

H638 Series — High Opacity Plastic Ink



TECHNICAL DATA SHEET

1. Product Description

H638 is a glossy, single-component, low-odor aromatic solvent-based ink developed for high-opacity printing on plastic substrates. It is suitable for screen printing and pad printing.

It delivers excellent hiding power, strong color intensity, smooth printing performance, and reliable adhesion, making it ideal for bright and vivid graphics on black or dark-colored plastics.

2. Recommended Substrates & Applications

Recommended for rigid and flexible PVC, PMMA, ABS, PC, and PS.

Typical applications include plastic nameplates, control panels, toys, electronic housings, and molded plastic components requiring improved wear and chemical resistance.

3. Key Features

- High opacity for excellent coverage on black and dark-colored plastics
- Excellent color strength and vivid print appearance
- Smooth printing performance with good leveling properties
- Reliable adhesion on common plastic substrates
- Suitable for screen printing and pad printing applications
- Good reproduction of fine lines, text, and solid graphics

4. Printing Instructions

1. Remove dust, oil, mold-release residue, and other contaminants from the substrate before printing.
2. Stir the ink thoroughly before use. Select S-8 Fast-Drying Thinner, S-6 Medium-Drying Thinner, or S-9 Slow-Drying Thinner according to ambient temperature, printing speed, and image requirements.
3. If fine lines or text show spreading, feathering, or blurred edges, add the recommended slow-drying additive in a controlled amount.

Recommended screen mesh: 80–120T. Select the final mesh count based on ink deposit, artwork, and printing conditions.

5. Allow the printed ink film to fully cure before final performance evaluation. Air dry for 24 hours at room temperature, or oven cure at 80°C for 30 minutes.

5. Precautions & Storage

1. Always conduct a production trial before mass printing. Adhesion, drying, appearance, and resistance may vary with substrate grade, surface treatment, additives, and molding conditions.
2. Typical thinner addition is 20–30%. Adjust viscosity according to actual printing conditions and the working environment.
3. Drying time varies with substrate, ink-film thickness, temperature, and ventilation. Confirm the appropriate drying conditions before production.
4. Flammable product. Keep the container tightly closed and store in a cool, well-ventilated area away from heat, sparks, and open flames.
5. Use appropriate personal protective equipment. Avoid skin and eye contact. If the product enters the eyes, rinse immediately with plenty of water and seek medical attention.
6. Shelf life is 12 months from the date of manufacture in unopened original packaging. Re-test suitability before using expired material.

6. Technical Reference Data

Test Item	Result	Test Method / Condition
Ink Fineness	$\leq 12 \mu\text{m}$	Grind gauge
Dry-Film Gloss	$\geq 65 \text{ GU}$	60° gloss meter
Surface Drying	Hot air: 40–60°C (Recommended: 50°C)	Reference drying condition
Full Drying	Air dry for 24 hours, or oven cure at 80°C for 30 minutes	Reference drying condition
Alcohol Resistance	No visible change	500 g load; 500 double rubs with an alcohol-saturated cotton pad
Adhesion	100/100 squares retained	1 mm × 1 mm, 100-grid cross-cut; 3M tape peel
Acid Resistance	No visible change	5% HCl immersion for 24 h
Alkali Resistance	No visible change	5% NaOH immersion for 24 h
Salt-Water Resistance	No visible change	5% NaCl immersion for 24 h
Water Resistance	No visible change	Tap-water immersion at 20°C for 96 h
High Opacity	No substrate exposure	500 g load; 500 double rubs with an abrasive eraser
Heat Resistance	No visible change	80°C for 12 h

Note: Performance data is based on internal laboratory tests and may vary depending on substrate and application conditions. Please conduct a trial test before mass production.

7. Compliance Information

Standard colors in this series can be supplied to meet applicable RoHS, REACH, PAHs, and EN 71-3 requirements. Confirm the required regulation, test method, color, and market before ordering; supporting test reports are available for selected products upon request.

8. Important Notice

The information in this document is based on internal reference testing and is provided as technical guidance only. Because substrate grades, printing conditions, film thickness, drying, and end-use requirements vary, users must verify suitability through their own trials before production.