

SenSafe™ ReagentStrip™ Quick™

Water Quality Testing and MORE...



**SenSafe™
Chlorine**



**ReagentStrip™
Cyanide**



Arsenic

**QUICK™
Rapid Arsenic
Test Kit**



www.sensafe.com

Industrial Test Systems, Inc.



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**Product Guide
May, 2004**

Quick, easy and safe water quality testing with WaterWorks™ test strips, Sensafe™ strip, ReagentStrip™, kits & meters for water and wastewater, agriculture, pond, aquarium, pool & spa, food & beverage, medical, automotive, and home use.

Note: Price and specifications are subject to change without notice. Most products perform optimally in typical tap water. If used in industrial fluids and/or waste, performance may be influenced by contaminant concentrations. Contact our technical department for information on testing in special applications.

Alkalinity, Total



Alkalinity in water, also known as buffering capacity, is the combination of carbonate, bicarbonate, and hydroxide ions. Typically, alkalinity is measured using the Titrimetric Method. Now, WaterWorks™ Total Alkalinity (TA) test strips provide the user with a quick dip-and-read alternative. With a wide range of detection, WaterWorks™ Total Alkalinity is ideal for a variety of industries including: municipalities, wastewater treatment facilities, boiler & cooling tower operations, and other process waters. Having all required reagents impregnated on the test strip pad ensures a minimum amount of error. Additionally, no powders, liquids, or test vessels are required, making the test ideal for use directly at the process or on the shop floor. **For more information, see pH section.**

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480005	TA: 0, 80, 120, 180, 240, 360 ppm (mg/l) pH: 6, 6.5, 7, 7.5, 8, 8.5, 9	Colorimetric, Phenol Red & Bromothymol Blue	25 Seconds	Bottle of 50
481105-1	TA: 0, 80, 120, 180, 240, 360 ppm (mg/l) pH: 6, 6.5, 7, 7.5, 8, 8.5, 9	Colorimetric, Phenol Red & Bromothymol Blue	25 Seconds	Individual packets with color charts Sold in quantities of 1000

Ammonia ($\text{NH}_3 / \text{NH}_4^+$)



Ammonia Nitrogen can occur naturally in water, usually at low levels, as a result of biological decay from plant and animal matter. The presence of higher levels is generally caused by industrial runoff and other industrial effluents. Higher concentrations can also be found in rural, farming-type areas where fertilizers are regularly used. Excess levels of ammonia can be damaging to aquatic life. AquariaTest™ Ammonia uses the industry-standard Nessler reagent method, with a slight twist; the Nessler reagent is precisely impregnated on the patented SenSafe™ strip pad.

A test vial is provided for each test with alkali reagent pre-added in the vial. The test procedure is as follows: add water sample to vial, shake briefly, immerse test strip for 30 seconds with back and forth motion, remove strip, match to closest color for ammonia result.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481342	0.0, 0.2, 0.5, 0.75, 1, 4, 10 ppm (mg/l)	Colorimetric, Nessler Reagent Method	60 Seconds	5 Packets with 5 Vials
484007	0.0, 0.02, 0.05, 0.1, 0.2, 0.5 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	50

Arsenic ($\text{As}^{+3} / \text{As}^{+5}$)



Quick™ Arsenic tests were developed with considerations for US EPA & WHO drinking water standards in mind.

Arsenic is a naturally occurring element widely distributed in the earth's crust. In the environment, arsenic is combined with oxygen, chlorine, and sulfur to form inorganic arsenic compounds. Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds. Inorganic arsenic compounds have been used to preserve wood, for pest control in orchards, and as livestock dip baths. Organic arsenic compounds are used as pesticides, primarily on cotton plants.

All reagents in the kit are in powder form. Instead of using corrosive acids, commonly associated with conventional arsenic testing, Quick™ testing kits utilize tartaric acid, a weak food-grade acid, which minimizes hazards during handling. All components (except a timer) are included in a portable ready-to-use kit.

