Adhesive 235 S

Characterization	Hot-curing, screen-printable dispersion-based adhesive system for the motif flocking on textiles - especially for high fastness requirements. In screen printing as basic paste for glitter and metal pigment effects and as additive for aqueous screen printing pastes for improving the fastnesses.
Chemical Structure	Compound of acrylic resin dispersions, thickener system and additives
Supplied Form	Adhesive 235 S high viscosity, pale paste
Ionic Character	Anionic
pH Value	8.0 - 10.0
Viscosity	Adhesive 235 S 57,000 - 89,000 mPas (Brookfield)
Conductivity	More than 240 graduation values (Mahlo textometer)
Storage	If stored properly in a cool place, between + 5 °C and + 25 °C in closed original containers, the product is stable for about 6 months. Protect from frost and 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

Processing / Fixation

Hot-curing flocking adhesive system which is applied preferably as a two-component system for the motif flocking and special screen printing effects.

Film Properties / Handle

Depending on the fixing concentrations the adhesive layers result in soft up to slightly harsh flocking, in screen printing there result soft printing effects with minor stickiness.

Stability

With Adhesive 235 S flock and print effects very fast to abrasion, washing and dry cleaning are achieved, especially if applied as two-component system.

Rheology / Further Properties

Its special rheology results in an easy printability through flat bed and rotary screens, a good definition, an easy dosage of the adhesive amount as well as an even application of the adhesive layer.
ADHESIVE 235 S enables brilliant metallic print effects due to the high transparency of the adhesive film.

Application Procedure

Fields of Application

Adhesive 235 S are mainly applied for the motif flocking on textile cuttings and ready- made articles. Besides the adhesives are also suitable for other water and heat-resistant substrates, soft foam materials, stable cardboard or paper as well as various synthetic substrates. The adhesive system is especially suitable as screen printing paste (e. g. glitter and metal pigment prints) or in combination with customary screen printing inks for improving the fastnesses, e. g. with substrates difficult to be printed.

Recommendation for Use / Processing

Condition of Substrate

To obtain good flock and print effects with highest fastness properties, a good flock adhesion and a good fastness to abrasion, the substrates applied have to be dry and free from dust or any detrimental preparations or auxiliaries. The substrates should show a good and uniform wet ability. It is therefore advisable to carry out a trial flocking beforehand, especially if impregnated or heat-sensitive substrates are to be flocked.

Recipe recommendation

	Electrostatic flocking		**Metallic print paste**
	Scope of processing	Special recommendation	Special recommendation
Adhesive 235 S	92 - 100 %	92 - 95 %	75 - 80 %
FIX 102 W	8 - 0 %	8 - 5 %	5 %
COLORMATCH ME or GLF types	-	-	20 - 15 %
	100 %	100 %	100 %

As screen printing additive for the improvement of fastnesses and for the printing on critical substrates.

	Lac print	White print	Colored 3D foam print	White 3D foam print
Adhesive 235 S	45 - 47 %	-	25 - 27 %	-
PRINTPERFEKT LAC 50/LAC 100	50 %	-	-	-
PRINTPERFEKT BLANC 450/BLANC 500	-	50 %	-	-
PRINTPERFEKT EX 50 T	-	-	70 %	70 %
TUBASSIST FIX 102 W	5 - 3 %	5 - 3 %	5 - 3 %	5 - 3 %
	100 %	100 %	100 %	100 %

The single components have to be mixed thoroughly with the basic adhesive by means of an efficient stirrer to ensure a homogeneous air-bubble-free distribution. Before use as a one-pack system, Adhesive 235 S must also be stirred up well; dried adhesive films (which form on inexpert storage) have to be removed beforehand.

Recommended Additives and Auxiliary Agents

FIX 102 W

A concentration of up to 8 % is usually recommended to meet special requirements as to flock adhesion and fastness to abrasion and washing. Adhesive stocks or print paste stocks which contain fixing agent have to be processed at once. Generally it is advisable to use up the adhesive stocks on the day of preparation.

