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INDOFIL HA-16
TECHNICAL DATA SHEET
HARD BINDER FOR FLOCKS AND NON-WOVENS

. **INDOFIL HA-16** is a non-ionic , self Cross- linking polymer emulsion which is used in variety of textile applications . It can be blended with INDOFIL HA -8(I) and other emulsions to achieve any property desired .

INDOFIL HA-16 is characterized by its ease of formulation , resistance to discolouration on exposure to ultraviolet light and ageing , excellent pigment bonding properties and durability to washing and dry cleaning .

APPLICATIONS

INDOFIL HA-16 is recommended for use in fabric finishing , pigment printing , spray bonding , fiberfill and other non woven fabrics , back coating , adhesive for lamination and flocking and paper coating . This product is also used in interlinings and blinds preparation.

TYPICAL PROPERTIES

Appearance	Milky white Liquid
Type	Self cross linking
Charge	Non-ionic
Emulsifying system	Non –ionic
Solid content	45+/-1
Ph (as packed)	3+/-0.5
Specific gravity at 25^0 C	1.05
Minimum film formation temperature	27^0 C
Brookfield LVF viscosity (spindle 3, 30 rpm)	600 cps
Storage	Protect from freezing

CATALYST

Since INDOFIL HA-16 is a self cross-linking acrylic emulsion , catalyst is not needed to achieve durability to washing and dry cleaning . However , to increase the rate of cross-linking under the normal conditions of curing an acid or latent acid catalyst is recommended . Following table will give the quantities needed for each catalyst .

PRODUCT	CONCENTRATION (BY WEIGHT)
Oxalic acid	0.1%
Di-ammonium Hydrogen Phosphate	1.0%
Ammonium Nitrate	0.5%

While adding catalysts, they should be diluted with water . Oxalic acid should be added from a 10% solution in water while others are added from 25% aqueous solutions .

Temperature at which the cross linking takes place using different catalysts is 120^0 C for oxalic acid , and 140^0 C for ammonium nitrate or di-ammonium phosphate respectively .

THERMOSETTING RESINS

Harder resins like melamine formaldehyde resins i.e. INDOFIL FIXER LF/PF/SVF can be used along with INDOFIL HA-16 to increase the wash resistance and it should be used at a concentration of 1-2% on the total adhesive . However , care should be taken to adjust the Ph of the adhesive to 8-8.5 with liquor ammonia .

THICKENING

INDOFIL HA-16 is supplied at low viscosity and as such is required to be thickened up for application in flocking , lamination , coating etc . There are two methods of thickening INDOFIL HA-16 :

1) Acrylic thickeners like Indofil ASE-60 TL which swells when neutralized with a base . Maximum viscosity is reached at Ph 7.8 – 8.3 normally , ammonium hydroxide is recommended as fixed alkalies impede cure and may cause yellowing .
2) Another way to increase the viscosity of the adhesive of INDOFIL HA-16 , is the use of carboxy methyl cellulose (commonly known as CMC) . It can be used along with INDOFIL HA-16 by making a slurry with xylene or by using a solution of 8% concentration in water .

ANTIFOAMERS

Antifoamers such as NXZ or NDW are recommended along with INDOFIL HA-16 . The concentration at which they are used vary from 0.1%, 0.15 % on the total adhesive formulation . While using these products they should be diluted with water before addition to the emulsions .

APPLICATIONS :

FABRIC FINSHING :

INDOFIL HA-16 can be used along with starch or thermosetting resin to improve the pilling resistance , to achieve dimensional stability of the fabric and increase the tear strength of the fabric . This is particularly of use in permanent press finishing on polyester /cotton/ viscose blends . The usage level is from 20-40 gm/litre in the formulation .

NON WOVEN APPLICATION

There are various methods to get the non woven fabrics using INDOFIL HA-16 . INDOFIL HA-16 is suitable for bonding non-woven alone or in continuation with mechanical methods .

1)SATURATION BONDING

Following recipe will illustrate the formulation used for Saturation Bonding of Non –woven fabrics :

INDOFIL HA-16	30 parts
Wetting out agents (10%)	6 parts
Water	60 parts
Di-ammonium phosphate (25%)	4 parts
Total	100 parts

The web is passed through this solution on a screen and then dried and cured in the usual manner at the usual temperatures.

2) PRINT BONDING

The formulation used in this system is as follows :

INDOFIL HA-16	95 parts
Antifoam (1:1)	2 parts
Wetting out agent	1 parts
Di-ammonium phosphate (25%)	2 parts
Total	100 parts

STORAGE

INDOFIL HA-16 should be stored in dark and cool place away from sunlight and source of heat .

HANDLING

INDOFIL HA-16 is a non toxic and non-inflammable in handling

Disclaimer:
The suggestion and data in this bulletin based on information we believe to be reliable. It is offered in good faith, but WITHOUT GUARANTEE, as the conditions and methods of the use of our products are beyond our control. We ALWAYS recommend that the prospective user should determine the suitability of our products and suggestions on an experimental basis first, Before adapting on a commercial scale.

IIL/SPCD/Textile