Our easy to follow test procedures require as little as 12 minutes to generate results (2 minutes preparation and mixing, and 10 minutes incubation). Reagents are clearly labeled and color coded to make arsenic testing error free. A colorimetric test strip provides accurate arsenic measurements. The Easy-Read™ color chart is printed with large view-through color blocks for precise and simple test strip color matching.

See the **ARSENIC SECTION** on the next page for detailed specifications.

Information on the performance characteristics of Quick™ can be found at www.epa.gov/etv, or call ITS at 1-800-861-9712 for a copy of the ETV verification report. The use of the ETV® Name or Logo does not imply approval or certification of this product nor does it make any explicit or implied warranties or guarantees as to product performance.

Arsenic (As^{+3} / As^{+5})

Five Quick™ Arsenic kits have been ETV Performance verified. For more information visit www.epa.gov/etv



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Test Procedure:

First, your water sample is mixed in the supplied reaction vessel with reagent #1 (Tartaric acid with rate enhancers - U.S. Patented); this acidifies your water sample. Reagent #2, an oxidizer, is then added to remove hydrogen sulfide interference. Finally, the addition of Zinc powder, reagent #3, allows the reduction of inorganic arsenic (As^{+3} and As^{+5}) to arsine gas. A test strip is positioned in the cap of the reaction bottle to react with the arsine gas released from the water sample. As arsine gas is generated and comes in contact with the test pad, the Mercuric Bromide indicator changes in color from white to shades of yellow or brown. After the incubation, the test strip is removed and the pad matched to the color chart to obtain a quantitative measure of inorganic arsenic in the sample.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481396-2	0, 5, 10, 20, 50, 100, 200, >500 µg/l (ppb)	Colorimetric, Modified Gutzeit	12 Minutes	2
481396-5	0, 5, 10, 20, 50, 100, 200, >500 µg/l (ppb)	Colorimetric, Modified Gutzeit	12 Minutes	5
481297-2	2, 4, 6, 8, 10, 12, 15, 18, 24, 30, 40, 45, >50 µg/l (ppb)	Colorimetric, Modified Gutzeit	12 Minutes	2
481298	0, 10, 25, 50, 100, 250, 500, 1000 µg/l (ppb)	Colorimetric, Modified Gutzeit	12 Minutes	300
481295	0, >10 µg/l (ppb) For Homeland Security applications where quick presence/absence arsenic confirmation is needed.	Colorimetric, Modified Gutzeit	5 Minutes	5
481396	0, 5, 10, 20, 30, 40, 50, 60, 80, 100, 150, 200, 250, 300, 400, 500 µg/l (ppb)	Colorimetric, Modified Gutzeit	12 Minutes	100
481297-I	3, 6, 8, 10, 12, 15, 19, 24, 30, 40, 50, 60, 70, 80 µg/l (ppb)	Colorimetric, Modified Gutzeit	12 Minutes	50
481304	3, 4, 5, 6, 8, 9, 10, 15, 24, 30, 40, 50, 60, 70, >70, >200 µg/l (ppb)	Colorimetric, Modified Gutzeit	12 Minutes	100
481303	1, 2, 2.5, 3, 4, 5, 6, 7, 10, 12, 14, 20, 30, >30, >40, >60, >80, >100 µg/l (ppb)	Colorimetric, Modified Gutzeit	14 Minutes	50
481301	0.4, 0.6, 1, 1.5, 2, 2.5, 3, 4, 5, 7, 9, 10, 12, 15, >15, >20, >30, >40 µg/l (ppb)	Colorimetric, Modified Gutzeit	12 Minutes	50
481300	0.2, 0.3, 0.4, 0.6, 1.2, 1.5, 1.8, 2.2, 3, 4, 5, 6, 9, 11, >12, >17, >20, >30 µg/l (ppb)	Colorimetric, Modified Gutzeit	14 Minutes	25
481305	0.01 to >1.00 color densitometer	Reflectance Measurement	N/A	N/A
Instrument comes with carrying case, conversion chart, 110v charger, calibration colors, and instructions.				

