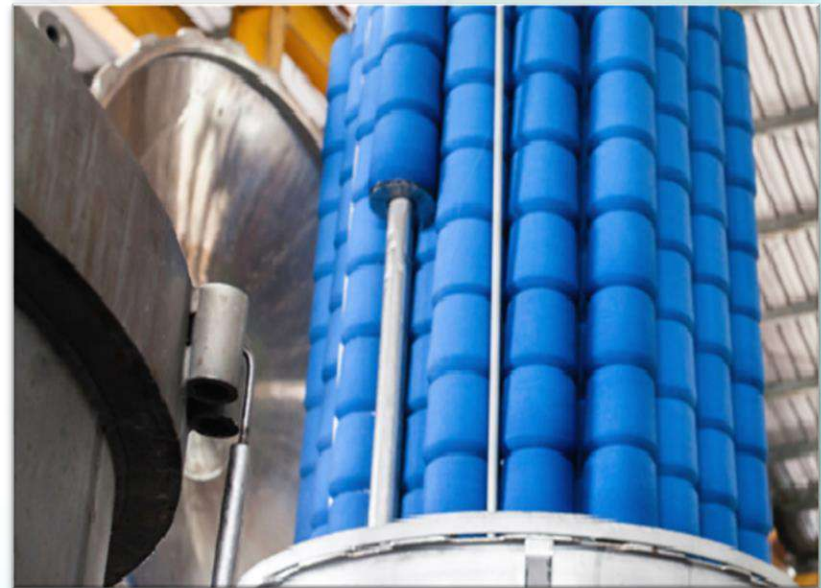


Demonstration of the efficiency of AVCO-POLYQUEST 1096 as a scale dispersing agent and as anti-precipitating agent (178 mg/l CaCO₃)

- a) Beginning of the trial
- b) After 2 minutes
- c) After one hour

Recommended Recipe for dyeing

Products	Dosage (g/l)
AVCO-Polylev Eco	1.0-2.0
AVCO-Polyquest 1096 (or without)	0.7-1.0
AVCO-Gen DOA	0.5-1.0
AVCO-Cid PHS New	0.5-1.0
Adjust pH	4.5-5.0



OLIGOMER DISPERSANT

AVCO-GEN DOA

CHEMISTRY

Compound of polymer and anionic surfactant.

IONICITY

Anionic

DOSAGE

1 - 2 g/l

ADVANTAGES

- ✓ Prevention of re-deposition on fabric and also the machinery
- ✓ Dispersing action/ clearing action
- ✓ Non-foaming No influence on dyed shades
- ✓ Stability to alkali

Recommended Recipe for dyeing

Products	Dosage (g/l)
AVCO-Polylev Eco	1.0-2.0
AVCO-Polvauest 1096 (or without)	0.7-1.0
AVCO-Gen DOA	0.5-1.0
AVCO-Cid PHS New	0.5-1.0
Adjust pH	4.5-5.0

Oligomer cheeses →

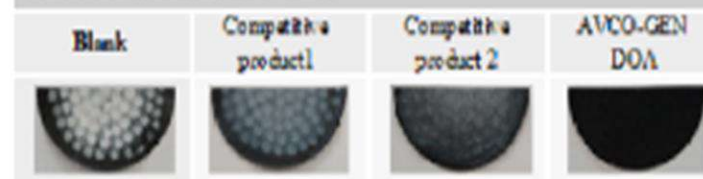


↑
Non-oligomer cheese

PERFORMANCE

PRODUCT	BLANK	TEST1	TEST2	TEST3
Competitive product 1	-	2g/l		
Competitive product 2	-		2g/l	
AVCO-GEN DOA	-			2g/l

OLIGOMER DISPERSING TEST



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AVCO - certified by bluesign
SYSTEM PARTNER
bluesign

STRIPPING AND LEVELING AGENT

AVCO-MIGRATOR EXCEL

CHEMISTRY	Compound of organic esters with anionic and non-ionic emulsifiers and dispersing additives
IONICITY	Anionic / Nonionic
DOSAGE	1 - 7 g/l

ADVANTAGES

- ✓ High levelling and migrating performance when dyeing at boil and HT conditions.
- ✓ Excellent migrating power can repair the color spot effectively after dyeing on the polyester fabric. The shade of the fabric is almost the same as before .
- ✓ Suitable for leveling out and brightening off shade polyester dyeing, it is recommended for stripping off disperse dyes from polyester fibers.
- ✓ Nontoxic, non volatile with low odor.
- ✓ An efficient accelerator for polyester dyeing, leveling and stripping.

