

## GLS-HF(LV) Ink series

(Halogen free and environment-friendly 2 pack type ink for glass)

GLS-HF (LV) ink series is environment-friendly 2 pack type ink for glass that does not intentionally use halogen (Chlorine Cl, Bromine Br) compounds in raw materials and reduces polycyclic hydrocarbons (PAHs) such as naphthalene to 500 ppm or less.

<b>Applications</b>	Decorative printing on glass for smartphones, tablets and automotive interior display, etc..		
<b>Special Features</b>	<ul style="list-style-type: none"> <li>Halogen (Chlorine Cl, Bromine Br) compounds and naphthalene are not intentionally used in raw materials.</li> <li>A wide range of color variation enables the creation of colorful printed materials.</li> <li>It has excellent adhesion to glass and various types of resistance, and it can be used in a wide range of fields.</li> </ul>		
<b>Substrate</b>	Glass plate		
<b>Dilution</b>	Z-705 SOLVENT (slow)10% Dilution 3 to 10% *Do not use other solvents as they may cause contamination of halogen and PAHs and may adversely affect curing, adhesion, stencil stability, or other properties.		
<b>Catalyst/Promoter mixing</b>	Be sure to add 0.5% of GLS GLASS PROMOTER Pot life: 3 to 6 hrs. *The ink will not turn to gel after the pot life has expired. Due to its poor adhesion and resistance, be sure to mix only enough to use.		
<b>Additives</b>	SM-40 DEFOAMER 0 to 2% (For anti-foam and improvement in leveling)		
<b>Recommended Cleaner</b>	NF-003 SOLVENT		
<b>Mesh</b>	T 200 to 350 mesh (Coverage would be 35m <sup>2</sup> /kg at 250 mesh)		
<b>Drying</b>	160°C 30 min *Ensure sufficient drying	<u>Overprint</u> Each layer 160°C 10 min Final layer 160°C 30 min	
<b>Standard Colors</b>	HF(LV)000 MEDIUM HF(LV)001 VICTORIA HF(LV)169 SCARLET HF(LV)239 LIGHT YELLOW HF(LV)249 LIGHT YELLOW	HF(LV)399 BLUE HF(LV)589 MAGENTA HF(LV)619 WHITE HF(LV)679 WHITE HF(LV)829 VIOLET	HF(LV)919 BLACK HF(LV)939NC BLACK HF(LV)989 PIANO BLACK HF(LV)979 BLACK

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**Cautions**

- As Halogen compounds and polycyclic aromatic hydrocarbons (PAHs) may be mixed in the ink, only designated Solvents and Catalysts can be used.
  - Please check the squeegee rubber, emulsion, materials and substrates before use, as they may contain halogen compounds.
  - Checking before commercialization: Adhesion and resistance properties may change due to differences in substrates, processes, printing and drying conditions. Be sure to check the adhesiveness and resistance properties before mass production printing
  - Ink shelf life: 12 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 6×6、cellophane tape peeling, no peeling off from the substrate	0 (no peel off)
Pencil Hardness	JIS K 5600-5-4:ISO 15184(pencil)、weight 750g Pencil hardness which does not make scar.	2H
Heat	80°C、1000 hrs.、Check appearance and peel from the substrate	No defect
Hot water	JIS K 5600-6-2:Soak in 60°C hot water for 72 hrs.、Check appearance & peel from the substrate	No defect
Humidity	60°C,95%RH 1000 hrs.、Check appearance & peel from the substrate	No defect
Boiling water	Soak in boiling water for 24 hrs.、Check appearance & peel from the substrate	No defect
Scrub	Gakushin scrub tester, with cotton, 500g weight, 1000 back and forth, check color fade	No defect
Accelerated weathering	(Xenon lamp) Weather meter, 1000 hrs., BP temp. 63+/-3°C:Rain rate 18 min/120 min、check color fade and peeling off	No defect

\*Test conditions 【GLS-HF(LV)919 BLACK】 【GLS GLASS PROMOTER 0.5%】 【T 250】  
【Z-705 SOLVENT 10%】 【160°C 30 min】 【Substrate: GLASS PLATE】

\*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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