



## Gecko® Frontal Plus

Solvent based printing inks for flexible packaging  
**Standard surface printing**

### Description

A full colour range of pigmented nitrocellulose printing inks designed for surface printed applications on papers and flexible films, supplied as finished products or for use as mono component concentrates and additives within an ink dispenser formulation.

### Applications

Flexible and semi-rigid packaging for food and beverage products printed on coated and uncoated papers. May also be printed over a wide range of films if a suitable white or primer has first been applied.

### Print Process

Surface print Flexographic and Rotogravure.

### Properties

Ink adhesion	5	Water resistance	max. 4*)
Rub resistance	4	Deep freeze resistance	max. 4*)
Anti-scratch	4	Vegetable oil resistance	max. 4*)
Heat-resistance	160° C - 180° C	Light fastness (BWS)	max. 7*)

**Rating scale** (1 to 5 based on Gecko product range) 1= worst value, 5= best value

**Note:** All resistance properties are a guideline only and depend on the final application. The values marked with \*) also depend on pigment selection, the maximum values only apply when using pigments with adequate fastness properties. 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.

Substrates: Paper, Coated paper, Metalized paper, Primed aluminium

### Print viscosity

Diluents	Flexographic 20 – 25 s DIN 4		Gravure 15 – 20 s DIN 4	
	Slow	n-Propanol/n-Propyl Acetate	9 : 1	n-Propanol/n-Propyl Acetate
Standard	Ethanol/Ethyl Acetate	9 : 1	Ethanol/Ethyl Acetate	3 : 1
Fast			Ethanol/Ethyl Acetate	1 : 1
Retarder	Ethoxy Propanol		Ethoxy Propanol	

## Auxiliaries

<b>Metallics</b>	A full range of Gecko gold and silver inks is available.
<b>Additives</b>	Gecko Frontal Plus is not designed to give adhesion when printing directly on metalized paper, aluminium, OPP and PE films. For printing on films and aluminium appropriate primers are available. A full range of additives is available to modify the characteristics of Gecko Frontal Plus.
<b>Lacquers</b>	For modification of surface properties a wide range of dispersion lacquers is available.

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

For information on the use of printing inks 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 µ, printed weight: 6 g/m<sup>2</sup>, with 95 % ethanol as the food simulant) and PE film (film thickness: 50 µ, printed weight: 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 inks, especially when retarders have been added. Residual solvent content must be regularly monitored.

The inks 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 120 °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.

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