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H2HUBB Official Test Report

Evaluation Introduction

Our report summarizes our analysis of the Longevity Couture: UltraHy™ - Molecular Hydrogen Water Bottle offered by the company Ultrahealth Technologies LLC. H2HUBB classifies this device as a high-pressure (psi) H₂ water portable system. The device features a PEM/SPE membrane to ensure H₂ gas production regardless of source water conductivity (TDS). Its session time-frame or cycle time-frames are 5 minutes and 10 minutes. We evaluated the system's dissolved hydrogen performance at 5 and 10 minutes. The unit contains a 3.7 V +1800 mAh battery, as stated by the battery specs. Our investigation was to analyze whether the product would meet our H₂ product performance standards, which must be achieved to be approved and recommended by H2HUBB. To learn more about our H₂ performance standards for hydrogen water bottles, visit [H2HUBB](https://www.H2HUBB.com).

H₂ Products

- Company: Ultrahealth Technologies LLC
- Product Name: UltraHy™ - Molecular Hydrogen Water Bottle
- Type: High-Concentration H₂ Water Device
 - PEM/SPE
 - Portable hydrogen water generator
 - High-PSI bottle
- Model: UltraHy
- URL Link: <https://longevity-couture.com>

Method and Procedure

- Distilled water: 6.0 pH (verifies that unit can function with low water conductivity)
- ΔpH (delta pH): Did not increase
- Water Temperature: 65~70°F / 18~21°C
- Bottle Vol Size: 0.280 L or 280 mL
- Cycle Time Frame:
 - 5-minutes
 - 10-minutes
- Contamination Tests:
 - Chlorine generation (Cl₂)
 - Ozone Generation (O₃)
- Test Location: 277 meters (909 ft elevation)
- Test Methodology:
 - Titration: H₂Blue® Test Reagent
- All Dissolved H₂ Concentration Tests Converted to SATP (water temp and pressure)
- Claimed Dissolved H₂ mg/L: 4.0-6.0 mg/L (post 5~10 minutes)

Test Results

To measure the dissolved hydrogen gas concentration of the bottle, we filled it with distilled water up to the base of the threads. The lid was then securely fastened, and the bottle was activated using either the 5-minute or 10-minute hydrogen generation setting. All measurements were conducted using the H₂Blue testing method. Multiple tests were performed to ensure accuracy, and the results were averaged to determine the bottle's performance. While our primary emphasis is on the average dissolved hydrogen concentration, peak concentration values are also included to provide a comprehensive analysis of the bottle's capabilities.

H₂ Concentration at SATP:

- 5-mins avg mg/L (ppm): \cong 2.60 mg/L (ppm); SD: 0.32
- 10-mins avg mg/L (ppm): \cong 5.50 mg/L (ppm); SD: 0.26

Peak H₂ Concentration at SATP:

- 5-mins peak mg/L (ppm): \cong 3.10 mg/L (ppm)
- 10-mins peak mg/L (ppm): \cong 5.70 mg/L (ppm)

Avg H₂ mg Produced in Designated Vol:

- 5-mins: \cong 0.73 mg (\cong 8.83 mL Dissolved)
- 10-mins: \cong 1.54 mg (\cong 18.70 mL Dissolved)
- **Claimed H₂ mg/L (ppm) confirmed:** Yes

H₂HUBB Hydrogen Concentration Assessment

- According to our testing, the UltraHy™ - Molecular Hydrogen Water Bottle exhibits a dissolved molecular hydrogen concentration of 2.60 - 5.50 mg/L (ppm) throughout its cycle durations of 5 and 10 minutes, with a peak H₂ concentration of nearly 6.0 mg/L (ppm). Based on current scientific literature in human studies, the dissolved hydrogen concentration on the 5-10 minute settings is deemed sufficient to induce therapeutic effects. The bottle surpasses our H₂HUBB standards for both **H₂ Concentration and Daily Dose of H₂**, and we recommend users utilize the 10-minute cycle time for consuming hydrogen water from the device.