STRIPPING AND LEVELING AGENT

AVCO-ACCELERATOR PED NEW

CHEMISTRY

Compound of eco-friendly organic esters with anionic and non-ionic emulsifiers

IONICITY

Anionic / Nonionic

DOSAGE

1 - 7 g/l

ADVANTAGES

- ✓ Excellent migrating power can repair the color spot effectively after dyeing on the polyester fabric. The shade of the fabric is almost the same as before .
- ✓ Suitable for leveling out and brightening off shade polyester dyeing, it is recommended for stripping off disperse dyes from polyester fibers.
- ✓ Little smelling, easy to washing off.
- ✓ An efficient accelerator for polyester dyeing, leveling and stripping.

Products	Test 1	Test 2	Test 3
Competitor's product		7.0g/l	
AVCO-ACCELERATOR PED NEW			7.0g/l
Adjust pH	4.8	4.8	4.8
Treat at 130oC x 60mins on bunch of colour full PE yarns.			



PERFORMANCE

SPECIAL MACHINE CLEANER

AVCO-CLEAN OGM

CHEMISTRY

Combination of free APEO surfactants and ammonium quats.

IONICITY

Nonionic / Cationic

DOSAGE

1 - 3 g/l

ADVANTAGES

- ✓ Powerful cleaner of dyeing machine and textiles from Oligomers, greases, oils and waxes.
- ✓ Excellent dispersing the waxes and oligomer deposits which enables the alkali/reducing agent formulation to destroy and dissolve the precipitated dyestuffs and residues stuck to the machine walls.



PERFORMANCE

Recommended Recipe for Cleaning Machine	
Products	Dosage (g/l)
AVCO-Clean OGM	2.0 – 5.0
Caustic Soda (100%)	2.0 - 6.0
Sodium Hydrosulfite	2.0 – 4.0
Treat at 100oC -130oC x 45mins -60mins	



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ALKALINE REDUCTION CLEARING

AVCO-BIOCLEAR GLR

CHEMISTRY

Compound of eco-friendly polyhydroxy-glucoside and dispersing agents in aqueous solution

IONICITY

Nonionic / Anionic

DOSAGE

2 - 4 g/l

ADVANTAGES

- ✓ Bio-degradable and non hazardous alkaline reductive agent, highly recommend to replace sodium hydrosulfite in reduction clearing for polyester.
- ✓ Good washing and rubbing fastness result as sodium hydrosulfite.
- ✓ Help to keep cellulose fibers unstained when dyeing blends of polyester with cellulose fibers.
- ✓ Contain a special protective additive which prevents the re-deposition of the loose dyestuffs.
- ✓ Non foaming product.



