

# Technical Report

New Product

No.131

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## MRX Ink

( Isophoron-free, Two Pack Screen Ink for Hard Coated Plastics )

MRX Ink has good adhesion to hard-coated plastics, which are widely used for cell phones and electrical appliances. It is also suitable in post-forming processes such as cutting, etc. MRX Ink is environmentally-friendly, i.e. it is free of environmentally harmful substances such as benzene, toluene, xylene and isophoron.

### 1. Special Features

- (1) Environmentally-friendly.

This ink does not include environmentally controlled substances such as benzene, toluene, xylene and isophoron. All raw materials are registered in TSCA and EINECS.

- (2) Excellent adhesion onto hard coated plastics.
- (3) Suitable for post-forming processes such as cutting.

### 2. Applications

Windows of cellular phones, audiovisual appliances and portable game devices.

On hard-coated acrylic and polycarbonate plates.



### 3. Standard colors

000 Medium	001 Victoria	037 Royal Blue	121 Scarlet	161 Scarlet
177 Red	182 Red	221 Yellow	230 Light Yellow	246 Light Yellow
277 Reddish Yellow	391 Blue	577 Orange	581 Magenta	611 White
791 Green	794 Yellow	821 Violet	912 Black	

Functional inks, metallic inks and pearl inks are available by request.

### 4. Printing conditions

Stencil	180-300 mesh
Thinning	15-20% with Z-004 Solvent. G-001 (Very fast drying), G-002 (Fast drying), and G003 (Standard) are also available depending on shop conditions.
Catalyst	Add 210 Catalyst 5% and mix well. When printing 000 Medium, add 6%. Pot life is 8 hours. To get faster curing, add 10% of 106 Catalyst. Pot life is 3 hours under these conditions.
Drying	Must be heat-dried. Tack free condition will be achieved with 20-30 minutes drying time at room temperature. Final drying must be done 30 minutes at 80 degrees C. Can be adjusted between 70 to 100 degree C, and 30 to 60 minutes.

### 5. Cautions

Drying and adhesion will be affected by drying temperature, drying time, substrate (type, grade and pretreatment of), etc. Please select suitable conditions.

If ink is not dry enough, blocking might occur. Stacking should be done after checking for sufficient drying and acceptable resistance.

Shelf life will be at least one year after shipment.

Substrate, printing sequence, printing conditions and drying conditions may affect the adhesion and resistance. Preliminary testing must be done at your site under your actual conditions before start of commercial runs.

## 6. Resistance

Items	Test Conditions	Results
Adhesion	JIS K 5600-5-6 (Cross-cut): ISO 2409: 1mm interval 6X6 cuts, cellophane tape and peel	No peel
Scratch	JIS K 5600-5-4 (Pencil): ISO/DIS 15184: 750g weight, Hardness of the pencil, which does not cause scarring.	3H
Nail	Nail peel test	No peel
Heat	80°C, 168 hrs, check appearance and peeling from the substrate.	No defect
Hot water	JIS K 5600-6-2 : ISO 2812-2 : Immerse in 60°C warm water for 168 hours, check appearance & adhesion	No defect
Moisture	JIS K 5600-7-2 : 50°C, 95%RH, 168 hrs. Check appearance and peeling off from the substrate.	No defect
Scrub	Gakushin scrub tester, with cotton, 500g weight, 1000 back and forth, check color fade.	No defect
Weather	Weather meter (Xenon), 600 hr, Black panel temp. 63+/-3°C, raining 18/120min, check appearance and peel.	Delta E<5
Light fastness	Fade meter (carbon arc), 1000 hrs, black panel temp. 63+/-3°C, rain rate 18min/120min , check appearance & peeling.	Delta E<2

Specimen conditions: Substrate: Hard-coated acrylic resin (Mitsubishi Rayon MR-200)

Ink: Teikoku MRX 912 Black. (210 Catalyst 5%, Z-004 Thinner 15%). Drying: 30 minutes at 80°C.

Note. To obtain more detailed data, please contact our representative.

These test results are only for our lab purposes. We do not guarantee the results.

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