

## TUBVINYL® 270 FF

### TUBVINYL® 270 FF WHITE

<b>Characterization</b>	Formaldehyde-free, hot curing disperse adhesives for motif flocking and for producing heat-transferable flock motifs on textiles	
<b>Chemical Structure</b>	Combination of styrene acrylate dispersions, thickener system and additives	
<b>Supplied Form</b>	TUBVINYL® 270 FF:	High viscosity, whitish paste
	TUBVINYL® 270 FF WHITE:	High viscosity, white paste
<b>Ionic Character</b>	Anionic	
<b>pH Value</b>	7.5 - 8.5	
<b>Viscosity</b>	90,000 – 100,000 mPas (Brookfield RVT 20/7)	
<b>Storage / Storability</b>	If stored properly in a cool place between + 5 °C and + 40 °C in closed original containers, the product will hold for about 12 months. Protect from frost and excessive heat. Opened containers must be closed again tightly.	

The above given values are product describing data. Please consult the 'delivery specification' for binding product specifications. Further data about product properties, toxicological, ecological data as well as data relevant to safety can be found in the safety data sheet.

## Properties

### Film Properties / Fabric Handle

TUBVINYL® 270 FF and TUBVINYL® 270 FF WHITE are hot curing, disperse adhesives applicable in screen printing which are used as two component system with a TUBASSIST fixing agent for producing single-coloured and multicolour flockings with a distinctly soft handle as well as for producing transferable flock motifs. Flockings with a high abrasion fastness and a very good fastness to washing and dry cleaning are achieved.

TUBVINYL® 270 FF and TUBVINYL® 270 FF WHITE neither contain any formaldehyde nor detach it during fixation. Therefore, the strict demands of various ecological labels such as e.g. Öko-Tex Standard 100 (product class I) and Global Organic Textile Standard (GOTS) can be fully met.

### Rheology / Further Properties

TUBVINYL® 270 FF and TUBVINYL® 270 FF WHITE can be easily screen printed with sharp outlines despite their high viscosity. By means of the printing technique the adhesive layer can be evenly applied and does not penetrate into the material to be printed.

® = registered trade mark

TUBVINYL® 270 FF WHITE is already composed of white pigments. Therefore, with light-coloured flockings, this saves the blending of COLORMATCH WEISS into the standard product TUBVINYL® 270 FF.

## Application Procedure

### Application Fields

TUBVINYL® 270 FF and TUBVINYL® 270 FF WHITE are preferably used for producing particularly soft formaldehyde-free single-coloured flock motifs on textile cuttings and garments.

The adhesives are also suited for producing flock transfers if hotmelt granulate is sprinkled on.

### Recommendation for Use and Processing

#### Material Structure

For achieving a good flock adhesion and abrasion fastness the substrates in use must be dry, dust-free and free from detrimental preparation or fat add-ons. An evenly good wetting on the material ought to be secured. We generally recommend testing the suitability of the materials in pre-trials, particularly if impregnated or heat-sensitive substrates are to be flocked.

### Recipe Recommendations

#### TUBVINYL® 270 FF / 270 FF WHITE with:

	TUBASSIST FIX 157 W	TUBASSIST FIX 104 W	TUBASSIST FIX 120 W
for polyamide flock	5 %	5 %	-
for viscose flock	3 %	-	7.5 %
pot life	2 - 4 h	2 - 4 h	> 8 h

Prior to use we recommend stirring up TUBVINYL® 270 FF / TUBVINYL® 270 FF WHITE by means of an efficient stirrer and blending then the fixing agent homogeneously with the basic adhesive. An intense but air bubble-free distribution of the products has to be ensured; dried adhesive films (e.g. skin formation after improper storage) have to be removed beforehand.

TUBASSIST FIX 157 W can be universally applied with PA and viscose flock, both in direct flocking and in transfer production achieving good fastness levels.

TUBASSIST FIX 104 W leads to very good fastness levels with PA flock. For viscose flock we recommend using TUBASSIST FIX 157 W or TUBASSIST FIX 120 W.

