



## Gecko® Bond Top

Solvent based printing inks for flexible packaging  
Lamination Printing

### Description

A full colour range of highly pigmented plurisolvent nitrocellulose printing inks designed for reverse printed laminates on flexible films, supplied as finished products or for use as mono pigmented concentrates and system additives.

### Printing Process

Flexographic and gravure printing.

### Applications

Lamination Reverse Printing (for surface application, see the dedicated section below).

Suitable for food and beverage flexible packaging.

**Substrates:** PE, Coex OPP\*, BOPP\*, chemPET\*\*, PVDC-treated PET\*\*\*, Paper.  
\* Applicability on acrylic coated PP has to be tested properly in relation to the adhesion promoter already contained in the series.  
\*\* for printing on chemPET it is advised to use a special white (see section auxiliaries below). Not suitable for chemPET/ALU foil high-bonding laminates.  
\*\*\* with the addition of 3% of PET/PA Additive (70GH325253). Applicability has to be duly tested prior to the industrial print.

**Minimum surface tension:** PE, Coex OPP, BOPP: 38 mN/m (mN/m = dynes/cm)

**Adhesion Promoter** All inks in this series already contain Adhesion Promoter, with the exception of coloured metallic inks, which are adhesion promoter free. For coloured metallic inks, the addition of 6 – 7% of Adhesion Promoter (70GH278345) press side before printing is needed.

**Use for surface printing** Gecko Bond Top can be used on the above mentioned substrates for standard surface printing applications, when overprinted with OPV.

When OPV is not applied, this series can also be used in combination with the appropriate additives (see section Auxiliaries).

If the application in question requires high mechanical resistance or bears high blocking risk, it is strongly recommended to use the appropriate Gecko Frontal ink series. Moreover, for applications where ink-to-ink contact may occur (such as in folded packages, or where packages are stacked), Gecko Bond Top should not be used.

## Properties

<b>Adhesion</b>	4	<b>Heat resistance</b>	160° - 170° C
<b>Lamination bond</b>	Bonding values depend on substrate quality as well as adhesive type and solids applied.		
<b>Rating scale:</b>	(1 to 5 based on Gecko product range) 1= worst value, 5= best value		

**Note:** All technical properties are a guideline only and depend on pigment choice and final application. For details about exact test methods which are the basis for info about fastness properties given above please refer to the general test method overview.

## Printing Viscosity

Diluents	Flexographic Printing 20 – 25 s DIN 4		Gravure Printing 13 – 15 s DIN 4	
		%		%
<b>Slow</b>	n-Propanol/n-Propyl Acetate	90:10 to 70:30	Ethanol/n-Propyl Acetate	50:50 to 75:25
<b>Standard</b>	Ethanol/Ethyl Acetate	90:10 to 70:30	Ethanol/Ethyl Acetate	50:50 to 30:70
<b>Fast</b>			Ethyl Acetate	100
<b>Retarder</b>	Ethoxy Propanol		Ethoxy Propanol	

## Auxiliaries

### White

Gecko Xtreme and Gecko Bond Star NP are whites especially dedicated to high performance lamination (please refer to the respective Technical Data Sheets). Due to the exceptional performances in respect to bonding values, opacity and solvent retention, their use is more and more extended to applications printed over the standard use with Gecko Bond Star NP colored inks as well as applications where Gecko Bond Top are used.

The final results, of course, are strongly affected not only by the characteristics of these products but also by the quality of the primary and secondary films used (consistency of the surface energy in case of corona treated films, quality of the coating in case of chemical treated ones), quantity of ink applied, quality and quantity of adhesive applied, solvent retention, converting set up and post-lamination treatment of the laminate.

Using some solvent-less adhesives normally related to general purpose and high speed applications, a penetration of the adhesive into the white layer has been noticed by an initial aesthetic effect. This is caused by the low molecular weight of PU used in these adhesives.