Contamination Test:

- Chlorine (Cl₂): No detectable levels
- Ozone (O₃): No detectable levels

Internal Performance

Manufacturer's Rated Electrical Values: (as stated on the power supply)

- **Type of device/electrolytic cell**
 - Pure H₂: PEM/SPE membrane
- **Applied volts:**
 - 3.7 volts
- **Total Amps:**
 - 1800 mAh (1.80 amps)
- **Total watts:**
 - 6.66Wh (watts)
- **Electrolysis volts:**
 - 2.14 volts
- **Electrolysis amps:**
 - 1.04 amps
- **Total watts:**
 - 2.23 watts

H₂ Production vs. Dissolved Hydrogen:

- **Theoretical Max H₂ production:**
 - 7.92 mL/min or 0.65 mg/min
- **Theoretical Max Dissolved H₂ Level**
 - 5-mins: \cong 11.64 mg/L (ppm)
 - 10-mins: \cong 23.28 mg/L (ppm)
- **Measured Dissolved H₂ reading:**
 - 5-mins: \cong 2.60 mg/L (ppm)
 - 10-mins: \cong 5.50 mg/L (ppm)
- **Percentage of Max H₂ Dissolved (as measured):**
 - 5-mins: \cong 25.77% dissolved
 - 10-mins: \cong 23.62% dissolved
- **Percentage of Max H₂ Undissolved (loss):**
 - 5-mins: \cong 74.23% undissolved
 - 10-mins: \cong 76.38% undissolved

Product Assessment

Functionality:

- Power on/off button
 - Located on the H₂ generator.
 - Press the power touch-sensitive button to initiate electrolysis for hydrogen gas production and initiate a 5-minute session, then shuts off.
 - Press the power touch-sensitive button twice to initiate a 10-minute session time then shuts off.
- USB-C charging port
 - Located on the backside of the device.
- Anode reservoir off-gas port
 - Pin-hole located on the bottom of the bottle.

Reliability:

- New: Yes
 - Initial test results and evaluation are currently on the report. (see Overall Opinion)

Cost:

- UltraHy™ - Molecular Hydrogen Water Bottle: \$219.00 USD
- H₂ Hubb discount: -\$10.00 USD
- H₂ Hubb recommendation cost: \$209.00 USD

Overall Opinion

The Longevity Couture: UltraHy™ - Molecular Hydrogen Water Bottle is a well-engineered, portable hydrogen water generator. Our evaluation determined that, during a 10-minute operation cycle, the device produced approximately 5.50 mg/L (ppm) of dissolved H₂ in 280 mL of water, resulting in a total dissolved hydrogen content of 1.54 mg H₂ (equivalent to 18.70 mL of H₂ gas at SATP), with a peak H₂ concentration of nearly 6.0 mg/L (ppm). This hydrogen concentration significantly exceeds the performance of substandard hydrogen water bottles, which typically produce only 0.1–0.3 mg of H₂ per cycle, and falls within the expected range for high-performance portable hydrogen water generators.

Prior testing by H₂ Analytics, utilizing gas chromatography (GC), reported an H₂ concentration of 4.16 mg/L in a 5-minute cycle and 6.21 mg/L in a 10-minute cycle. While these results are slightly higher than our H₂HUBB findings, this variance is expected due to differences in measurement methodology and inherent product variability. Taking into account our test results and H₂ Analytics' findings, we estimate that, across the natural variability of these bottles, the device generates between 3–4 mg/L (ppm) during a 5-minute cycle and 5–6 mg/L (ppm) during a 10-minute cycle. Consumers should understand these findings as the result of credible, independent testing conducted by recognized authorities in the industry. Despite coming from the same manufacturer and assembly line, individual UltraHy™ bottles may exhibit slight performance differences due to variations in H₂ electrolytic cell performance (voltage, amperage, resistance), lid seal integrity, and pressure release valve efficiency. These minor discrepancies can lead to small variations in hydrogen concentration results across different units.

H₂HUBB utilizes oxidimetry (titration), while H₂ Analytics uses gas chromatography (GC). The key difference between these methods is that gas chromatography detects both dissolved hydrogen gas and quasi-dissolved hydrogen gas, which remains in solution for 1–3 minutes after production. Oxidimetry/titration detects only dissolved hydrogen gas, specifically nanobubbles (10–1000 nm), which take 1–2 hours to fully come out of solution. Since H₂ Analytics includes quasi-dissolved hydrogen gas in its measurements, their reported H₂ concentration values tend to be slightly higher than H₂HUBB's. As a result, H₂HUBB's test results are typically within 5–15% of H₂ Analytics' values, accounting for both methodological differences and minor human error. To maximize hydrogen intake, we recommend using the bottle for 10-minute cycles, aligning closely with H₂ Analytics' readings (within an 11% margin for the 10-minute test). Additionally, the milligram dosage per cycle surpasses **H₂HUBB's daily hydrogen ingestion standard of 0.8 mg**, meaning a single 10-minute session delivers a clinically relevant therapeutic dose. Based on our findings, the UltraHy™ - Molecular Hydrogen Water Bottle delivers high hydrogen concentrations, aligning with the best-performing hydrogen water generators we have tested and recommend. Its ability to produce a therapeutically significant dose in a single session makes it a desirable choice for consumers seeking effective molecular hydrogen supplementation.