COLORMATCH Pigments

For coloring the adhesive in the respective shade of the flock we recommend to add 0.1 - 5 % COLORMATCH pigment. For white flock effects the required coverage of the adhesive film is achieved by an addition of COLORMATCH WHITE (1 - 5 %) to ADHESIVE 235 S. Please note that high pigment concentrations may make the penetration of the flock fiber into the adhesive layer more difficult and will then affect the fastness properties, therefore, preliminary trials are essential.
If the flock adhesives are used as screen printing pastes for particularly wash-fast printing effects, we recommend to observe the indications on the COLORMATCH shade card.

BOMOPRINT RETARDER

It takes on the function of a retarder in adhesive stocks or printing pastes at concentrations of 2 - 6 %, e. g. in case of increased room temperatures. It retards the drying rate in the printing screens and extends the open time between application of adhesive and flocking. Higher concentrations may reduce the fixation speed.

Diluting/Thickening

Is normally not necessary, if need be (e. g. in metallic printing pastes), viscosity is reduced by adding water (up to 10 %).

The viscosity can be increased by stirring in homogeneously 0.1 - 1 % TUBASSIST T 506 W.

Cleaning of working utensils

Immediately with cold water, on prolonged stoppages during printing the screens have to be kept damp or cleaned intermediately. Left-over adhesive that has dried in can be swollen with TUBASSIST CLN 400 W and then rinsed with a strong water jet; cured adhesive can be removed only mechanically.

Pot life

The adhesive stock or printing paste stock containing the fixing agent has to be processed immediately, in general within 1 day; the adhesive alone can be stored in closed containers within the scope of storability.

Application of Adhesive

By means of rotary screens through monofilament PES gauzes no. 15 - 40 T/S, depending on design and quality of goods. Alternatively by means of rotary screens or knife; the viscosity has to be adjusted to the method of application.

The wet adhesive pick-up is in the range of 100 - 300 g/sqm, according to quality of substrate.

With loosely woven, very absorbent fabrics or qualities easy to be penetrated, the adhesive layer has to be sufficiently high, as by a too strong crushing of the adhesive layer or a sinking in of the adhesive the flock adhesion can be impaired.

As screen printing gauzes for color prints, lac and foam effects we recommend monofilament PES gauzes no. 24 - 50 T/S, for metallic effects no. 20 - 36 T/S or for glitter no. 12 - 18 S.

Flocking

The flocking process should be effected immediately after the application of the adhesive using customary, tested flock qualities.

Generally by high room temperature, low air humidity, thin adhesive layer and strong absorbent material the "open time" between adhesive application and flocking is reduced - or, in contrary, by addition of a retarder (TUBASSIST RTD 607 W) it is prolonged. The flocking process should be finished 2 - 3 minutes at the latest after the adhesive application.

On electrostatic flocking a good contact between adhesive layer and back plate electrode is required (grounding).

Drying / Fixation

Can be carried out in one or two phases. The cross-linking reaction (fixation), required for achieving a film fast to washing and abrasion is effected after drying by a hot-air treatment.

The drying and fixation terms depend on the type and capacity of the dryer, the substrate and the amount of adhesive applied.

High drying temperatures must be avoided at the start of drying, especially if thick layers of adhesive have been applied, as otherwise bubbles form in the lower part whereas already a film forms in the upper part of the adhesive layer.

Water steam arising during the drying and fixation stage must be drawn off continuously; too much humidity accumulating at the fixation stage can cause an incomplete cross-linking reaction.

Recommended conditions for drying and fixation by hot air:

One-stage	
	in the drying chamber generally between 130 - 150 °C, 20 - 5 min.
Two-stage drying	generally between 80 - 120 °C, 10 - 5 min. possible at room temperature after preliminary testing
+ fixation	130 - 160 °C, 10 - 3 min.

When fixing with IR radiators or other sources of energy it is essential to run a meaningful trial 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 systems or the printing pastes for the material to be flocked or printed and the flock fibers used regarding wet ability, adhesion, fastness properties, thermo stability and processing parameters and to control everything 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.

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