

INQ-HF Ink series

(Halogen-free, environmentally friendly, two pack type ink for Insert Molding)

INQ-HF ink is environmentally friendly 2 pack type ink series for film insert molding that does not intentionally use halogen compounds (chlorine Cl, bromine Br) in raw materials. INQ-HF series forms a printed ink layer with excellent flexibility and excellent heat resistance during the film insert molding process, and shows good adhesion to TPU particularly.

Application	Film insert products in general such as automobile interior, home appliance nameplates, and membrane switches.		
Special Features	<ul style="list-style-type: none"> Two pack type ink, forms a printed ink layer with excellent flexibility and heat resistance. Create decoration printed materials for film insert molding on easy adhesion treated PET film and PC (polycarbonate) sheet. By combining with IMB binder, insert molding with PMMA, ABS, PC resins, etc. is possible. 		
Substrate	TPU, Easy adhesion treated PET film, PC sheet		
Dilution	F-002 SOLVENT (fast dry), F-003 SOLVENT (standard), Z-705 SOLVENT (slow) Dilution 15 to 20% *Do not use other solvents as they may cause contamination of halogen compounds and may adversely affect curing, adhesion, stencil stability, or other properties.		
Catalyst/Promoter mixing	106 Catalyst 4% (to improve adhesion) 240 Catalyst 3% (to improve heat resistance) 220 Catalyst 5% (standard) 200 Catalyst 6% (extra soft)	Pot life 2 to 3 hrs. Pot life 4 to 5 hrs. Pot life 4 to 5 hrs. 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 3% (For anti-foam and improving leveling)		
Recommended Cleaner	Screen Solvent L2		
Mesh	T 200 to 270 mesh (Coverage would be about 35m ² /kg at 250 mesh)		
Drying	90°C 60 min	<u>Overprint</u> Each layer 80°C 10 min (tack-free) Final layer 90°C 60 min	
Standard Colors	HF000 MEDIUM HF001 VICTORIA HF169 SCARLET HF199 RED	HF249 LIGHT YELLOW HF269 REDDISH YELLOW HF399 BLUE HF529 ORANGE	HF589 MAGENTA HF679 WHITE HF829 VIOLET HF979 BLACK

Caution

- Do not use solvents and catalysts other than the designated ones because of the possibility of contamination with halogen compounds.
- 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: 24 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 and peel	0(no peel)
Pencil Hardness	JIS K 5600-5-4:ISO 15184(Pencil), Weight 750g, Pencil hardness (Mitsubishi Uni pencil) which does not make scars.	B
Heat	JIS K5600-6-3:ISO 3248: 90°C、400h、 check appearance and peel off 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 peel off from the substrate	No defect
Acid	7 hrs. in 5% H2SO4, check appearance and peel off from the substrate	No defect
Alkali	7 hrs. in 5%NaOH, check appearance and peel off 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 【INQ-HF 679 WHITE】 【F-003 SOLVENT 15%】 【220 CATALYST 5%】
 【90°C 60 min】 【T 250】 【Substrate: Polycarbonate sheet】

*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.

Created : 2022.02.10