### Recommended Additives and Auxiliaries

#### TUBASSIST FIX 157 W

Usually recommended in concentrations of up to 3.0 – 7.0 % to meet particular demands in terms of flock adhesion and very good washfastnesses. Adhesive stocks blended with fixing agent have to be processed immediately, possibly within 2 – 4 hours. Dispersions prepared with fixing agent, even only residual quantities, must not be stored in closed containers due to the CO<sub>2</sub> formation.

#### TUBASSIST FIX 104 W

With the addition of 3.0 – 4.0 % TUBASSIST FIX 104 W a good washfastness can already be achieved with PA flock at drying temperatures which are clearly below 120 °C. The fixing agent ought to be only added immediately before processing. Blended print pastes must be processed within half a working day (2 - 4 h) since the addition of the fixing agent leads to a strong increase in print paste viscosity.

#### TUBASSIST FIX 120 W

By adding 5.0 – 10.0 % TUBASSIST FIX 120 W a good washfastness with viscose flock can be achieved at fixing temperatures of 130 - 160 °C. TUBASSIST FIX 120 W has a pot life of several working days depending on the ambient temperature.

#### COLORMATCH Colour Pigments or COLORMATCH WEISS

For colouring TUBVINYL® 270 FF in the respective shade of the flock we recommend adding 0.1 – 5.0 % COLORMATCH colour pigment.

For flockings on dark grounds COLORMATCH WEISS (1.0 – 10.0 %) can be added to improve the covering capacity of TUBVINYL® 270 FF or you work directly with TUBVINYL® 270 FF WHITE. Higher colour concentrations or coarser colour pigments may render the penetration of the flock fibres into the adhesive layer more difficult and may then impair the fastness properties. Therefore, we recommend carrying out preliminary trials.

**Diluting/Thickening** Usually not necessary; the viscosity may be reduced by adding water (up 5 %).

**Cleaning of Working Utensils** Immediately with cold water. On longer stoppages the screens have to be kept moist or cleaned intermediately. Slightly dried in paste rests can be softened with suitable household detergents (e.g. dishwashing soap) and then rinsed with strong water jet; cured paste rests can be removed only mechanically.

**Application** In screen printing through monofilament polyester gauzes no. 15 - 40 T/S, depending on the design and the fabric quality.

If need be, the adhesive can also be applied by means of rotary screens or squeegee systems; the viscosity may then have to be adjusted.

The wet adhesive add-on is in the range of 100 - 300 g/sqm depending on the substrate quality and flock type.

Particularly with open fabric qualities and those which are easy to be penetrated, a sufficiently thick adhesive layer is absolutely necessary since by a sinking-in of the adhesive the flock adhesion may be impaired.

**Flocking** The flocking process ought to start immediately after the adhesive has been applied using common and tested flock fibres.

For electrostatic flocking a good contact between adhesive layer and counterelectrode (grounding) is important.

### **Drying / Fixation**

Can be carried out in one or two separate working steps. With thick adhesive layers high drying temperatures must be avoided at the start of the process since otherwise vapour bubbles may form below the upper adhesive layer which has already turned film-like.

Water vapour forming during the drying and fixation stage must be permanently drawn off in order to prevent the adhesive from being fixed insufficiently due to moisture accumulation during fixation.

#### Recommended conditions for hot air drying and fixation

two-step:                   drying at 80 - 120 °C, approx. 15 - 5 min; if need be, room temperature drying is possible after pre-trials  
fixation at 130 - 160°C, approx. 10 - 3 min

one-step:                   130 – 150 °C; approx. 15 – 6 min of drying and fixing

When fixing with IR radiators or other sources of energy it is essential to run meaningful trials before going into production.

### **Recommendation for Use**

Before going into production we recommend making it a rule first to test the suitability of the adhesive system for the substrates and flock qualities to be applied regarding wettability, adhesion, fastness properties, thermostability and process parameters and controlling this as well during the production run.

**We reserve the right to modify the product and technical leaflet.**

**Our department for applied technique is always at your service for further information and advice.**

Our technical advice and recommendations given verbally, in writing or by trials are believed to be correct. They are neither binding with regard to possible rights of third parties nor do they exempt you from your task of examining the suitability of our products for the intended use. We cannot accept any responsibility for application and processing methods which are beyond our control.

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