ACID REDUCTION CLEARING

AVCO-CLEAR ARC

CHEMISTRY

Aqueous solution of sodium formaldehyde sulfoxylate

IONICITY

Anionic

DOSAGE

1 - 4 g/l

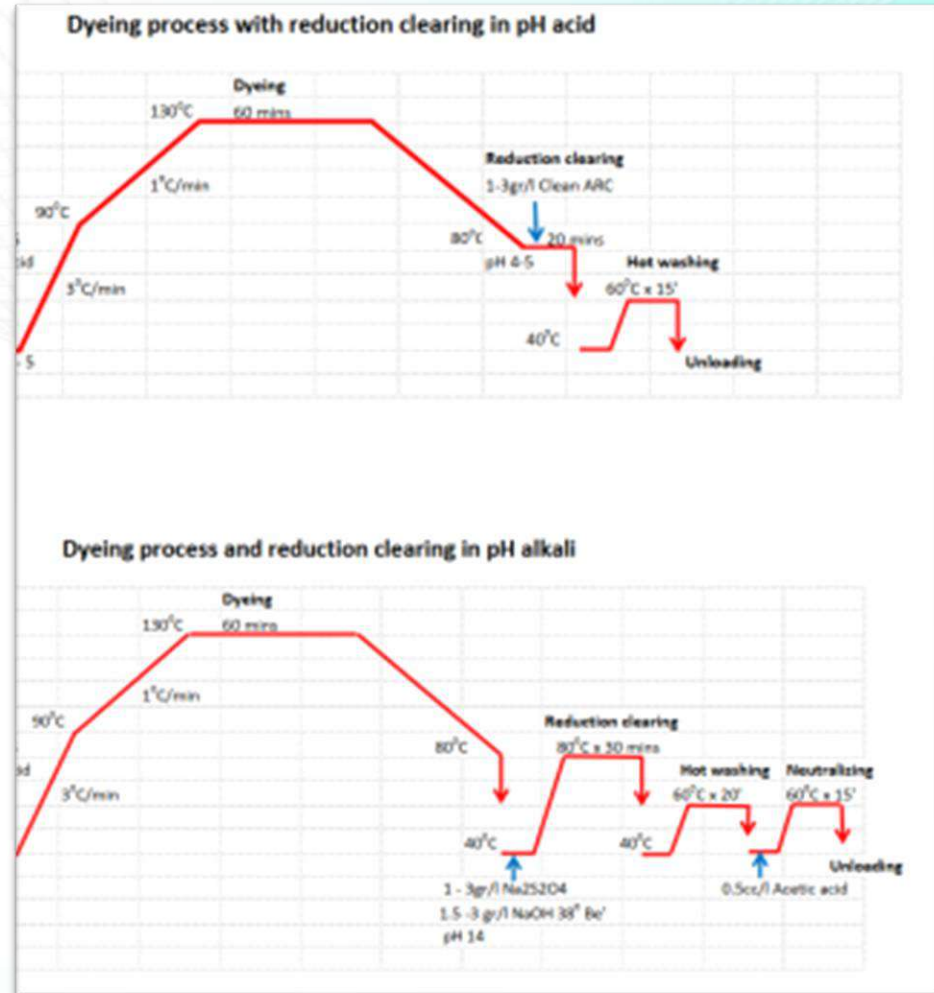
ADVANTAGES

- ✓ After dyeing, the product can be directly added into the dyebath without draining, the processing time can be reduced, and chemical can be saved.
- ✓ The unfixed dyestuff on fiber surface can be completely removed, and the washing effect is comparable to that with Caustic and hydrosulfite.
- ✓ Fastness properties and colour brilliancy of the dye fabric can be enhanced, and the shade is not effected.
- ✓ The dye liquor is lightly acidic after reduction clearing, raising without neutralization can be carried out immediately after finishing process

BENEFITS OF AVCO-CLEAR ARC

- ✓ Shorten the dyeing process
- ✓ Cost efficiency
- ✓ Safety handling

Comparison of AVCO-Clear ARC



ACID REDUCTION CLEARING

AVCO-CLEAR ARC

PERFORMANCE

1. Recipe for Dyeing :

Product	Dosage (g/l)
AVCO-POLYLEV ECO	1.0g/l
DISPERSE RUBINE SE	2.0 %
AVCO-CID PHS NEW	0.5g/l
Adjust pH : 5.0	
Process: Dyeing at 130oC x 45 mins (LR: 1:10) → Cooling to 85oC add Reduction Clearing agent to maintain 30mins → Drop -> Hot Washing 80oC x 10 mins → drain → Unloading	

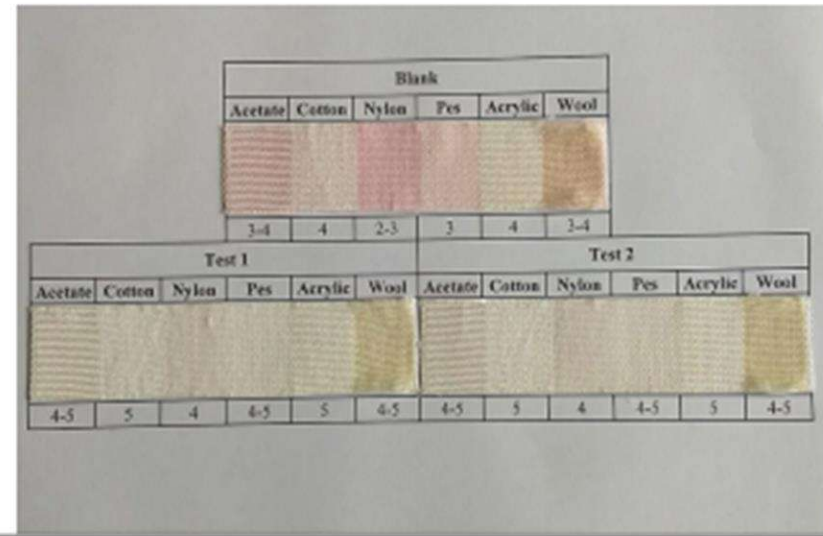
2. Recipe for Acid Reduction Clearing :

Product	Blank	Test 1	Test 2
Competitive Product		3.0 g/l	
AVCO-CLEAR ARC			3.0 g/l

3. Washing Fastness Test – ISO 105 CO3

Chemicals	Concentration
Neutral Soap ECE	5.0g/l
Na2CO3 (Soda Ash)	2.0g/l
Proceduce	LR 1:50 , Treat at 60oC x 30 mins

