

API GENERAL/CARBONATE HARDNESS KIT (Model 58)

API GH & KH Test Kit: Freshwater Aquarium Water Testing Manual

Model: GENERAL/CARBONATE HARDNESS KIT (Model 58)

1. PRODUCT OVERVIEW

The API GH & KH Test Kit is designed for accurate measurement of General Hardness (GH) and Carbonate Hardness (KH) in freshwater aquariums. Regular testing of these parameters is crucial for maintaining optimal water quality, which directly impacts the health and well-being of your fish and aquatic plants.

Water hardness refers to the concentration of dissolved minerals. General Hardness (GH) measures the total concentration of calcium and magnesium ions, essential for fish physiological functions.

Carbonate Hardness (KH), also known as alkalinity, measures the concentration of carbonate and bicarbonate ions, which act as a buffer to stabilize pH levels and prevent rapid fluctuations.

This kit helps aquarists replicate the natural habitat conditions for their fish and detect low KH levels that can lead to unstable pH, causing stress to aquatic life. Consistent monitoring helps prevent invisible water problems before they become detrimental.



Image 1.1: The API GH & KH Test Kit packaging, showing the product name and its application for freshwater aquariums.

2. WHAT'S INCLUDED

Your API GH & KH Test Kit contains the following components:

- One (1) bottle of KH (Carbonate Hardness) Test Solution
- One (1) bottle of GH (General Hardness) Test Solution
- Two (2) capped test tubes
- Detailed instruction manual (this document)



Image 2.1: The complete contents of the API GH & KH Test Kit, including the two test solutions, two test tubes, and the instruction leaflet.

3. SAFETY INFORMATION

Please Read Instructions Before Use.

When handling any chemicals, including those in this test kit, it is important to follow general safety precautions:

- Keep out of reach of children and pets.
- Do not ingest the test solutions.
- Avoid contact with skin and eyes. In case of contact, rinse thoroughly with water.
- Wash hands thoroughly after use.
- Store the kit in a cool, dry place away from direct sunlight.
- Dispose of used solutions and expired kits according to local regulations.

**ES Rápido • Fácil • Preciso**

Cuando se tienen peces y plantas, el GH y el KH del agua del acuario debería ser igual que el de su hábitat natural. Controle el GH y el KH para mantener a sus peces y plantas sanos.

NL Snel • Eenvoudig • Accuraat

De totale hardheid (GH) en de carbonaathardheid (KH) van het aquariumwater moeten overeenkomen met de natuurlijke habitat van uw vissen en planten. Controleer regelmatig de GH en de KH om uw vissen en planten gezond te houden.



Questions or Comments?

1-800-847-0659

www.apifishcare.com

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EN Fast • Easy • Accurate

When keeping freshwater fish and plants, the General Hardness (GH) and Carbonate Hardness (KH) of aquarium water should match their natural habitat. Adding tap water may increase water hardness. Use this kit to easily and accurately measure both GH and KH.

This kit contains: 2 liquid dropper bottles with child-resistant safety caps, easy-to-read instructions with information on how to test and how to correct unsafe water conditions, and 2 glass test tubes with snap-tight caps.

FR Rapide • Simple • Précis

Si vous possédez des poissons et des plantes d'eau douce, la dureté totale (GH) et la dureté carbonatée (KH) de l'eau d'aquarium doivent correspondre à celles de leur habitat naturel. L'ajout d'eau du robinet peut augmenter la dureté de l'eau. Utilisez ce kit pour mesurer le GH et le KH.

Contenu du kit: 2 flacons compte-gouttes avec bouchons de protection sécurité enfants, instructions faciles à lire comprenant des informations sur la manière de réaliser les tests et de corriger les anomalies détectées et 2 tubes à essai en verre avec bouchons étanches résistant à la pression.

**PT Rápido • Fácil • Preciso**

Sempre que mantiver peixes e plantas, o GH e KH da água do aquário devem reproduzir o seu habitat natural. Verifique o GH e KH para manter peixes e plantas saudáveis.

