

Technical - Information

AVCO-BINDER 301

BINDER SOFT FOR TEXTILE PRINTING

AVCO-BINDER 301 is self cross linking, which forms a soft and flexible film with good resistance to washing processes and chemical like perchloroethylene at a cross-linked condition.

AVCO-BINDER 301 is Eco-friendly and free formaldehyde.

SPECIFICATION:

Appearance	White, free flowing liquid.
Chemical nature	Acrylic copolymer dispersion in water.
Ionic nature	Anionic.
pH	4 ± 1
Compatibility	Can be mixed with nonionic and anionic auxiliaries and pigments normally used in textile printing.
Resistance to Electrolytes	Good.
Solubility	Dispersible in water at any ratio.
Storage	Product should be stored in closed containers and protected against frost. When properly stored shelf life is at least 12 months.

FILM PROPERTIES:

1. Appearance - colorless, transparent.
2. Handle - very soft, very flexible.
3. Cross-linkability - can be cross linked at temperature range of 140 - 180°C. The reaction is accelerated with acid catalysts. Additional cross linkage is obtained by use of cross linking agent such as AVCO-FIXATOR PL.
4. Resistance to solvents - almost insoluble in conventional solvents used in dry cleaning.
5. Wash and rubbing fastness - properly cured binder stands repeated laundry cycles, dry cleaning, dry and wet - crocking as occurred in normal handling of printed textiles. Fastness properties depend on type of substrate, binder/pigments ratio, curing conditions, other ingredients of printing paste, and processes and auxiliaries used in fabric finishing. Fastness properties should be checked on each material before printing in bulk.

Technical - Information

PROPERTIES & USES:

1. AVCO-BINDER 301 can be used as a binder for organic and inorganic pigments dispersions on all kinds of textile fabric.
2. AVCO-BINDER 301 is suitable for pigment resist printing under reactive dyestuffs.
3. AVCO-BINDER 301 is suitable for discharge printing with pigments onto reactive dyestuff grounds.
4. Prints produced with AVCO-BINDER 301 have a very soft handle and there is no need to mix it with butadiene binders.
5. Can be used in all aqueous or oil in water printing pastes with all types of anionic or nonionic thickeners (poly-acrylic acids, guar derivatives).
6. Does not contain any solvents and other hazardous ingredients.

APPLICATION:

1. Printing paste preparation:

The following is a typical formulation:

	<i>gr/ kg</i>	<i>Remarks</i>
WATER	adjust to 1000	Use soft water.
ANTIFOAM PR	0 - 3	Important when printing large area.
AVCO-CLEAR CHI	20 - 30	Adjust to needed viscosity.
AVCO-PRINT JN	0 - 10	Co-thickener to prevent bleeding.
AVCO BINDER 301	60 - 180	Usage depends on quantity of pigment.
AVCO-PRINTOSIL EM	0 - 10	Softener.
AVCO-FIXATOR PL	0 - 5	Cross-linking agent.
AVCOLOR PIGMENT	0 - 50	Depends on required shade.

The thickener and antifoam (if needed) are added to the water and homogenized with a high speed (1500-3000 r.p.m) homo-mixer for 5 - 10 minutes.

It is preferable to add the binder in portions and lower the mixer speed. Preparation order should be as is shown in the recipe above.

In general, the amount of the binder should be adjusted to the pigment concentration and the colour fastness requirements. The calculation can be obtained by the following formula:

$$Y=40+3.5X$$

$$X=(g \text{ of pigment})/(kg \text{ printing paste}) \&$$

$$Y=(g \text{ AVCO-BINDER})/(kg \text{ printing paste})$$

2. Fixation:

After printing and drying the printed fabric should be cured at elevated temperature for the proper time as shown in the following table:

Technical - Information

Temperature (°C)	Fixation Time (minutes)
140	4 - 6
150	3 - 5
160	2 - 3
170	1.5 - 2
180	1 - 1.5

REMARKS:

1. Viscosity of the paste can be adjusted by increasing amount of AVCO-CLEAR CHI. If viscosity is too high it can be corrected by adding small amount of electrolyte (Di ammonium-phosphate or ammonium sulphate).
2. Use of AVCO-PRINTOSIL EM in printing formulation improves handle and increases dry-crock fastness.
3. Use of AVCO-FIXATOR PL improves wash fastness and wet crock fastness mainly while printing on synthetics or blends.
4. Use of 4 - 10 gr/kg of AVCO-PRINT JN can overcome bleeding problems in printing. It improves the uniformity and appearance of big printed areas and enhances production of brighter and deeper colors.
5. Use of 1 - 3 gr/kg AVCO-ANTIFOAM PR can solve problems of foam while printing paste preparation and processing.
6. If printing paste has to be stored for prolonged time add 1 - 2 gr/l preservative such as AVCO-GARD PR.
7. While using hard water it is advisable to add sequestering agent such as AVCO-POLYQUEST KAL (Do not use E.D.T.A types).
8. If there is a problem of screen clogging, add 5 - 10 gr/kg AVCO-PAL LUB.
9. After fixation there is no need for any further treatment. If customer demands additional finish check influence on fastness properties.