Normally, in case of proper converting application, this effect disappears when curing of the adhesive is completed. In case of Gecko Bond Star NP white this phenomena can be strongly reduced adding 1 – 2 % of 70GH278345 Adhesion promoter. The customer nevertheless has to apply a preliminary test in order to fully evaluate the effect of this addition in terms of the final bonding values and light fastness.

Our Technical Support team is available for any further suggestion.

### Metallics

A full range of Gecko® imitation gold and silver inks is available.

### Additives

For surface printing applications, the addition of 2 – 3 % of wax paste (70GH257411) can increase mechanical resistance. Too high addition of wax

paste may reduce gloss

The addition of 2 – 3 % of PET/PA additive (70GH325253) improves the bonding performance on some substrates. Please refer to your local technical service to verify the possible applications.

**Process Inks** A range of slow drying flexo half-tone process colours is available (GBT raster).

### **Gecko Bond Top from Concentrates**

With mixing stations or other equipment, it is possible to produce ready-made Inks of the Gecko Bond Top using the concentrates of the Gecko Base Series and the appropriate System Additive Gecko Bond Top (00GT278236) or System Additive APF; GBT (00GT400017) for coloured metallic inks.

For this operation, it is required a mixing ratio of:

- 30% of System Additive (00GT278236 or 00GT400017 for coloured metallic inks).
- 60% of Gecko Base products (Colour Concentrates and NC varnish 00GB274057).
- 10% of free solvent

No warranties can be given if products from other manufacturers are mixed with **hubergroup** products.

### **Instructions for the use of printing inks for the production of primary food packaging**

For information on the use of printing inks, varnishes and additives for the manufacture of food packaging please refer to the respective „**Statement of Composition**". This information is provided to allow the calculation of possible levels of migration of evaluated substances in a worst case situation.

Migration tests at **hubergroup** laboratories with printed samples made from commercially available OPP film (film thickness: 35 u, printed wet ink: 6 g/m<sup>2</sup>, with 95 % ethanol as the food simulant) and PE film (film thickness: 50 u, printed wet ink: 6 g/m<sup>2</sup>, with 95 % ethanol as the food simulant) showed no migration of substances above legal limits. Based on the results of these migration tests, we expect that the printed inks enable the final printed products to comply with the legal requirements for packaging for all kinds of foodstuff.

The manufacturer of the finished article and the filler have the legal responsibility to prove by appropriate migration testing that it is fit for its intended purpose.

In order to maintain low residual solvents concentration in the printed film, the printer must ensure sufficient drying of the product, especially when retarders have been added. Residual solvent content must be regularly monitored.

The products must not be used in the manufacture of packaging where the printed ink layer is intended to come into contact with foodstuff (direct food contact).

There are restrictions for the use of printing inks for applications where temperatures above 100 °C for extended periods of time are applied. For details, please see document "Food Packaging Inks for High Temperature Applications".

### **Health & Safety**

The material safety data sheets contain all relevant information for the generation of appropriate internal plant instructions. The user is responsible for all local legislation requirements.

### **Ink Handling**

Please refer to General Guidelines for handling inks for flexible packaging.

## **Storage Conditions**

Store the material in the original packaging at a temperature not below 5°C and not in direct contact with sunlight.

Contact addresses for advice and further information can be found under [www.hubergroup.com](http://www.hubergroup.com)

Due to the many variables in materias for printing, design construction, processing conditions and test criteria, this Technical Data Sheet can only be of an advisory nature. Our data reflect the latest state of our knowledge and are based on the characteristics established in the laboratory and on practical experience. Because there are many factors under the control of the user which may affect processing or application/use, it is necessary for the user to carry out appropriate tests to determine whether the product(s) is technically and safely suitable for the particular purpose, prior to use. hubergroup disclaims any liability for applications for which this ink series is not foreseen. No warranties of any kind, either expressed or implied, are made regarding the products here described. The English version is the master document, on which to refer for any translations.