



Joncryl® FLX 5201 – New water-based lamination ink vehicle for food packaging

Printing, Packaging & Adhesives

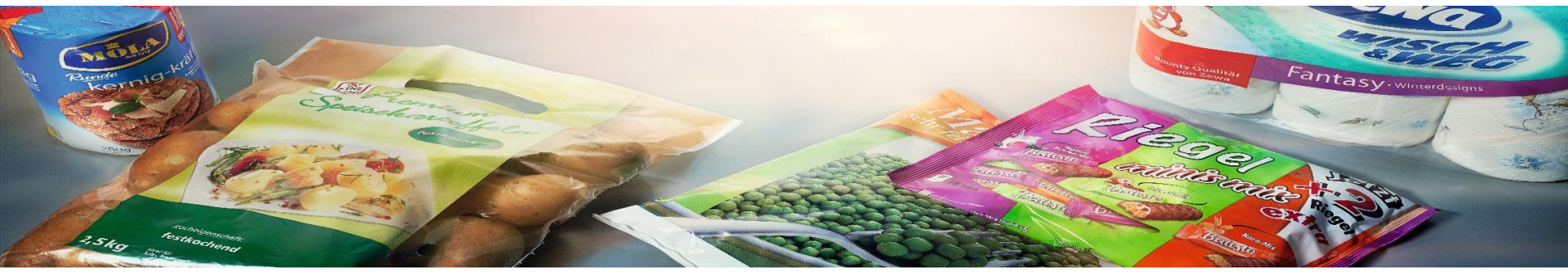
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Joncryl® FLX 5201

Main Applications

- A polyurethane dispersion for water based lamination inks for the flexible packaging market.
- Designed for medium duty lamination whites and color inks on:
 - Candy, snack bags.
 - Freezer bags.
 - Dried food packaging.
- Printing and lamination on versatile selection of films:
 - PE, OPP, PET, OPA (nylon)
- Laminated with 2K solvent less and water-based adhesives.



Joncryl® FLX 5201

150 years



Joncryl® FLX 5201 is an aliphatic polyurethane dispersion for use in lamination inks for food packaging applications

Key features & benefits

- ***Excellent lamination bond strength***
- ***Good printability and resolubility***
- ***Good block resistance***
- ***Swiss List compliant for food packaging***

Typical Characteristics

Appearance	opaque emulsion
Molecular weight (Mw)	> 200,000
Non-volatile	40%
pH	8.5
Viscosity at 25°C (Brookfield #3 LVF, 30 rpm)	100 cps

Joncryl® FLX 5201

- Especially suitable for water based lamination inks, offering:
 - High lamination bond strength on a range of substrates:
 - BOPP and PET; chemically treated and corona treated, and OPA (nylon).
 - Excellent resolubility.
 - Good substrate wetting.
 - Good compatibility with Joncryl® HPD based pigment concentrates.
 - Designed for food packaging applications.
- Very effective in combination with Joncryl® FLX 5000-A to optimize:
 - Lamination bond strength vs. blocking properties.
 - Printability and resolubility.
 - Ink cost.



Joncryl® FLX 5201

Ink Formulations – Opaque Whites

White Pigment Concentrate

RDI/s TiO2	75.0
Tego Foamex 810	0.5
Tego Dispers 750W	7.5
Water	<u>17.0</u>
Total	100.0

Surfactant based white dispersions are recommended.