IT Rapido • Facile • Preciso

Quando si allevano pesci e si coltivano piante, GH e KH dell'acqua dell'acquario devono essere simili a quelli del loro habitat naturale. Controllare GH e KH per mantenere pesci e piante in buona salute..

DE Schnell • Einfach • Genau

Fische und Pflanzen sollten bei einer GH und KH gehalten werden, die ihrem natürlichen Lebensraum möglichst nahe kommt. Die Überwachung der GH und KH bewahrt die Gesundheit von Fischen und Pflanzen.

中文 快速 • 易用 • 精准

饲养鱼儿和水草都需要维持其在自然环境中的GH和KH水平。测量GH和KH来保障鱼儿和水草的健康。

Image 3.1: The back of the product packaging, displaying important safety warnings and instructions in multiple languages.

4. SETUP AND PREPARATION

Before performing the tests, ensure you have a clean, well-lit workspace. Gather all components of the test kit. It is recommended to test your aquarium water weekly, or whenever water or fish problems appear.

Preparation Steps:

1. Ensure test tubes are clean and dry. Rinse them with aquarium water before use to prevent contamination.
2. Shake the test solution bottles gently before each use to ensure reagents are well mixed.
3. Familiarize yourself with the color chart (if provided separately or on the instruction leaflet) to interpret results.

5. OPERATING INSTRUCTIONS

Follow these steps carefully to accurately measure GH and KH levels in your freshwater aquarium.

5.1. General Hardness (GH) Test

1. Fill a clean test tube with 5 ml of aquarium water. The 5 ml line is marked on the test tube.
2. Hold the GH Test Solution bottle vertically and add it drop by drop to the test tube.
3. Cap the test tube and invert it several times after each drop to mix the solution.
4. Count the number of drops required for the water sample to change color from orange to green.
5. Each drop of GH Test Solution corresponds to 1 dGH (degrees of General Hardness). The total number of drops added is your GH reading.
6. Rinse the test tube thoroughly with tap water after use.



Fill a test tube with 5 ml of aquarium water. Hold bottle vertically & follow directions.

Image 5.1: A hand carefully adding drops of test solution into a test tube filled with aquarium water, illustrating the testing process.

5.2. Carbonate Hardness (KH) Test

1. Fill a second clean test tube with 5 ml of aquarium water.
2. Hold the KH Test Solution bottle vertically and add it drop by drop to the test tube.
3. Cap the test tube and invert it several times after each drop to mix the solution.
4. Count the number of drops required for the water sample to change color from blue to yellow.
5. Each drop of KH Test Solution corresponds to 1 dKH (degrees of Carbonate Hardness). The total number of drops added is your KH reading.

6. Rinse the test tube thoroughly with tap water after use.

6. UNDERSTANDING YOUR RESULTS

Interpreting your GH and KH readings is essential for maintaining a healthy aquarium environment. The ideal ranges can vary depending on the specific fish and plant species you keep.

General Hardness (GH)

GH measures the concentration of dissolved mineral salts, primarily calcium and magnesium. These minerals are vital for fish osmoregulation, bone development, and overall health. Plants also utilize these minerals for growth.

- **Low GH:** Can lead to mineral deficiencies in fish and plants.
- **High GH:** May be unsuitable for soft water species and can contribute to scale buildup.

Consult specific care sheets for your fish and plants to determine their preferred GH range. Many freshwater tropical fish thrive in a GH range of 4-8 dGH.



Water hardness is a measure of the dissolved mineral content of water and should match fish natural habitat to prevent fish stress and keep them healthy

