

Technical Report

New Product

No.129
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INQ Ink Series

(Non-toxic and low odor 2 pot IMD ink)

INQ Ink series are 2 pot insert molding decoration (IMD) inks, which do not contain toxic solvents such as benzene, toluene, xylene and isophoron and which have little odor. The inks are suitable for IMD, which is widely used for nameplates, car parts and cell phones, because these inks have good adhesion when printing on PET and polycarbonate film. INQ Inks are soft and flexible, and have good heat-resistance.

1. Special Features

(1) Toxicity.

The inks do not contain toxic solvents such as benzene, toluene, xylene and isophoron, or other organic solvents which are restricted and controlled by PRTR and industrial safety and health laws. Additionally the inks use only substances registered in TSCA and EINECS.

(2) Low odor.

The inks have low odor and are easy to handle and do not have an adverse effect on air quality under shop conditions.

(3) Good flexibility.

The INQ Inks have better flexibility and elongation than IPX Inks which are introduced in Technical Report # 128. They are suitable for vacuum forming, press forming and when the product requires more depth in form than is available with IPX inks.

(3) IMD suitability.

INQ Inks are especially suitable to insert molding decoration using IMB 003 Binder and IMB 009 Binder, and injection resins such as polycarbonate, PC/ABS resin alloy, ABS, AS, PMMA.

2. Applications

Suitable to IMD/FIM molding, with pattern printing on PET or polycarbonate film. IMD/FIM is a popular manufacturing method to make insert decoration parts for cell phones, displays and car parts.



3. Standard Colors

000 Medium	001 Victoria	168 Scarlet	182 Red	246 Light Yellow
263 Reddish Yellow	391 Blue	519 Orange	581 Magenta	675 White
791 Green	821v Violet	971 Black		

Metallic, pearl, fluorescent, phosphorescent and other functional inks are available. Color matching is also available. Please do not hesitate to contact us.

4. Printing Conditions

(1) Stencil: T200-270 mesh

(2) Thinning:

10-15% of the weight with F-003 solvent. We offer other solvents depending on the shop conditions as follows; F-002 Solvent (Fast Dry), F-003 Solvent (Standard), Z-705 (Slow Dry). Other solvents should not be used or else insufficient adhesion may occur.

(3) Catalyst:

Before printing, add 5 parts of 220 Catalyst to 100 parts ink, and stir well.

If you need good heat resistance, use 3 parts of 240 Catalyst.

Pot life is about 4-5 hours at room temperature. (25 degrees C)

(4) Drying:

Must be heat dried. 10 minutes at 80 degrees C is good for tack free dryness.

Final drying should be done 60 minutes at 90 degrees C after the IMB Binder has been printed.

5. Caution

In insert molding decoration, all the factors such as substrate and ink for pattern printing, printing conditions, sequence of printings, drying conditions, pre-forming conditions, molding resin, design of the mold (type, position and number of the gate) and injection conditions may affect the quality of the finished product. Preliminary testing under actual conditions before a commercial run is strongly recommended.

6. Weather Resistance

Test Item	Test method	Test Results
Hot water	JIS K 5600-6-2: ISO 2812-2, dip 48 hours in 40 degrees C hot water, check appearance.	No defect
Heat	ISO 3248: 400 hours in 80 , check appearance.	No defect
Cold and heat cycle.	-40 2.5hours 2.5 hours at room temp 2.5 hours at 90 2.5 hours at room temperature, 10 cycles and check appearance	No defect

Specimen: Cut at the middle of a test panel formed with polycarbonate resin, then check.

Test condition: Substrate : easy print PET sheet (Higashiyama HK3 1WF).

Ink : INQ-675White, 155 thinning with F-003 Solvent, add 220 Catalyst at 5%

Printing : T-250 mesh 60 minutes at 90 Box drying.

Store 24 hours at room temperature and after test was done.

These data are for our lab purposes only and we do not guarantee the results.

If you want further detailed data, please do not hesitate to contact us.

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