

IPX-HF(LV) Ink series

(Halogen-free, environment-friendly 2 pack type ink for film insert molding)

IPX-HF(LV) series is an environment-friendly 2 pack type ink series for film insert molding that does not intentionally use halogen compounds (chlorine Cl, bromine Br) in raw materials and reduces polycyclic hydrocarbons (PAHs) such as naphthalene to 500 ppm or less. Excellent heat resistance during post-processing such as film insert molding.

Applications	Film insert products in general such as automobile interior, home appliance nameplates		
Special Features	<ul style="list-style-type: none"> • Create decoration printed materials for film insert molding on easy adhesive treated PET film and PC (polycarbonate) sheet. • By combining with IMB binder, insert molding with PMMA (acrylic), ABS, PC (polycarbonate), etc. is possible. • Two pack type ink, forms a printed ink layer with excellent flexibility and heat resistance. 		
Substrate	Easy adhesion treated PET film, PC (polycarbonate) sheet		
Dilution	Z-701 SOLVENT (fast dry), Z-703 SOLVENT (standard), Z-705 SOLVENT (slow) Dilution 10 to 15% * Do not use other solvents as they may cause contamination of halogen compounds and PAHs, and may adversely affect curing, adhesion, stencil stability, or other properties.		
Catalyst/Promoter mixing	240 Catalyst 10% (standard)	Pot life 4 to 5 hrs.	
	106 Catalyst 14% (to improve adhesion to materials)	Pot life 2 to 3 hrs.	
	200 Catalyst 16% (extra soft)	Pot life 4 to 5 hrs.	
	* The ink will turn to gel after the pot life has expired. Be sure to mix only enough to use		
Additives	SM-40 DEFOAMER	1 to 2% (For anti-foam and improving leveling)	
	SM-196 PROMOTER (LV)	1 to 4% (to shorten drying time and to prevent ink from sticking to the mold)	
Recommended Cleaner	NF-003 SOLVENT		
Mesh	T 200 to 350 mesh (Coverage would be about 35m ² /kg at 250 mesh)		
Drying	90°C 60 min *Ensure sufficient drying	<u>Overprint</u> Each layer 80°C 10 min (tack-free) Final layer 90°C 60 min	
Standard Colors	HF(LV)001 VICTORIA HF(LV)169 SCARLET HF(LV)179 RED HF(LV)199 RED HF(LV)239 LIGHT YELLOW	HF(LV)279 REDDISH YELLOW HF(LV)399 BLUE HF(LV)529 ORANGE HF(LV)589 MAGENTA HF(LV)679 WHITE	HF(LV)829 VIOLET HF(LV)969 PNC BLACK HF(LV)979 BLACK

Caution

- Do not use solvents and catalysts other than the designated ones because of the possibility of contamination with halogen compounds and PAHs.
- Please check the squeegee rubber, emulsion, materials and substrates before use, as they may contain halogen compounds.
- Be sure to print a binder as an adhesion layer to the molding resin.
 - ⇒IMB-HF009 Binder: Compatible with MIR ink, PC resin and PMMA resin molding.
 - ⇒IMB-HF006 Binder: Compatible with general-purpose resin molding such as ABS, PMMA, As, etc..
- When printing a binder, if the underlayer ink is excessively dry, peeling strength will be reduced. Be sure to print continuously up to the binder and conduct final drying.
- In the forming process such as vacuum forming, pressure air forming, and mold forming, as well as in insert molding processes that integrate injection molded resin, a complex set of factors affect the performance of the final product, including the selection of printing materials and inks for design printing, printing conditions, printing sequence, drying method and conditions, selection of molding resin, mold design (gate shape, type and position, number of gates), and conditions set during injection molding.
- Please conduct sufficient tests on trial production and set up each condition appropriately before use.
- Ink shelf life: 36 months from production date, unopened

Safety

UN No.: Not classified in the definition
 UN Classification: Not classified in the definition

Handling

- Use safety gloves and eyeglasses to protect skin and eyes. If the ink comes in contact with skin, wash with soap and plenty of water (or lukewarm water) and consult with a doctor.
- Containers should be closed tightly after use and stored in a cool and dark place.
- SDS is available upon request. Please request a copy and read it carefully before handling the products.

Resistance

Test Item	Test Conditions	Test results
Adhesion	JIS K 5600-5-6:ISO2409(Cross-cut),1mm Interval 6x6、cellophane tape & peel	0(no peel)
Pencil Hardness	JIS K 5600-5-4:ISO 15184(Pencil)、Weight 750g Pencil hardness (Mitsubishi Uni) which does not make scars.	F
Heat	JIS K5600-6-3:ISO 3248: 90°C、400hrs.、 check appearance and peeling from the substrate	No defect
Hot Water	JIS K 5600-6-2: ISO 2812-2, Soak 48 hrs. in 50°C hot water, check appearance and peeling from the substrate.	No defect
Acid	Soak 7 hrs. in 5% H ₂ SO ₄ , check appearance and peeling from the substrate	No defect
Alkali	Soak 7 hrs. in 5% NaOH, check appearance and peeling from the substrate	No defect
Alcohol	Gakushin scrub tester, cotton soaked ethanol, 200g weight, 50 back and forth, check peel off	No defect
Scrub	Gakushin scrub tester, cotton soaked ethanol, 500g weight, 500 back and forth, check color fade.	No defect
Falling weight test	JIS K5600-5-3, DuPont Impulse Tester, drop 500g weight from 50 cm height, check appearance.	No defect
Punching	Cut with a press machine, check cut edges.	No defect

*Test condition 【IPX-HF(LV) 979 BLACK】 【240 CATALYST 10%】 【Z-703 SOLVENT 10%】
 【90°C 60 min】 【T 300】 【Substrate: Polycarbonate sheet(0.5mm)】

*Above resistance test results are measured results in our laboratory and they are not guaranteed values.

*Information contained in this catalog may change without prior notice.

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