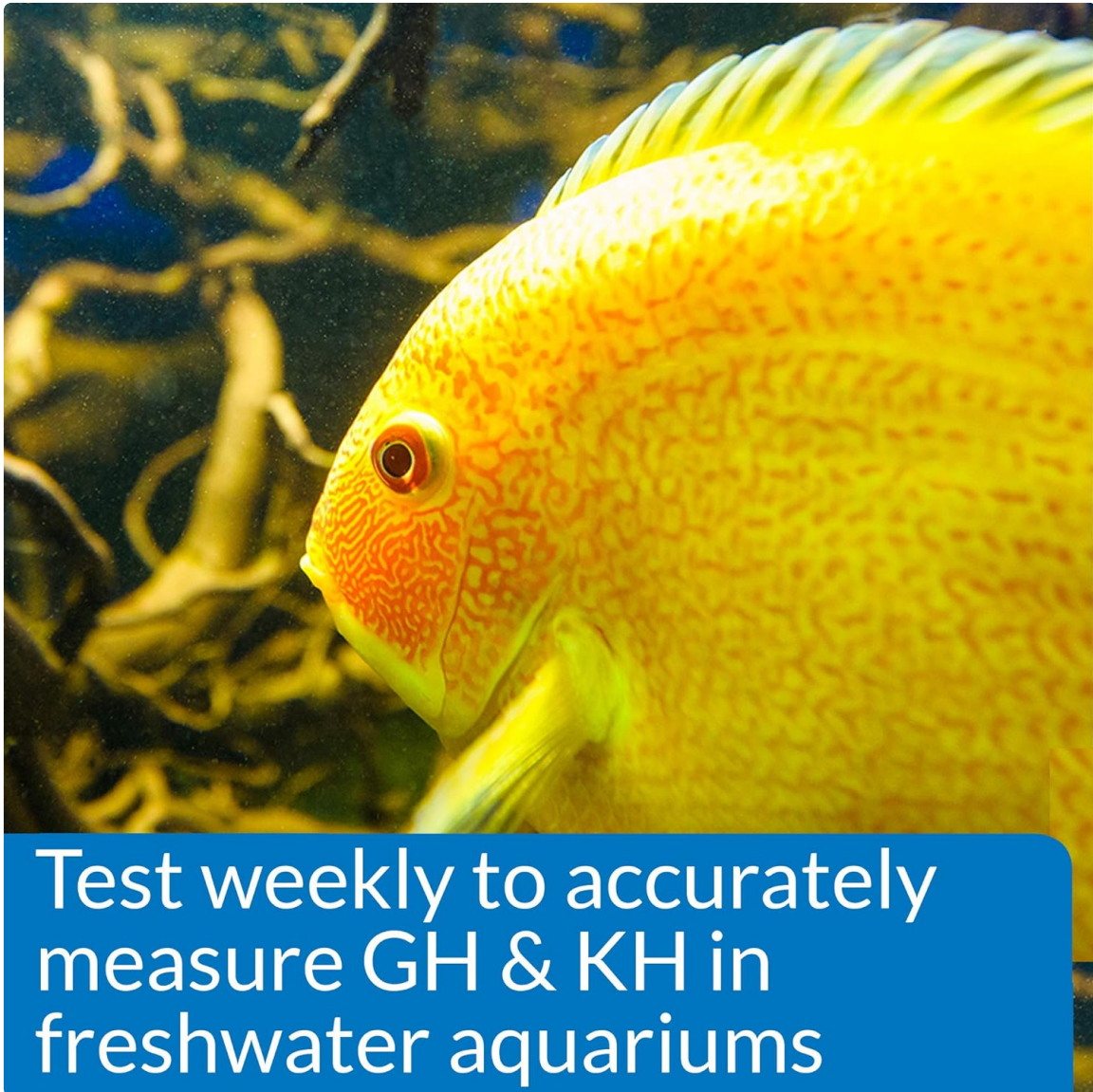
Image 6.1: Small fish in a freshwater aquarium, illustrating the importance of matching water

Carbonate Hardness (KH)

KH is a measure of the buffering capacity of your water, which helps stabilize pH. Adequate KH prevents rapid and drastic pH swings, which can be highly stressful and even fatal to fish.

- **Low KH:** Indicates poor buffering capacity, making the aquarium susceptible to sudden pH drops (pH crash).
- **High KH:** Generally stable pH, but very high levels might be unsuitable for certain soft water species.

A KH range of 3-6 dKH is often recommended for many freshwater aquariums to ensure stable pH. Regular testing helps you maintain these critical parameters.



