

H1012UV Series — UV Glass & Plastic Ink



TECHNICAL DATA SHEET

1. Product Description

H1012UV is a high-gloss, single-component, solvent-free UV-curing screen printing ink developed for glass, UV-coated surfaces, and selected plastic substrates.

It provides rapid UV curing, smooth printing performance, excellent color coverage, good adhesion, and resistance to abrasion, alcohol, and common chemicals after full curing.

2. Recommended Substrates & Applications

Recommended for glass, UV-coated surfaces, ABS, PC, PMMA, PVC, and other compatible plastic or coated substrates.

Typical applications include glass decorative components, UV-coated panels, appliance panels, electronic housings, nameplates, and molded plastic components.

Note: Surface compatibility should be confirmed before production, especially for glass and coated surfaces, as surface treatments and coating formulations may significantly affect adhesion.

3. Key Features

- Solvent-free, single-component UV-curing system
- Designed for screen printing applications
- High-gloss finish with excellent color coverage
- Rapid UV curing for efficient production
- Good adhesion on compatible glass, UV-coated, and plastic substrates
- Good resistance to abrasion, alcohol, and common chemicals after full curing

4. Printing Instructions

1. Remove dust, oil, mold-release residue, and other contaminants from the substrate before printing.
2. Stir thoroughly before use. If viscosity adjustment is required, add C-6 UV Reducer in a controlled amount according to printing conditions.

3. Avoid unnecessary dilution because excessive reducer may reduce opacity, cure speed, and final resistance.

4. Recommended screen mesh: 100–150T. Select the final mesh count according to ink deposit, artwork, and curing capability.

5. Cure with a suitable UV mercury lamp curing system according to the recommended UV curing reference. Multiple UV passes may be required depending on color, ink-film thickness, substrate, and equipment conditions.

4A. UV Curing Reference

1. Use a suitable UV mercury lamp curing system with sufficient UV energy output to achieve complete curing.

2. Recommended UV energy:

Approximately 600–1,200 mJ/cm², depending on color, ink film thickness, UV equipment, and production conditions.

Color and curing reference:

Light colors and clear coatings: approximately 600 mJ/cm² may be sufficient.

Dark colors (such as black and blue): approximately 800–1,200 mJ/cm² may be required due to stronger UV absorption.

3. Curing adjustment recommendations:

For thick ink films or heat-sensitive substrates, reduce UV power and extend curing time to prevent substrate deformation or overheating.

4. If complete curing is not achieved:

Increase UV energy output;

Reduce conveyor speed;

Increase UV exposure time;

Apply multiple UV curing passes.

equipment conditions:

Final curing parameters should be validated according to lamp type, UV intensity, conveyor speed, color, opacity, and ink film thickness.

5. UV lamp maintenance:

UV lamp intensity gradually decreases during operation. Replace lamps or verify UV output when curing performance decreases.

6. Adhesion and curing verification:
- If poor adhesion occurs after UV curing, check:
 - UV energy and curing completeness;
 - Substrate cleanliness;
 - Surface treatment or coating compatibility;
 - Ink-film thickness.

5. Precautions & Storage

1. Always conduct a production trial before mass printing. Adhesion and curing may vary with substrate type, glass surface condition, coating formulation, surface treatment, UV intensity, line speed, color, and ink-film thickness.
2. This UV ink does not air dry. Protect uncured ink and printed parts from daylight, sunlight, and unintended UV exposure.
3. Store tightly sealed in a cool, dry, dark place away from strong light and heat sources.
4. Use UV-blocking eye protection, suitable gloves, protective clothing, and adequate ventilation. Avoid skin and eye contact with uncured ink.
5. 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 curing and performance before using expired material.

6. Technical Reference Data

Test Item	Result	Test Method / Condition
Ink Fineness	$\leq 15 \mu\text{m}$	Grind gauge
Dry-Film Gloss	$\geq 80 \text{ GU}$	60° gloss meter
Air Drying	Does not surface dry	UV-curing system; protect from ambient UV light
Full Cure	After UV exposure	Reference dose: 800–1,200 mJ/cm ²
Alcohol Resistance	No visible change	500 g load; 1000 double rubs with an alcohol-saturated cotton pad; internal reference test
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
Abrasion Resistance	No substrate exposure	500 g load; 2,000 double rubs with an
RCA Abrasion	No substrate exposure	20 cycles on RCA paper-tape abrasion

Gasoline Resistance

No visible change

500 g load; 500 double rubs with a gasoline-saturated cotton pad; internal reference test

Note: Performance data is based on internal laboratory testing under reference UV-curing conditions. Actual results may vary depending on substrate type, surface treatment, coating system, ink color, ink-film thickness, UV energy, and curing conditions. Substrate compatibility and performance should be verified 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. Halogen-related and other regulatory claims must be confirmed against the current test report for the selected color and target market.

8. Important Notice

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