

English Version (Japanese Translation)

screen ink

Reactive ink

general printing | Two-component reaction type

FM Ink 3100 Series

This is a low-temperature curing two-component reactive ink.

It can be used for printing general-purpose plastics and films that cannot be dried at high temperatures, making

it suitable for applications requiring high physical properties such as heat resistance and solvent resistance in post-processing and film properties.

Product Features

- It bonds to a wide range of materials.
- Cures at low temperatures of 70~80° C.
- It has excellent heat resistance, chemical resistance, and solvent resistance.
- It offers long usable life, excellent onboard stability, and good workability.

Features

post-processing

printability

Onboard stability

Adhesion

low-temperature hardening property

Endurance

heat resistance

Chemical resistance

solvent resistance

Recommended Printed Materials

Material

Vinyl

Rigid Vinyl [PVC]

Rigid PVC Home Appliances

Rigid PVC Nameplate

General plastic

Acrylic [PMMA]

Acrylonitrile Butadienestyrene [ABS]

Plastic

general-purpose plastic

General-purpose plastic nameplate

Polycarbonate [PC]

PC and Home Appliances

PC Nameplate

polyester-based

Treated Polyethylene Terephthalate [PET]

Treated PET Film

Final product

Home appliances

Nameplate

Post-processing and secondary processing

Insert molding

In-mold molding

Finish, Texture, and Visual Effects

finish

gross

Color & Grade

Standard Colors (Standard Colors)

 00 Medium	 01 White	 02 Yellow	 03 Green and Yellow	 08 Red	 16 Pink	 25 Purple	 28 Orange
 45 Dark Blue	 46 Blue	 75 Green	 85 Ultramarine				

Standard Colors (Weather-Resistant Colors)

 06 Cinnabar	 13 Qing Huang	 14 Yellow	 18 Red	 87 Ultramarine
---	---	---	--	--

Specifications

Lotus form	Accessories
1kg Ink Can	FM hardener (100g metal can) Curing Accelerator JA-E111 (50g metal can)

How to use

- Add diluting solvents and curing agents to the ink, stir well, and print.
 - Dilution solvent: 10~30 parts per 100 parts of PC solvent (standard, slow-drying, retarder) ink
 - Curing agent: FM curing agent, 10~15 parts per 100 parts of ink
- The usage time is about 8 hours (room temperature).
- If you want to improve the ink's heat resistance and solvent resistance, add 2~4% curing accelerator JA-E111.
When added, the usable time is as follows.
 - Additive 2%: About 6 hours
 - Additive 4%: about 4 hours

print edition

Types of Editions	Cleaning	Recommended Printing Film Thickness
photographic plate	Vinyl cleaning solvent	thick

Curing Method & Conditions

Evaporative Drying Conditions

Dry fingertips	hardening drying	fully cured
• About 10~30 minutes (room temperature)	• 70° C for 30 minutes • 80° C 20 minutes It can cure even below this temperature, The drying time will be longer.	• About 4~6 days (room temperature)

Test data (environment, physical properties, weather resistance, performance, etc.)

Conditions	
Ink	FM Ink 3101 White FM Ink 3108 Red FM Ink 3190 Black
hardener	Add 10% to each
diluent solvent	PC Standard Solvent
print edition	250 mesh
base material	125 μ m treated PET film (HK-31WF manufactured by Higashiyama Film Co., Ltd.)
printing	Red→ black→ white, three layers of layering
dry	Process: Dry at 80° C for 10 minutes Final drying at 80° C for 20 minutes After drying, leave it at room temperature for one day

Results

Test Items	Test Method	Results
Adhesion	Cross-Cut Cellotape Release Test	100/100 No peeling
hardness	Pencil hardness test	2H
impact resistance	DuPont Impact Tester φ 1/2in、 500g、 30cm	No cracks or peeling
blow resistance	Cutting by punching	No cracks or peeling
heat resistance	80° C 24 hours	No abnormalities
cold resistance	-40° C 24 hours	No abnormalities
water resistance	24 hours in 40° C warm water	No abnormalities
moisture resistance	60° C 95% RH 96 hours	No abnormalities
heat cycle	80° C -30° C, 2 hours each time, 10 cycles	No abnormalities
solvent resistance	Rubbing test using acupressure (about 500g) with solvent	Ethyl alcohol 100 times: No abnormalities Toluene 50 times: No abnormalities Regular gasoline 100 times: No abnormalities MIBK 20 times: No abnormalities Ethyl acetate 5 times: No abnormalities
acid resistance	H ₂ SO ₄ 5% aqueous solution, soaked for 24 hours	No abnormalities
Alkali resistance	NaOH 5% aqueous solution, soaked for 24 hours	No abnormalities
Chemical resistance	Immersed in the Chemical Solution for 24 Hours	Chlorine-based bleach (KitchenHaite): No abnormalities Oxygen-based bleach (Wide Haite): No abnormalities Laundry detergent (bonus): No issues Neutral detergent (Mama Lemon): No issues Furniture detergent (Magiclean): No issues Hand cream (Nivea): No abnormalities

Weather Resistance List

Grade	color name
6	3102 Yellow 3103 Qinghuang 3118 Red 3185 Ultramarine
7	3100 Medium 3101 White 3108 Red
7-8	3106 Golden Red 3113 Qing Huang 3114 Yellow 3116 Pink 3125 Purple 3128 Orange
8	3145 Dark Blue 3146 Blue 3175 Green 3187 Gunqing 3190 Black

- When ink is diluted with medium or white ink for printing, its weather resistance drops significantly compared to the primary colors.

Notes

- Since hardeners and curing accelerators react with moisture and harden, always keep containers closed. When storing, seal tightly and store in a cool, dark place.
- Even after the usable time expires, it remains fluid for 30~40 hours and can be printed, but the film properties will decrease, so please avoid using it.
- For safety precautions when using the product, please refer to the product's Safety Data Sheet (SDS).
- The contents provided in this information may be changed or revised without prior notice.
- This characteristic data is based on the evaluation results conducted by our company and does not guarantee the product's characteristics during customer use.
- When using the device, please thoroughly consider the conditions based on the evaluation results of the equipment and substrate actually being used.