Wetting agents may be utilized to improve wetting on difficult-to-wet substrates

Whites – Various ratios of Joncryl® FLX 5201: Joncryl FLX 5000-A

Blend Ratios	100:1	75:25	50:50
75% TiO2 dispersion	40.0	40.0	40.0
Joncryl® FLX 5201	56.4	44.3	28.2
Joncryl® FLX 5000-A	--	14.1	28.2
Isopropanol	3.0	3.0	3.0
Joncryl® Wax 4	0.2	0.2	0.2
Anti-foam	0.3	0.3	0.3
Wetting agent	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
Total	100.0	100.0	100.0
Add as needed to adjust viscosity			
Rheovis® PE 1320	0.3	0.9	0.8

Joncryl® FLX 5201

Ink Formulations – Colors

Colors – Recommended ratios of Joncryl® FLX 5201: Joncryl® FLX 5000-A

Blend Ratios	100:0	75:25	50:50
Pigment Dispersion	40.0	40.0	40.0
Joncryl® FLX 5201	56.4	43.0	30.0
Joncryl® FLX 5000-A	--	13.6	30.0
Isopropanol	3.0	3.0	3.0
Joncryl® Wax 4	0.2	0.2	0.2
Anti-foam	0.3	0.3	0.3
Wetting agent	0.1	0.1	0.1
Total	100.0	100.0	100.0
Add as needed to adjust viscosity			
Rheovis® PE 1320	1.1	0.8	0.3

In general, higher amount of Joncryl® FLX 5201 improves lamination bond strength, blocking resistance and curing in the reel. Higher amount of Joncryl® FLX 5000-A improves printability and resolubility properties.

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Resolubility

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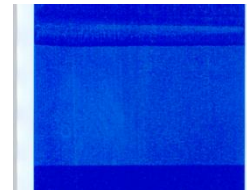
Joncryl® FLX
Resolubility

Poor
Resolubility

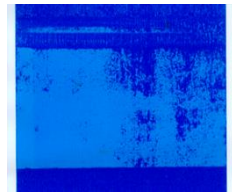
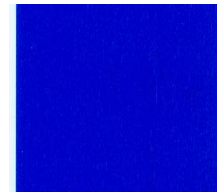
Before stop



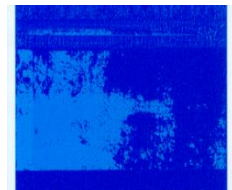
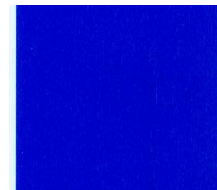
After 20 prints



After 40 prints



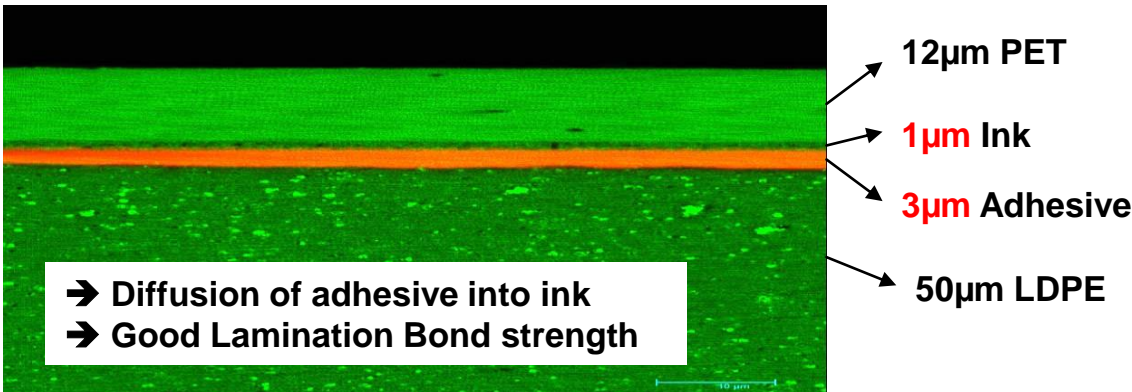
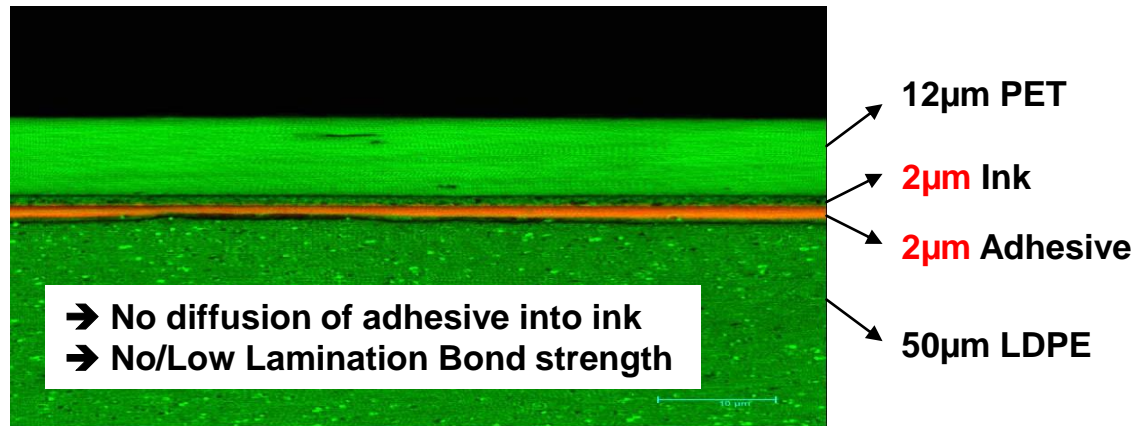
After 200 prints