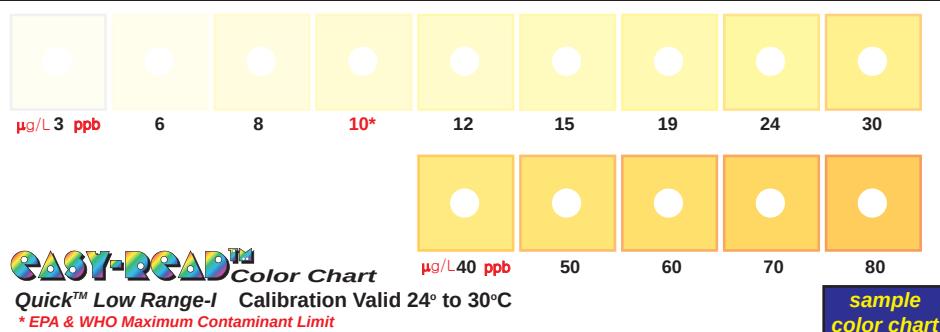
How might I be exposed to arsenic?

- The majority of arsenic exposure occurs through contaminated drinking water.
- Breathing contaminated workplace air.
- Breathing sawdust or burning smoke from wood treated with arsenic.
- Living near uncontrolled hazardous waste sites containing arsenic.
- Living in areas with unusually high natural levels of arsenic in underground mineral deposits

Arsenic Facts:

- Arsenic cannot be destroyed in the environment. It can only change its form.

- Arsenic in the air settles to the ground or can be washed out by rain.
- Many inorganic arsenic compounds readily dissolve in water when oxygen is present.
- Fish and shellfish accumulate organic arsenic, but it is in a form that is not harmful.



sample color chart

Aluminum (Al⁺³)

Aluminum is the most abundant metal in the Earth's crust and can enter the water supply naturally. Aluminum compounds called alums are used in the early stages of water treatment as coagulation aids. The maximum EPA limit for aluminum in drinking water is 0.2 ppm.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480030	0, 0.2, 0.5, 1, 2 ppm (mg/l)	Colorimetric	40 Seconds	Bottle of 50
484010	0.0, 0.02, 0.05, 0.1, 0.2, 0.5 ppm (mg/l)	Colorimetric ReagentStrip™	Immediate	50

Ascorbate

Test strips for the determination of Vitamin C (Ascorbic Acid). Vitamin C is present in many foods, especially citrus fruits. Dietary vitamin C deficiency causes the disease scurvy. Ascorbic Acid is also a strong reducing agent. An oxidation-reduction reaction occurs when Ascorbic Acid is oxidized by the dye 2, 6-Dichloroindophenol. In alkali conditions the dye is blue. The colored dye turns colorless in the presence of Ascorbic Acid.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480050	0, 100, 200, 400, >500 ppm (mg/l)	Colorimetric, Iodometric	60 Seconds	Bottle of 50

Bacteria (Presence/Absence Coliform)



481197

Total coliform bacteria are a collection of relatively harmless microorganisms that live in large numbers in the intestines of man and warm and cold-blooded animals. They aid in the digestion of food. A specific subgroup of this collection is the fecal coliform bacteria, the most common member being *Escherichia coli* (E.coli).

The presence of total coliform bacteria in aquatic environments indicates that the water has been contaminated with the fecal and/or other material of man or other animals. At the time this occurred, the source water may have been contaminated by pathogens or disease-producing bacteria or viruses which can also exist in fecal material. Some waterborne pathogenic diseases include typhoid fever, viral and bacterial gastroenteritis and hepatitis A. The presence of total coliform contamination is an indicator that a potential health risk exists for individuals exposed to this water. Coliform bacteria may occur in ambient water as a result of the overflow of domestic sewage or nonpoint sources of human and animal waste.