Solution after test washing fastness



SEWING THREAD LUBRICANT FOR LICK ROLL

AVCO-SEW HM /AVCO-LUBROSIL MTL

CHEMISTRY

Blend of silicon oil, waxes and additives

IONICITY

Nonionic

DOSAGE

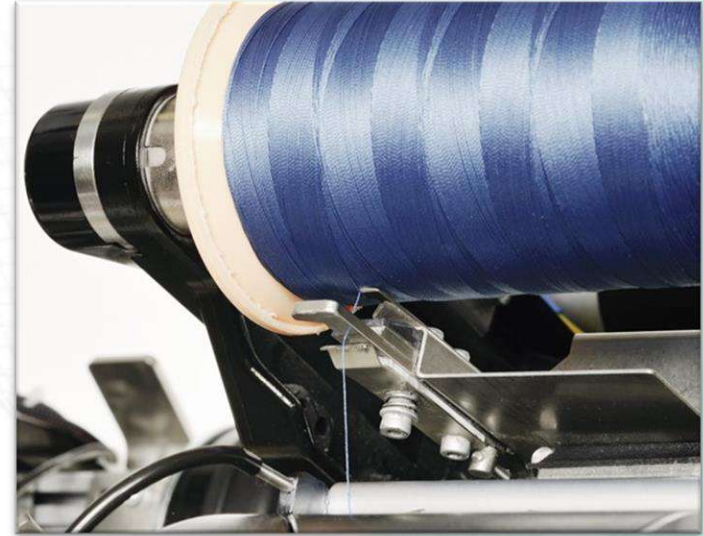
1 – 7 %

ADVANTAGES

- ✓ Good head protection and needle cooling during sewing.
- ✓ Reduces fiber/metal and fiber/fiber coefficient of friction.
- ✓ The gliding properties of treated sewing yarns are distinctly improved.
- ✓ Sewing speed can be fastened with no problems of too much heating up of the sewing needles during the sewing process.
- ✓ Does not effect dyeing fastness.
- ✓ Non yellowing finish.
- ✓ Applied in the hot lick roll and dosing pump systems.

WORKING TEMPERATURE

- ✓ AVCO-LUBROSIL HM : 80 – 90oC
- ✓ AVCO-LUBROSIL MTL: 60 – 70oC



SEWING THREAD LUBRICANT FOR LICK ROLL

AVCO-LUBROSIL CLR

CHEMISTRY

Blend of silicon oil, paraffine waxes and additives

IONICITY

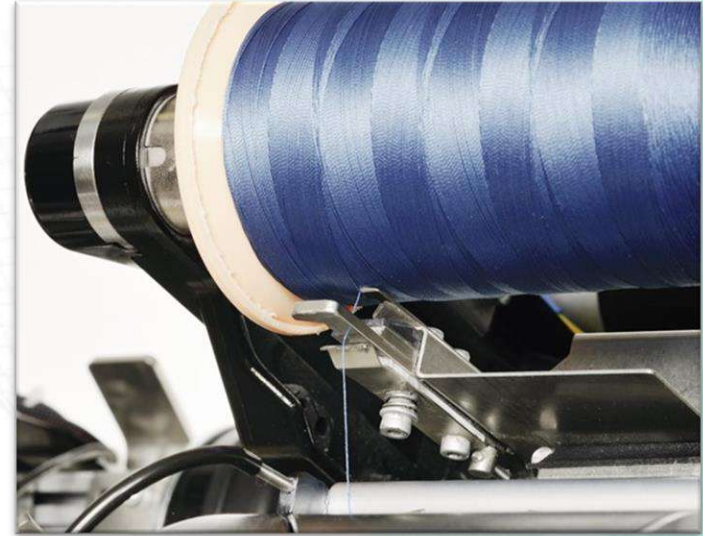
Nonionic

DOSAGE

1 – 7 %

ADVANTAGES

- ✓ Application is done at room temperature
- ✓ Has outstanding smoothing properties, and it imparts to the sewing yarns excellent gliding properties along with very good protection against heat.
- ✓ Good head protection and needle cooling during sewing.
- ✓ Reduces fiber/metal and fiber/fiber coefficient of friction.
- ✓ AVCO-LUBROSIL CLR is not sensitive to temperature changes, and has a constant flow during application, especially at lower temperatures.
- ✓ Does not affect dyeing fastness.
- ✓ Non yellowing finish.
- ✓ Can be applied in the hot lick roll and dosing pump systems.



The logo features the text 'AVCOchem' in a bold, sans-serif font. 'AVCO' is in blue and 'chem' is in green. A registered trademark symbol (®) is positioned to the upper right of the 'm'. The background is a light teal gradient with abstract elements: a large, semi-transparent green 'A' shape on the right, a blue wireframe wave pattern at the top, and a white wireframe wave pattern at the bottom. A dotted pattern is visible in the bottom right corner.

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