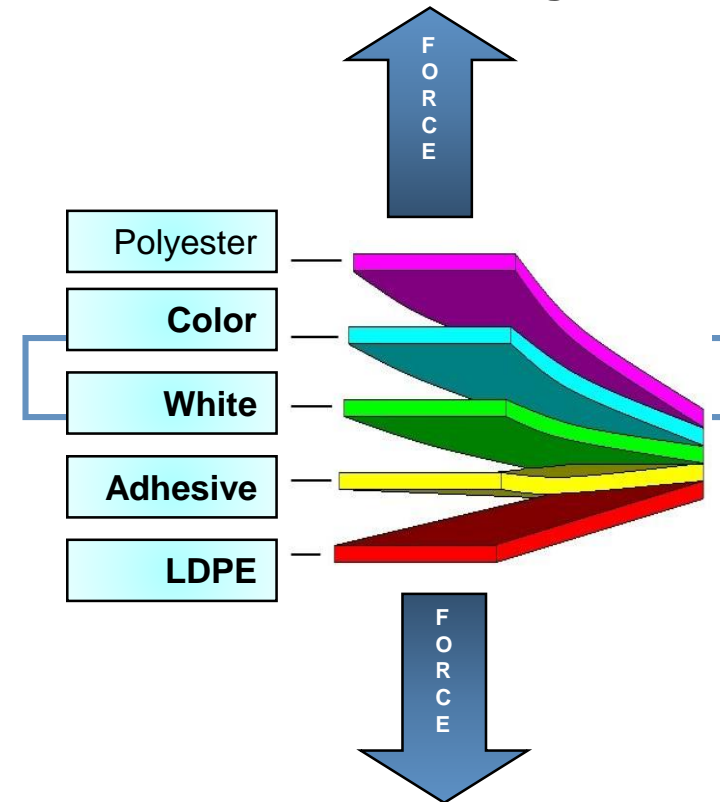
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Lamination Bond Strength

Laser Confocal Scanning Microscopy:



Lamination Bond strength



● Adhesive penetration into the ink layer(s) important for bond strength

Joncryl® FLX 5201

Value for the printer/convertor

Polymer Properties

- Good compatibility with ink additives.
- Wide range of pigment dispersion options.
- Stable viscosity.

Ink Properties

- Greater formulation flexibility - optimize ink formulations.
- Good color strength and stability- utilize either surfactant or resinated pigment dispersions.
- Good Resolubility - slow solvents or organic amines not required.

Values for Printer / Converter

- Good press resolubility.
- High bond strength with 2K and water-based adhesives.
- Good adhesion to a wide range of substrate combinations.
- Inks can be used for food packaging.

150 years



Contact your BASF representative for further
information about Joncryl[®] FLX 5201

Thank You!

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Flexible Packaging Inks

Quality you can see,
properties you can rely on

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