Bacteria Check (481197) is ideal for screening drinking water samples for total coliform bacteria. The method is a simple modification of the multiple-tube method. The broth contains bromocresol purple (BCP) that detects acidity formed during lactose fermentation by the bacteria. Simply combine 100ml of sample with the disposable bottle containing the P/A broth and let sit at room temperature for 48-hours. A color change from purple to yellow indicates the presence of coliform bacteria.

Quick™ 18-Minute Bacteria test (481195) uses a proprietary immunochemical system to confirm the absence/presence of harmful E.coli, species of *Salmonella*, *Shigella*, *Enterobacter*, *Klebsiella*, coliform, and non-coliform bacteria at 10³ cfu/ml. This disposable, single-use bacteria test is ideal for screening drinking water, well water, lakes and rivers, swimming pools, and spas in just 18 minutes! Each test includes one immunochemical strip, one vial, one pipette, and easy-to-follow instructions.

Potential Health Hazards:

Coliform bacteria are not pathogenic (disease causing) organisms, and are only mildly infectious. For this reason these bacteria are relatively safe to work with in the laboratory. If large numbers of coliforms are found in water, there is a high probability that other pathogenic bacteria or organisms, such as *Giardia* and *Cryptosporidium*, may be present. Regulations require public drinking water suppliers to demonstrate the absence of total coliform per 100 mls (about 4 oz) of drinking water. At this time, there are no regulations governing individual water wells. It is up to the private well owner to have his or her water tested.



481195

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481195	10 ³ cfu/ml	Immunochemical Strip	18 Minutes	2 Tests
481197	P/A coliform bacteria, based on 100cc sample	Brain / Heart Infusion	48 Hours	12 Bottles
481195-30	<10 ² , >10 ² , >10 ⁴ , >10 ⁶ , >10 ⁸ Growth detection of fastidious micro-organisms on a test strip	Colorimetric Brain/Heart Infusion	48 Hours	30 Packets

Bromine (Br₂)

Bromine is a more stable oxidizer than chlorine and is used as a sanitizing agent in drinking water and, very commonly, in spas. The most common testing procedure for Bromine detection uses the DPD reagent (a methyl-substituted form of DPD). US Patented SenSafe™ Bromine test (480001) eliminates the need for powders, liquids, or tablets.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480001	0, 0.05, 0.1, 0.25, 0.5, 0.75, 1, 2, 3, 4, 5 ppm (mg/l)	Colorimetric, TMK	40 Seconds	Bottle of 50
481336-WW	Total Bromine: 0, 1, 3, 6, 9, 12, 20 ppm (mg/l) pH: 6, 6.5, 7, 7.5, 8, 8.5, 9 Total Alkalinity: 0, 40, 80, 120, 180, 240, 360 ppm (mg/l)	Colorimetric, PTZ, Bromothymol Blue, & Phenol Red	30 Seconds	Bottle of 50
484101	0.0 to 2.5 ppm (mg/l)	DPD1 Colorimetric ReagentStrip™	30 Seconds	50

DPD Total Chlorine ReagentStrip™

DPD Total Chlorine ReagentStrip™, incorporates the safety and convenience of using a test strip with the sensitivity and accuracy of using a meter. A precise amount of DPD reagent is impregnated on the strip pad. The strip is immersed into a cuvette where the DPD is released. The cuvette can then be evaluated either visually, using a supplied color chart, or colorimetrically, using the ReagentStrip™ Colourwave Reader (CO7500B).

