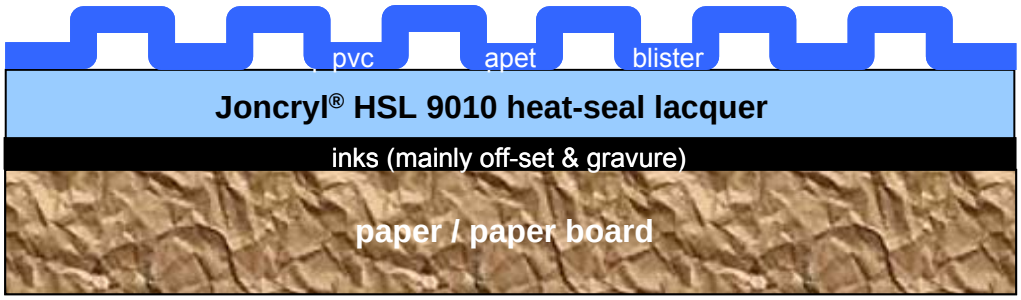
BASF
We create chemistry

Joncryl® HSL 9010

general	an acrylic co-polymer emulsion for use in water-based heat-seal lacquers for cardboard blisters and flexible packaging
key features & benefits	water-based economical low sealing temperature good blocking resistance
chemical nature	acrylic co-polymer emulsion



Properties

appearance translucent emulsion

typical characteristics
(should not be interpreted as specifications)

non-volatile	45 %
Brookfield viscosity at 25 °C	70 mPa.s
pH	7.3
acid value (on solids)	60
glass transition temperature Tg (DSC)	-10°C
density at 25 °C	1.03 g/cm³

Application

Joncryl® HSL 9010 is an acrylic co-polymer that offers heat-seal properties at low sealing temperature. The product is very suitable for producing cardboard blister cartons.

Due to the low activation temperature, the product will allow shorter dwell times of the sealing equipment. As a result the product output of blister packaging lines is improving by 20-50 %.

Application (continued)

Joncryl® HSL 9010 normally will be formulated in order to be applied in-line over wet offset inks through the regular coating stations on a sheet-fed offset press.

The following formulation was used to perform sealing tests:

77.0 parts	Joncryl® HSL 9010		
20.0 parts	Joncryl® 8085	42.5% solids solution of solid resin Joncryl® 682	
3.0 parts	Hydropalat® WE 3475	wetting agent	
100.0 parts			
	solids	46%	
	viscosity mPa.s (25°C Brookfield)	850	
	dilution to 150 mPa.s	11%	water addition
	gloss	78%	measured at 60° angle over standard offset ink

This formulation can be considered as a starting point for use as an offset overprint varnish. Addition of commonly used defoamer and wax-additive is recommended to improve press stability and scratch resistance.

- Sealing profile of the formulation was tested on standard 275 gsm blister board (Lino freeze, MM Karton).
- Varnish applied with a cylinder 140 lines/inch over a wet offset ink and on plain board.
- Coating weight 8 grams wet, 3.8 grams dry.
- Coated board was sealed against PVC and A-PET blister film.
- Dwell time 2", pressure 3 Bar. Only upper sealing jaw was heated (“punch seal”).

The table below shows the result - OK means complete-fiber tear achieved.

dwell time: 2" pressure: 3 Bar	cartonboard - blister plastic combination			
	Linofreeze - PVC		Linofreeze - PET-A	
temp	on offset ink	unprinted	on offset ink	unprinted
120 °C	OK	moderate	OK	moderate
140 °C	OK	OK	OK	OK
160 °C	OK	OK	OK	OK
180 °C	OK	OK	OK	OK

blister performance

Other heat-seal	Joncryl® HSL 9010 is very suitable as a binder or modifier for water-based heat-seal lacquers in a variety of other cardboard and flexible packaging applications. In this function it will replace existing solvent-based heat-seal lacquers or co-extruded sealing films.
Cardboard boxes	Joncryl® HSL 9010 can be used in lacquers on cardboard boxes and trays replacing PE co-extrusion. Due to the low activating temperature the product will provide sealing capability in combination with a level of water and water-vapor resistance that is sufficient for many applications. The product can easily be formulated with wax dispersions to further improve barrier properties.
Pharmaceutical blisters	Joncryl® HSL 9010 will provide bond-strength that meets the requirements for strip-off blister foil. For push through foils the product will serve as a modifier to improve sealing profile of existing water-based heat-seal lacquers.
PET lidding film	Joncryl® HSL 9010 is suitable for heat-seal lacquers on easy peel-off PET lidding films for PET tray material in a variety of packaging applications.

Activation temperature

Joncryl® HSL 9010 allows relatively low sealing temperatures making the product suitable for sealing thicker packaging materials during short activating time:

Joncryl® HSL 9010 against PS, APET and PVC : Activation temperature 140 - 160 ºC (0.5'', 3 bar)
Joncryl® HSL 9010 against itself (aluminium) : Activation temperature 80 - 100 ºC (0.5'', 3 bar)

Peelstrength* aluminium against plastics		
	3.5 gsm	7.5 gsm
PS	4	7
APET	5-7	8-10
PVC	7-9	8-11
**peelstrength strips in N/15mm, activating temperature 140-160 ºC, dwell time 0.5", 3Bar*		

Peelstrength* Joncryl® 9010/ Joncryl® 9010 (aluminium)		
	3.5 gsm	7.5 gsm
80 ºC	1.5	3
140 ºC	3	6
**peelstrength strips in N/15mm, Joncryl® 9010 against itself, dwell time 0.5", 3Bar*		

Safety
When handling this product, please comply with the advice and information given in the safety data sheet and observe protective and workplace hygiene measures adequate for handling chemicals.

BASF East Asia Regional Headquarters Ltd.
45th Floor, Jardine House, No. 1 Connaught Place, Central, Hong Kong