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# H2HUBB Official Test Report

## Evaluation Introduction

Our report summarizes our analysis of the H2-Pro Hydrogen Water Bottle offered by the company ZYNAFLO. 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 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: ZYNAFLO
- Product Name: H2-Pro Hydrogen Water
- Type: High-Concentration H2 Water Device
  - PEM/SPE
  - Portable hydrogen water generator
  - High-PSI bottle
- Model: H2-Pro Onyx Black
- URL Link: <https://ZYNAFLO.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: 0.230 L or 230 mL
- Cycle Time Frame:
  - 10-minutes
- Contamination Tests:
  - Chlorine generation (Cl<sub>2</sub>)
  - Ozone Generation (O<sub>3</sub>)
- 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: 3.0-4.0 mg/L (post 10 minutes)

## Test Results

To perform a dissolved hydrogen gas concentration test on the bottle, we began by filling it with distilled water slightly above the bottom of the threads. We then secured the lid on the bottle and activated the hydrogen water bottle for the 10-minute setting. All of the dissolved molecular hydrogen concentration tests were conducted using H2Blue. We performed a minimum of eight tests and averaged the results. Our primary focus is on the average hydrogen concentration rather than peak values; however, both average and peak concentrations are presented in our results for a comprehensive analysis.

### H2 Concentration at SATP:

- 10-mins avg mg/L (ppm):  $\cong$  4.40 mg/L (ppm)

### Peak H2 Concentration at SATP:

- 10-mins peak mg/L (ppm):  $\cong$  4.75 mg/L (ppm)

### Avg H2 mg Produced in Designated Vol:

- 10-mins:  $\cong$  1.0 mg ( $\cong$  12.14 mL Dissolved)
- **Claimed H2 mg/L (ppm) confirmed:** Yes

### H2HUBB Hydrogen Concentration Assessment

- According to our testing, the H2-Pro Hydrogen Water Bottle exhibits a dissolved molecular hydrogen concentration of 4.40 mg/L (ppm) during its cycle duration of 10 minutes. Based on current scientific literature in human studies, the dissolved hydrogen concentration on the 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 (Cl<sub>2</sub>): No detectable levels
- Ozone (O<sub>3</sub>): No detectable levels

## Internal Performance

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

- **Type of device/electrolytic cell**
  - Pure H<sub>2</sub>: PEM/SPE membrane
- **Applied volts:**
  - 3.7 volts
- **Total Amps:**
  - 1800 mAh (1.8 amps)
- **Total watts:**
  - 6.66 Wh (watts)
  
- **Electrolysis volts:**
  - 2.80 volts
- **Electrolysis amps:**
  - 0.65 amps
- **Total watts:**
  - 1.82 watts

## H2 Production vs. Dissolved Hydrogen:

- **Theoretical Max H2 production:**
  - 4.95 mL/min or 0.41 mg/min
- **Theoretical Max Dissolved H2 Level**
  - 10-mins:  $\cong$  17.71 mg/L (ppm)
- **Measured Dissolved H2 reading:**
  - 10-mins:  $\cong$  4.40 mg/L (ppm)
- **Percentage of Max H2 Dissolved (as measured):**
  - 10-mins:  $\cong$  24.84% dissolved
- **Percentage of Max H2 Undissolved (loss):**
  - 10-mins:  $\cong$  75.16% undissolved

## Product Assessment

### Functionality:

- Power on/off button
  - Located on the H2 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 consecutively 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:

- H2-Pro Hydrogen Water Bottle: \$179.00 USD
- H2 Hubb discount: TBA
- H2 Hubb recommendation cost: TBA

## Overall Opinion

The ZYNAFLO H2-Pro Hydrogen Water Bottle is a well-engineered portable hydrogen water unit. Our evaluation found that the device produced approximately 4.40 mg/L (ppm) of dissolved H2 in 230 mL of water during a 10-minute session, resulting in 1.0 mg of H2 ( $\cong$  12.14 mL) dissolved in the bottle. The total mass of hydrogen gas (in milligrams) dissolved by the bottle within 10 minutes falls within the acceptable range for a portable H2 water generator (>0.4 mg). Additionally, the milligram dosage of H2 after the 10-minute cycle time exceeds H2HUBB's daily standard of 0.8 mg of H2 per day with just one bottle, putting it on par with some of the best-performing hydrogen water bottles we have tested and currently recommend.

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 ZYNAFLO H2-Pro Hydrogen Water Bottle 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 will be featured on our website as a Level 3 hydrogen water device.** You can view the meaning of this ranking [here](#). We are pleased with the device's dissolved hydrogen concentration.

Overall, the H2-Pro hydrogen water bottle is aesthetically appealing, engineered with high-quality materials, and effectively dissolves a therapeutic concentration of hydrogen gas into its 230 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 H2-Pro Hydrogen Water 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