

## INQ-HF(LV) Ink series

(Halogen Free, Environmentally Friendly 2 pack ink series for insert molding)

INQ-HF (LV) series 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 and reduces polycyclic hydrocarbons (PAHs) such as naphthalene to 500 ppm or less. INQ-HF (LV) series forms a printed ink layer with excellent flexibility and shows good adhesion to TPU particularly.

<b>Applications</b>	Film insert products in general such as automobile interior, home appliance nameplates, and membrane switches.		
<b>Special Features</b>	<ul style="list-style-type: none"> <li>Two pack type ink, forms a printed ink layer with excellent flexibility and heat resistance.</li> <li>Create decoration printed materials for film insert molding on easy adhesion treated PET film and PC (polycarbonate) sheet.</li> <li>By combining with IMB binder, insert molding with PMMA, ABS, PC resins, etc. is possible.</li> </ul>		
<b>Substrate</b>	TPU, Easy adhesion treated PET film, PC sheet		
<b>Dilution</b>	C-002 SOLVENT (fast dry), C-003 SOLVENT (standard), C-004 SOLVENT (slow) Dilution 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.		
<b>Catalyst/Promoter mixing</b>	106 Catalyst 4% (to improve adhesion)		Pot life 2 to 3 hrs.
	200 Catalyst 3% (extra soft)		Pot life 4 to 5 hrs.
	210 Catalyst 3% (standard)		Pot life 4 to 5 hrs.
	225 Catalyst 3% (soft)		Pot life 4 to 5 hrs.
	240 Catalyst 3% (to improve heat resistance)		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		
<b>Additives</b>	SM-40 DEFOAMER 1 to 3% (For anti-foam and improving leveling)		
<b>Recommended Cleaner</b>	NF-003 SOLVENT		
<b>Mesh</b>	T 200 to 350 mesh (Coverage would be about 35m <sup>2</sup> /kg at 250 mesh)		
<b>Drying</b>	90°C 60 min *Ensure sufficient drying	<u>Overprints</u> Each layer 80°C 10 min (tack-free) Final layer 90°C 60 min	
<b>Standard colors</b>	HF(LV)001 VICTORIA HF(LV)169 SCARLET HF(LV)199 RED HF(LV)249 LIGHT YELLOW	HF(LV)269 LIGHT YELLOW HF(LV)399 BLUE HF(LV)529 ORANGE HF(LV)589 MAGENTA	HF(LV)679 OPAQUE WHITE HF(LV)829 VIOLET HF(LV)979 BLACK

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**Cautions**

- 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

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**Safety**

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

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**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.

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**Resistance**

Test item	Test conditions	Test results
Adhesion	JIS K 5600-5-6:ISO2409(Cross-cut method), 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 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 warm water, Check appearance and peel off from the substrate.	No defect
Acid	Soak 7 hrs. in 5% H <sub>2</sub> SO <sub>4</sub> Check appearance and peel off from the substrate.	No defect
Alkali	Soak 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(LV)679 WHITE】 【210 CATALYST 3%】 【C-003 SOLVENT 15%】  
【90°C 60 min】 【T 250】 【Substrate: Polycarbonate sheet (Panlite)】

\*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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