

H1014UV Series — UV Ink for Treated Plastic Bottles & Containers



TECHNICAL DATA SHEET

1. Product Description

H1014UV is a UV-curing screen printing ink developed for surface-treated plastic bottles and containers. It is particularly suitable for plasma-treated PP, HDPE, PETG, and other compatible plastic substrates.

It provides strong adhesion, fast UV curing, good color performance, and excellent resistance to alcohol, 3M tape peeling, and cosmetic creams after complete curing. It is suitable for multicolor automatic and semi-automatic screen printing applications.

2. Recommended Substrates & Applications

Recommended for plasma-treated PP, HDPE, PETG, and other compatible surface-treated plastic substrates.

Typical applications include cosmetic bottles, personal-care packaging, household chemical bottles, plastic containers, jars, and other decorated plastic packaging.

Note: PP, HDPE, and other low-surface-energy substrates require proper surface treatment before printing. As a general reference, a surface tension of approximately 40 dyn/cm or above is recommended for PP/PE substrates. Substrate compatibility and treatment effectiveness must be confirmed before mass production.

3. Key Features

- UV-curing screen printing system
- Strong adhesion on properly surface-treated plastics
- Fast UV curing
- Excellent alcohol resistance
- Excellent 3M tape and cosmetic cream resistance
- Good color performance; suitable for multicolor automatic and semi-automatic screen printing

4. Printing Instructions

1. Stir the ink thoroughly before use. Remove dust, oil, mold-release residue, and other contaminants from the substrate before printing.
2. PP, HDPE, and other low-surface-energy substrates must be properly surface-treated before printing. Plasma treatment is recommended for H1014UV applications. As a general reference, PP/PE surfaces should reach approximately 40 dyn/cm or above before printing.
3. Recommended screen mesh: approximately 250–350 mesh. Final mesh selection should be adjusted according to artwork, ink deposit, substrate, and production requirements.
4. If viscosity adjustment is required, use only a compatible UV reducer in a controlled amount. Excessive dilution may reduce curing speed and final performance.
5. Cure immediately after printing using a suitable UV curing system. Ensure complete curing before evaluating adhesion, alcohol resistance, tape resistance, or cosmetic cream resistance.
6. Final printing and curing parameters should be confirmed through production trials before mass production. Refer to Section 4A for curing reference conditions.
7. For treated PP, HDPE, PETG, or other compatible substrates, confirm surface-treatment effectiveness and adhesion before mass production.

4A. UV Curing Reference

1. H1014UV requires sufficient UV energy to achieve complete curing. A UV mercury lamp curing system is used as the current application reference.
2. Reference curing condition from the supplied application data:
Approximately 3000 W UV mercury lamp with a conveyor speed of about 10–15 m/min.
These values are process references rather than fixed H1014UV specifications; final conditions must be validated on the actual production line.
3. Actual curing performance depends on ink color, ink-film thickness, lamp intensity, conveyor speed, substrate, and equipment conditions. Dark colors and high-opacity prints may require greater UV exposure than light colors.

4. If complete curing is not achieved:

Increase UV exposure;

Reduce conveyor speed;

Increase exposure time; or

Apply additional UV curing passes.

Avoid excessive UV exposure, particularly when subsequent overprinting is required.

5. UV lamp intensity gradually decreases during operation. Verify UV output or replace the lamp when curing performance decreases.

6. Confirm complete curing before adhesion and resistance testing. If poor adhesion occurs, check surface cleanliness, surface-treatment effectiveness, curing completeness, ink-film thickness, and substrate compatibility.

5. Precautions & Storage

1. Always conduct a production trial before mass printing. Adhesion and curing may vary with substrate grade, surface condition, plasma-treatment effectiveness, 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. Keep the container tightly closed after use and store in a cool, dry, dark place away from strong light and heat sources.

4. Use suitable personal protective equipment 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. Storage temperature and shelf life have not been confirmed in the supplied H1014UV information. Refer to the confirmed product label or SDS before release.

6. Technical Reference Data

Test Item	Result	Test Method / Condition
Printing Process	Screen Printing	Automatic or semi-automatic screen printing
Recommended Substrates	Surface-treated PP, HDPE, PETG	Other compatible treated plastic substrates may be evaluated
Surface Treatment	Required for low-surface-energy substrates	Plasma treatment recommended; general PP/PE reference: ≥ 40 dyn/cm
Screen Mesh	Approx. 250–350 mesh	Adjust according to artwork, ink deposit, and production conditions
Curing System	UV mercury lamp	Current application reference
Reference Curing Condition	Approx. 3000 W; 10–15 m/min	Reference from supplied application data; validate on actual line
Adhesion	Strong adhesion	On properly surface-treated compatible substrates
Alcohol Resistance	Excellent resistance	Specific H1014UV test condition not yet confirmed
3M Tape Resistance	Excellent resistance	Specific tape grade / peel condition not yet confirmed
Cosmetic Cream Resistance	Excellent resistance	Specific cream / exposure condition not yet confirmed
Color Performance	Good	Visual / application reference
Water / Detergent / Salt-Water / Hardness	To be confirmed	Reference test methods are available from the supplied UVP-series data; H1014UV results not yet confirmed

Note: H1014UV performance data shown above includes confirmed product positioning and process references derived from the supplied application information. Numerical performance results not specifically confirmed for H1014UV have not been added. Actual results may vary with substrate grade, surface treatment, ink color, ink deposit, UV output, and curing conditions. Verify suitability before mass production.

7. Compliance Information

Compliance claims for H1014UV should be confirmed against the current SDS, test report, selected color, and target-market requirements before release.

8. Important Notice

The information in this document is provided as technical guidance based on the currently supplied product and application information. Because substrate grades, surface treatments, UV equipment, ink-film thickness, printing conditions, and end-use requirements vary, users must verify suitability and curing through their own production trials before mass production.