H_2HUBB TEST REPORT

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Evaluation Introduction

Our report summarizes our analysis of the Qcup H_2 Alpha Hydrogen Water Bottle offered by the company Qlife Hydrogen Solutions. H_2HUBB classifies this device as a premium high-pressure (psi) H_2 water portable system. The device features a PEM/SPE membrane to ensure H_2 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 +1650 mAh battery, as stated by the battery specs. Our investigation was to analyze whether the product would meet our H_2 product performance standards, which must be achieved to be approved and recommended by H_2HUBB.

To learn more about our H_2 performance standards for hydrogen water bottles, visit **H_2HUBB.**

H_2 Products

- Company: Qlife Hydrogen Solutions
- Product Name: Qcup H_2 Alpha Hydrogen Water Bottle
- Type: High-Concentration H_2 Water Device
  - PEM/SPE
  - Portable Hydrogen Water Generator
  - High-PSI bottle
- URL Link: **https://qlifetoday.com/shop/**

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: 0.270 L or 270 mL (9.12 oz)
- Cycle Time Frame:
  - 5-minutes
  - 10-minutes
- Contamination Tests:
  - Chlorine generation (Cl2)
  - Ozone Generation (O3)
- Test Location: 277 meters (909 ft elevation)
- Test Methodology:
  - Electrochemical detection using Unisense H_2 Microsensor.
- All Dissolved H_2 Concentration Tests Converted to SATP (water temp and pressure)
- Claimed Dissolved H_2 mg/L: > 6.0 mg/L as stated on packaging

Test Results

To measure the dissolved hydrogen gas concentration, the Qcup H_2 Alpha bottle was filled with 270 mL (9.12 oz) of distilled water—up to the base of the lid threads. The lid was then securely fastened, and the system was activated using either the 5-minute or 10-minute hydrogen generation mode. All measurements were conducted using the Unisense H_2 Microsensor paired with the UniAmp amplifier. Each test was performed in triplicate to ensure accuracy and reproducibility, and the resulting values were averaged to determine the bottle's overall performance. While the primary focus is on the mean dissolved hydrogen concentration, peak concentration values are also reported to provide a more comprehensive assessment of the bottle's hydrogen-generation capability.

H_2 Concentration at SATP:

- 5-mins avg mg/L (ppm): ≅ 3.91 mg/L (ppm)
- 10-mins avg mg/L (ppm): ≅ 6.50 mg/L (ppm); SD: 0.17

Peak H_2 Concentration at SATP:

- 5-mins peak mg/L (ppm): ≅ 4.01 mg/L (ppm)
- 10-mins peak mg/L (ppm): ≅ 6.81 mg/L (ppm)

Avg H_2 mg Produced in Designated Vol:

- 5-mins: ≅ 1.05 mg (≡ 12.74 mL Dissolved)
- 10-mins: ≅ 1.75 mg (≡ 21.30 mL Dissolved)

- **Claimed H_2 mg/L (ppm) confirmed: Yes**

H_2HUBB Hydrogen Concentration Assessment

- According to our testing, the Qcup H_2 Alpha Hydrogen Water Bottle consistently achieved dissolved molecular hydrogen concentrations ranging from 3.91 to 6.50 mg/L (ppm) during both the 5- and 10-minute generation cycles, with a peak concentration of 6.81 mg/L (ppm) measured using the Unisense H_2 Microsensor. Based on current human clinical literature, these concentrations are sufficient to provide therapeutic benefits. The device exceeds H_2HUBB's performance standards for both **H_2 Concentration and Daily Dose of H_2.** For practical use, we recommend the 10-minute cycle as the optimal dose and setting for preparing hydrogen-rich water with this bottle.

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 H_2: PEM/SPE membrane
- **Applied volts:**
  - 3.7 volts
- **Total Amps:**
  - 1650 mAh (1.65 amps)
- **Total watts:**
  - 6.10 Wh (watts)

Product Assessment

Functionality:

- Power on/off button
  - Located on the H_2 generator.
  - Press the power button to initiate electrolysis for hydrogen gas production and initiate a 5-minute session, then shuts off.
  - Press the power 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)

Overall Opinion

The Qlife Qcup H_2 Alpha Hydrogen Water Bottle is a well-constructed, high-pressure (High-PSI) hydrogen water generator. In H_2HUBB's evaluation, a 10-minute operation cycle produced an average of 6.50 mg/L (ppm) of dissolved H_2 in 270 mL (9.12 oz) of water, resulting in a total hydrogen content of 1.75 mg, equivalent to 21.30 mL of H_2 gas at SATP. The device also achieved an impressive peak hydrogen concentration of 6.81 mg/L, demonstrating its ability to exceed the 6.0 mg/L threshold. It is important to note that H_2HUBB references the maximum peak concentration observed during the testing period for documentation purposes only; it should not be interpreted as a concentration that can be consistently achieved. For this reason, our reports emphasize the average dissolved hydrogen concentration derived from multiple replicate tests, providing a more reliable indicator of performance consistency. Dissolved hydrogen levels were measured using the Unisense H_2 Microsensor with UniAmp amplifier, a laboratory-grade electrochemical instrument offering real-time detection and precision comparable to gas chromatography, while minimizing variability commonly observed with colorimetric (oxidimetry) methods.

Based on these results, the Qcup H_2 Alpha bottle is capable of delivering a therapeutically relevant dose of molecular hydrogen when used consistently. A single full 270 mL bottle produced on the 10-minute cycle provides more than double H2HUBB's minimum daily effective dose standard of 0.8 mg of molecular hydrogen, a threshold that already exceeds the lower end of dose commonly reported in peer-reviewed hydrogen research. Consuming 1–4 bottles per day (approximately 270–1,080 mL or 9–36 oz) can further increase total daily hydrogen intake and may support a broader range of potential therapeutic applications.

