



# GSA Polyurethane Lamination Ink

## 【Specification】

GSA series is an ester soluble polyurethane general-purpose ink for PET, NY and BOPP film printing. It is an eco-friendly lamination ink which is suitable for high temperature steam retort application.

## 【Series】

GSA— high temperature steam retort, boiling and light packaging product.

P.S. Retorting and boiling performance is affected by pigment migration. If steam retort application is required please refer to “Standard colour code and application” as shown below for choosing the suitable colour.

## 【Main components】

- ❖ Resin: Ester soluble polyurethane
- ❖ Solvent: Ester/alcohol/ether
- ❖ Additive: Dispersant/anti-blocking agent
- ❖ Pigment; Organic/inorganic

## 【Printing Substrates】

- ❖ PET.....Surface tension above 50 dynes
- ❖ NY .....Surface tension above 52 dynes
- ❖ BOPP .....Surface tension above 38 dynes
- ❖ PT cellophane ..... printing grade product

## 【Dilution】

Solvent	Drying speed		
	fast	medium	slow
Isopropyl alcohol	20	20	20
Ethyl acetate	30	—	—
n-propyl acetate	50	80	70
Propylene glycol methyl ether acetate	—	—	10

### 【Application】

Application	Film lamination	Surface treated PET	Surface treated NY	Surface treated OPP	K Coated film	PT
Dry food Light package	dry solvent free	O	O	O	O	O
Boil food	dry solvent free	O	△	△	△	-
Retort food	dry	△	△	-	-	-

PS: “O” indicates applicable, “△” For retort and boiling application please refer to table below.

### 【Standard Color Number & Application Scope】

Components	Light packaging	NY/OPP(PE)		PET/OPP(PE)		PET/AL/OPP
		Boiling	Retort	Boiling	Retort	Retort
Temperature °C		98	120	98	120—135	120—135
134 black	O	O	O	O	O	O
213 white	O	O	O	O	O	O
321 yellow	O	O	X	O	X	X
321R yellow	O	O	O	O	O	O
322 trans yellow (Red hue)	O	O	O	O	O	O
328 trans yellow (Green hue)	O	O	O	O	O	O
426 Red (Yellow hue)	O	O	X	O	X	X
438 Red (Blue hue)	O	O	O	O	O	O
446 Golden red	O	O	X	O	X	X
446HR Golden red	O	O	O	O	O	O
498 pink	O	O	X	O	O	O
531 blue	O	O	O	O	O	O
632 green	O	O	O	O	O	O
724 orange	O	O	X	O	X	X
724R orange	O	O	O	O	O	O
843 violet	O	O	O	O	O	O
999 varnish	O	O	O	O	O	O

PS: 1. “O” indicates applicable; “X” indicates inapplicable.  
 2. Many color if need high temperature retort property should choose “R” suffix.  
 3. “E” suffix only suitable for light packaging.



### **【Storage & Safety】**

- ❖ Flammable, volatile. Store in a cool and ventilated place, keep sealed, avoid direct sunlight.
- ❖ Mix thoroughly before use, best printing performance can be achieved between 15-30 °C;
- ❖ Avoid direct contact with skin and eyes, refer to MSDS for more details.

### **【Precaution】**

- ❖ In general, ink does not require additive. 3-5% anti-blocking agent can be added when printing on films with both sides treated. Excess addition of additive may affect the lamination performance.
- ❖ When using water-based adhesive with gold and silver ink, ensure the ink surface tension meet the process requirement.
- ❖ For BOPP printing, please enquire for special purpose model or add adhesion promoter in order to increase lamination strength. Typical addition amount is 0.3-0.8%. Addition of anti-blocking and adhesion promoter will not affect ink storage stability.
- ❖ For PE/PEEL, it is recommended to use GSA(PE) series.
- ❖ When printing on PET and NY for boiling and retorting application, ensure compatibility between ink and adhesive.
- ❖ This product is a single component solvent ink, however 3-5% hardening agent could be added when used for retorting or other special application. Excess addition will decrease ink stability.
- ❖ When printing on NY film, 3-4% curing agent should be added to avoid moisture absorption.
- ❖ Please assess ink performance for 121-135 °C ultra-high temperature retort before production

### **【Disclaimer】**

The data shown in this document is based on actual production and test result generated within our company. Above data is only for reference and does not bear any legal guarantee responsibilities. Whether actual ink performance can meet user's requirement depends on application conditions and substrate etc. We suggest that users should access whether current production conditions meet the application requirement of each product before printing. Since we cannot control the actual application and storage conditions, we cannot guarantee the final product performance. All product sales subject to our standard sales terms and conditions.