

Technical Data Sheet: Hydroquinone Test Kit

Product Code: SS-HQ-01

Brand: SURE Scientific

Application: Dual-validation screening for illegal hydroquinone in skin-whitening and freckle-removal products.

1. PRODUCT OVERVIEW

The **SURE Scientific Hydroquinone Test Kit** is an advanced, rapid screening tool engineered for the qualitative detection of prohibited hydroquinone in cosmetic creams and lotions. Recognizing that complex cosmetic matrices often cause false alarms, this kit utilizes a dual-validation testing architecture. By requiring two independent chemical indicators to react positively before confirming a result, it ensures exceptional field selectivity for consumers, vendors, and regulatory health officers.

2. KEY FEATURES

- **Dual-Validation Accuracy:** Employs two distinct, independent colorimetric verification steps (Test A and Test B) to virtually eliminate false positives caused by cosmetic base interference.
- **Rapid Turnaround:** Yields sharp, rapid visual reactions, validated to provide complete field readouts within 1–2 minutes.
- **Optimized Capacity:** Configured to accommodate multi-sample screening workflows, providing matching materials for up to 20 independent sample evaluations per kit package.
- **Ambient Field Deployment:** Zero laboratory equipment, centrifuges, or external electrical power required; built entirely for on-site operation.

3. KIT COMPONENTS

Each kit package contains the necessary materials to execute 20 dual-validation assays:

- **Test Reagent A (1 Dropper Bottle):** A proprietary indicator solution calibrated for the primary colorimetric complexation step.
- **Test Reagent B (1 Dropper Bottle):** A separate proprietary formula acting as the secondary verification mechanism.
- **Test Vessels (20 pieces):** Disposable plastic polystyrene spoons designed for clean sample containment and mixing.
- **Standard Color Chart:** A high-contrast gradient reference scale printed directly on the exterior envelope packaging.
- **Instruction Manual:** Step-by-step user guide for field operation.

4. TECHNICAL SPECIFICATIONS

Parameter	Specification
Detection Method	Colorimetric Dual-Validation (Visual Color Development)
Limit of Detection (LOD)	~100 mg/kg (ppm) or 0.01% w/v
Testing/Reaction Time	1-2 minutes
Kit Capacity	20 samples per kit (Dual tests per sample)
System Validation	Requires dual positive correlation (Both Test A + Test B)
Sample Matrix	Whitening creams and anti-freckle lotions
Operating Temperature	20-35 °C (Ambient)
Storage Temperature	2–8 °C (Keep refrigerated for optimal reagent shelf-life)
Shelf Life	12 months from manufacture (at 2-8 °C, unopened)

5. INSTRUCTIONS FOR USE

Note: Test A and Test B must be performed separately on independent sample locations.

1. **Sample Collection:** Place a pea-sized scoop of the cosmetic cream sample into a provided test spoon. Prepare a second spoon identically for the parallel validation test.
2. **Reagent Addition:**
 - To the first spoon, add exactly 1 drop of **Test Reagent A**.
 - To the second spoon, add exactly 1 drop of **Test Reagent B**.
3. **Mixing:** Separately mix each reagent into its respective cream matrix using the tip of a clean sampling tool for 10–20 seconds.
4. **Incubation:** Allow both test mixtures to stand at ambient temperature for 1–2 minutes.
5. **Evaluation:** Evaluate the colors simultaneously against the standard color chart on the envelope.

6. RESULT INTERPRETATION

For an accurate assessment, results from both Test A and Test B must be correlated together under natural light or a bright white LED light source:

- **NEGATIVE:** No significant color change is observed in either test, OR only one of the tests shows color development while the other remains unchanged. If a dual match is not achieved, hydroquinone is either absent, below the detection limit, or localized matrix components are interfering.
- **POSITIVE:** Both tests develop their signature color vectors simultaneously:
 - **Test A** transitions distinctly to a clear **Blue-Gray** color.
 - **Test B** transitions distinctly to a clear **Dark Brown** color.

A concurrent development of both Blue-Gray (A) and Dark Brown (B) indicates a confirmed presumptive positive for illegal hydroquinone contamination.
- **The Dual-Validation Mandate:** Never log a sample as positive if only one of the solutions changes color. The cross-checked architecture is what guarantees the high specificity of the SURE Scientific brand.

7. STORAGE AND STABILITY

- **Transport Status:** Stable at ambient temperatures during standard shipping transit windows.
- **Long-Term Storage:** Keep refrigerated at 2–8°C immediately upon arrival. Do not freeze.
- Keep away from direct sunlight and extreme heat to prevent reagent degradation.
- Ensure the caps of Reagent bottles are tightly sealed immediately after use to prevent evaporation and air oxidation.

8. SAFETY AND HANDLING

- **First Aid:** In case of skin or eye contact, rinse immediately with plenty of water. If irritation persists, seek medical advice.
- **Disposal:** Dispose of used test spoons and chemical waste in accordance with local environmental regulations.

9. LIMITATIONS AND LEGAL DISCLAIMER

- **Presumptive Screening Only:** This kit serves exclusively as a qualitative screening tool for preliminary on-site detection. It is NOT a confirmatory analytical device, a quantitative validation tool, or legally binding evidence of contamination.
- **Required Action Compliance:** Do not execute legal penalties, destroy commercial inventory, or publicly accuse suppliers based solely on these screening outcomes. Any positive dual-validation result must be independently verified by a certified testing laboratory utilizing definitive instrumentation such as High-Performance Liquid Chromatography (HPLC) or GC-MS before taking regulatory actions.
- **Liability Limitation:** SURE Scientific's corporate liability is rigorously restricted to product replacement or a direct refund of the kit's purchase price. The manufacturer explicitly assumes no responsibility for external health events, operational revenue losses, or legal liabilities arising from field testing activities.

MANUFACTURER INFORMATION

SURE Scientific Co., Ltd.

Contact/Support: www.facebook.com/mercurytestkit