Dissolved hydrogen concentration (mg/L (ppm)) is a critical performance metric, as research suggests that 1-3 mg of H₂ or more per day appears to be therapeutic for humans. Furthermore, the **IHSA** standard for this type of product is a minimum of 0.5 mg/serving or 0.5 mg/L. H₂HUBB's performance standard for hydrogen water devices is slightly higher than IHSA, as we require the device to provide a concentration of 0.8 mg/L (ppm) and 0.8 mg/day consistently. The UltraHy™ Hydrogen Water Bottle offered by Ultrahealth Technologies LLC surpassed H₂HUBB standards for both **H₂ Concentration and Daily Dose of H₂**. Based on current research data, we believe the device's mg/L (ppm) performance provides adequate levels of hydrogen gas to induce therapeutic effects in humans. **According to our test results, the product ranks as a Level 3 hydrogen water device.** You can view the meaning of this rankings [here](#). We are pleased with the device's dissolved hydrogen concentration.

The device came very close to achieving Level 4 status in our H₂ Performance Levels, missing the threshold by just 0.3 mg/L (ppm). Additional tests were conducted to determine if the bottle could reach a peak hydrogen concentration of >6.0 mg/L (ppm), but the highest recorded peak was 5.70 mg/L (ppm), with an average of 5.50 mg/L (ppm). As a result, the bottle was awarded Level 3 status—an exceptional achievement for a hydrogen water bottle. For clarity, H₂HUBB's performance classification is based on the highest dissolved hydrogen concentration recorded during testing. This approach identifies the maximum capacity of the device, reflecting the highest possible H₂ dose a user could receive under optimal conditions. However, this does not imply that every individual will consistently achieve this peak concentration, as real-world performance can vary due to factors such as user conditions, product variability, and environmental influences. To ensure consumers have realistic expectations, we also report the average H₂ concentration achieved across multiple tests, which more accurately represents what users are likely to experience during regular use. While our performance levels are determined by peak H₂ concentrations, the H₂HUBB test average serves as a more practical measure of typical performance. In summary, while the UltraHy™ Hydrogen Water Bottle is capable of producing hydrogen concentrations exceeding 5.50 mg/L (ppm), users should not expect to reach its peak value consistently with every use. Peak concentrations occur under optimal conditions, making it essential for consumers to consider both maximum and average performance metrics when evaluating product effectiveness. H₂HUBB is committed to providing a comprehensive and transparent assessment to help consumers make well-informed purchasing decisions.

An important consideration based on our evaluation is that Ultrahealth Technologies LLC should confirm the pressure relief valve PSI rating with its bottle manufacturer to ensure consistent performance for consumers. Each bottle should undergo quality control (QC) testing of the pressure release valve in the lid during manufacturing and prior to shipment to Ultrahealth Technologies LLC. During our testing, we encountered issues with the pressure release valve, which may have impacted hydrogen concentration levels in our test results. If the valve does not function correctly (at the rated PSI), consumers may experience lower-than-intended H₂ concentrations. Given the importance of maintaining optimal pressure for effective hydrogen dissolution, we recommend that Ultrahealth Technologies LLC confirm QC testing with their manufacturer to identify and resolve any inconsistencies before the product reaches consumers.

Overall, the hydrogen water bottle is aesthetically appealing, engineered with high-quality materials, and effectively dissolves a therapeutic concentration of hydrogen gas into its 280 mL capacity. The validity of the manufacturer's claims regarding the bottle's hydrogen gas performance is not in question and the device's performance aligns closely with the product's marketing materials. We have no safety concerns with the system, as it appears to have implemented sufficient safety measures and effectively prevents the production of chlorine and ozone in the drinking water. We are generally pleased with the performance of the device. The Longevity Couture: UltraHy™ - Molecular Hydrogen Water Bottle device performed above our minimum performance standards and, in the opinion of H₂HUBB, the system appears to be safe and suitable for in-home H₂ Water Therapy. We desire to move forward with recommending the product to the public.

H₂ Hubb LLC disclaimer: All tests conducted and test results produced by H₂ Hubb LLC have been done according to industry-accepted practices and standards. Nevertheless, these results may not necessarily reflect test results performed by manufacturers, suppliers or third-party labs. Our test results are independent of all other parties, and testing by other parties may produce different results. We understand that many variables are involved in testing, some of which are extremely difficult to control. These reports are not meant or intended for any other purpose but to uphold H₂ Hubb LLC's business practices and to validate the reasons for our recommendations.



Approved By: Tywon Hubbard

Handwritten signature of Tywon Hubbard in black ink.

CEO, H₂HUBB LLC