Dissolved hydrogen concentration (mg/L (ppm)) is a critical performance metric, as research suggests that 1-3 mg of H_2 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. H_2HUBB'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 Qcup H_2 Alpha Hydrogen Water Bottle offered by Qlife Hydrogen Solutions surpassed H_2HUBB standards for both **H_2 Concentration and Daily Dose of H_2**. 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 will be able to easily provide 1-3 mg of H_2 per day**. We are pleased with the device's dissolved hydrogen concentration.

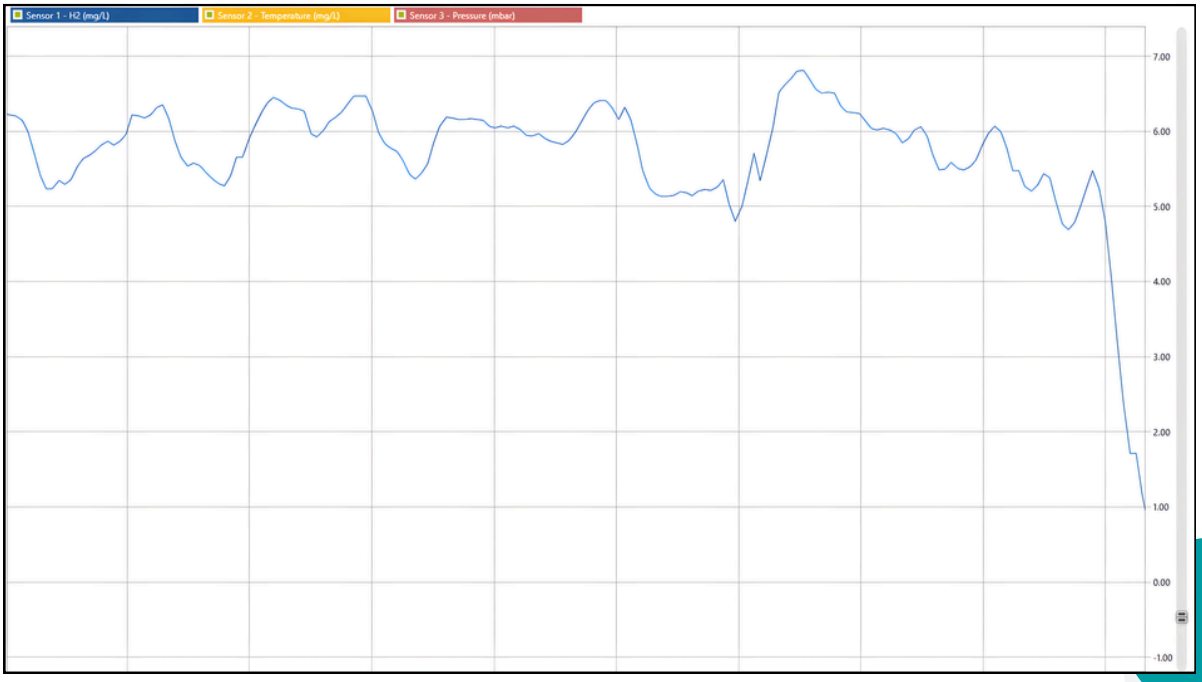
Overall, the Qlife Qcup H_2 Alpha Hydrogen Water Bottle is a well-designed system constructed from safe materials and capable of consistently producing therapeutic concentrations of dissolved hydrogen gas within its 270 mL capacity. The manufacturer's safety claims were supported by our findings, and the device's performance meets and, in several aspects, exceeds H_2HUBB's objective internal standards. No safety concerns were identified during testing, and the system effectively incorporates safeguards to prevent the formation of harmful byproducts such as chlorine or ozone in the drinking water. Based on our evaluation, the Qcup H_2 Alpha Hydrogen Water Bottle represents a safe, practical, and reliable option for in-home hydrogen water therapy, offering consumers both usability and clinically relevant hydrogen dosing.

Figure 1. 10-Minute Dissolved H_2 Time-Trace – Qcup H_2 Alpha Bottle (Unisense H_2 Microsensor)

This plot displays the real-time amperometric output from the Unisense H_2 Microsensor paired with the UniAmp amplifier during a 10-minute hydrogen generation cycle of the Qcup H_2 Alpha Hydrogen Water Bottle. The sensor signal, measured in picoamperes and converted to mg/L hydrogen, captures the dynamic dissolved H_2 concentration in the water in real time with a temporal resolution as fine as 0.02 seconds per data point. Data were recorded over the course of the test period, typically 4–5 minutes following bottle opening.

The trace illustrates both the steady-state hydrogen concentration and the natural signal fluctuations that occur during the precipitation phase, as dissolved hydrogen gas begins to equilibrate and outgas from the solution. Due to the high hydrogen concentration and resulting microbubble formation, occasional signal spikes were observed (a known artifact in high-H_2 solutions). To minimize this effect, H_2HUBB employed a controlled re-entry technique—removing and reimmersing the microsensor to dislodge surface bubbles—and then averaged the top 15 stable readings to determine the final dissolved hydrogen value.

This high-resolution time series demonstrates the Qcup H_2 Alpha bottle's ability to sustain elevated hydrogen concentrations during and immediately after generation.



H_2 Hubb LLC disclaimer: All tests conducted and test results produced by H_2 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 H_2 Hubb LLC's business practices and to validate the reasons for our recommendations.

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Approved By: Tywon Hubbard

TYWON HUBBARD

CEO, H_2HUBB LLC