Test weekly to accurately
measure GH & KH in
freshwater aquariums

Image 6.2: A close-up of a vibrant yellow fish in an aquarium, reminding users to test GH and KH weekly for optimal fish health.



Helps create a more natural habitat that is ideal for planted aquariums

Image 6.3: A beautifully planted aquarium, demonstrating how maintaining proper water parameters contributes to a natural and thriving aquatic environment.

7. MAINTENANCE

Proper care of your test kit components ensures accurate and reliable results over time.

- **Test Tubes:** After each use, rinse test tubes thoroughly with tap water, then with distilled water if available, to remove any chemical residue. Allow them to air dry completely before capping and storing.
- **Reagent Bottles:** Keep the caps tightly closed on the reagent bottles when not in use to prevent contamination and evaporation. Store them upright.
- **Storage:** Store the entire kit in its original packaging in a cool, dark, and dry place. Avoid extreme temperatures and direct sunlight.
- **Expiration:** Check the expiration dates on the reagent bottles. Expired reagents can give inaccurate results and should be replaced.

8. TROUBLESHOOTING

If you encounter issues or unexpected results, consider the following:

- **Inaccurate Readings:**
 - Ensure test tubes are clean and free of residue.
 - Verify that the test solutions have not expired.
 - Shake reagent bottles thoroughly before use.
 - Ensure you are adding drops vertically and counting accurately.
 - Retest with a fresh sample of aquarium water.
- **Difficulty Seeing Color Change:**
 - Perform the test in a well-lit area, preferably with natural light.
 - Place the test tube against a white background to better observe color transitions.
- **Consistently High/Low Readings:**
 - This may indicate a genuine water parameter issue. Consider adjusting your water change regimen or using appropriate aquarium additives to modify GH or KH levels gradually.
 - Consult with an experienced aquarist or a local fish store for advice on adjusting water parameters safely.

9. PRODUCT SPECIFICATIONS

Feature	Detail
Brand	API
Model Name	GENERAL/CARBONATE HARDNESS KIT
Item Model Number	58
Test Type	Liquid Drop Test
Target Parameters	General Hardness (GH), Carbonate Hardness (KH)
Application	Freshwater Aquariums
Item Weight	2.5 Ounces (70.87 grams)
Product Dimensions (LxWxH)	2.75 x 1.63 x 5.13 inches
Material	Plastic (test tubes, bottles)
Number of Items	2 (test solutions)
Manufacturer	Mars Fishcare

10. WARRANTY AND SUPPORT

For product support, questions, or concerns regarding your API GH & KH Test Kit, please contact API customer service. While specific warranty details are not provided in this manual, API is committed to customer satisfaction.

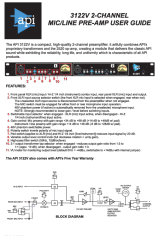

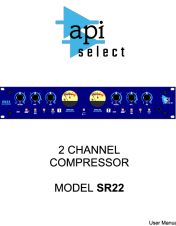

You can find more information and contact details on the official API website:

[Visit the API Store for Support](#)

Always refer to the product packaging for the most current contact information and any specific warranty statements.

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This manual is for informational purposes only. Always follow product label instructions.

Related Documents - GENERAL/CARBONATE HARDNESS KIT (Model 58)

	<p>API 3122V 2-Channel Mic/Line Pre-Amp User Guide</p> <p>User guide for the API 3122V, a compact, high-quality 2-channel preamplifier featuring API's proprietary transformers and 2520 op-amp. Details features, specifications, and block diagram.</p>
	<p>API 2500+ Stereo Bus Compressor Operator's Manual</p> <p>Discover the features and operation of the API 2500+ Stereo Bus Compressor. This manual provides detailed information on its controls, functions, and applications for professional audio engineering.</p>
	<p>API Select SR22 Dual Channel Compressor User Manual</p> <p>Detailed user manual for the API Select SR22 Dual Channel Compressor, covering its features, controls, technical specifications, and warranty information.</p>
	<p>API Spider Specifications and Load Ratings</p> <p>This document outlines the specifications and rated loads for API spider models, including applicable pipe diameters.</p>