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
484104	0.0 to 2.5 ppm (mg/l)	DPD4 Colorimetric ReagentStrip™ for 10mL samples	30 Seconds	50
484054	0.0 to 2.5 ppm (mg/l)	DPD4 Colorimetric ReagentStrip™ for 5mL samples	30 Seconds	50

Chlorine, Total

SenSafe™ Total Chlorine strips are the Sensitive and Safe (SenSafe™) alternative to wet chemical total chlorine tests. A mechanical reader is not required, even for the 0.05 parts per million (ppm) or mg/L sensitivity. The unique, patented, SenSafe™ strip (US pat. no. 6541269) allows for low level detection without sacrificing accuracy. Accurate results are achieved in under 1 minute.



SenSafe Total Chlorine Check		Free Chlorine + Monochloramines	Part Number 480010	sample color chart
METHOD A: Dip one strip into a 250mL (8oz) water sample with constant, gentle back-and-forth motion for 5 seconds. Remove the strip and wait 30 seconds. Then, view through the aperture to match with closest METHOD A COLOR. Complete color match within 15 seconds.		METHOD B: Dip one strip into a 250mL (8oz) water sample with constant, gentle back-and-forth motion for 10 seconds. Remove the strip and wait 30 seconds. Then, view through the aperture to match with closest METHOD B COLOR. Complete color match within 15 seconds.		



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480007	Method A: 0.0, 0.01, 0.02, 0.05, 0.1, 0.15, 0.2 ppm (mg/l) Method B: 0.0, 0.005, 0.01, 0.015, 0.02, 0.025, 0.05 ppm (mg/l)	Colorimetric, TMK	40 Seconds	30 Packets
480010	0, 0.05, 0.1, 0.15, 0.2, 0.5, 0.8, 1, 4, 10 ppm (mg/l)	Colorimetric, TMK	35 Seconds	Bottle of 50
481110	0, 0.05, 0.1, 0.15, 0.2, 0.5, 0.8, 1, 4, 10 ppm (mg/l)	Colorimetric, TMK	35 Seconds	30 Packets
480033	0, 5, 10, 20, 30, 40, 60, 80 ppm (mg/l)	Colorimetric, TMK	33 Seconds	Bottle of 50
480129	0, 0.05, 0.1, 0.15, 0.2, 0.5, 0.8, 1, 4, 10 ppm (mg/l)	Colorimetric, TMB/KI	35 Seconds	Bottle of 50

Chlorine, Free + Total

A wide variety of applications require the operator to have a clear picture of the monochloramine concentration in a sample. WaterWorks™ 2 Free & Total Chlorine strips give the user a safe, non-technical testing solution. Combining our unique indicator patent and aperture design, used in our Free Chlorine and Total Chlorine product lines, WaterWorks™ 2 strips require no additional chemicals or technical expertise. With all of the needed reagents precisely measured and impregnated on the strip pads, WaterWorks™ 2 strips are ideal for use on the shop floor or directly at your process for fast accurate results. For monochloramine levels, simply subtract the free chlorine reading from the total chlorine reading.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480655	0, 0.1, 0.2, 0.5, 1, 2.5, 5 ppm (mg/l)	Colorimetric, TMB & PTZ	10 Seconds	30 Packets
480349-PRO	0, 0.5, 1, 2, 3, 4, 6, 10, 15, 20, 50 ppm (mg/l)	Colorimetric, TMB & PTZ	20 Seconds	Bottle of 50

Chlorine Dioxide (ClO₂)

Chlorine Dioxide is an alternative oxidizing agent used in the food / dairy industries. It is also used as a bleaching agent in the paper industry and as a sanitizer in water treatment. Chlorine dioxide is typically used because of its highly selective nature to specific compounds such as phenols, cyanides, sulfides, thiosulfates, and mercaptans. SenSafe™ Chlorine Dioxide strips are designed to minimize the need for technical training and increase the reliability of the test results. The low detection limit of SenSafe™ Chlorine Dioxide strips makes them the ideal choice for testing at a process, on the shop floor, or in the field. NOTE: Chlorine and Permanganate will interfere with this test. Please contact ITS for interference elimination procedure.



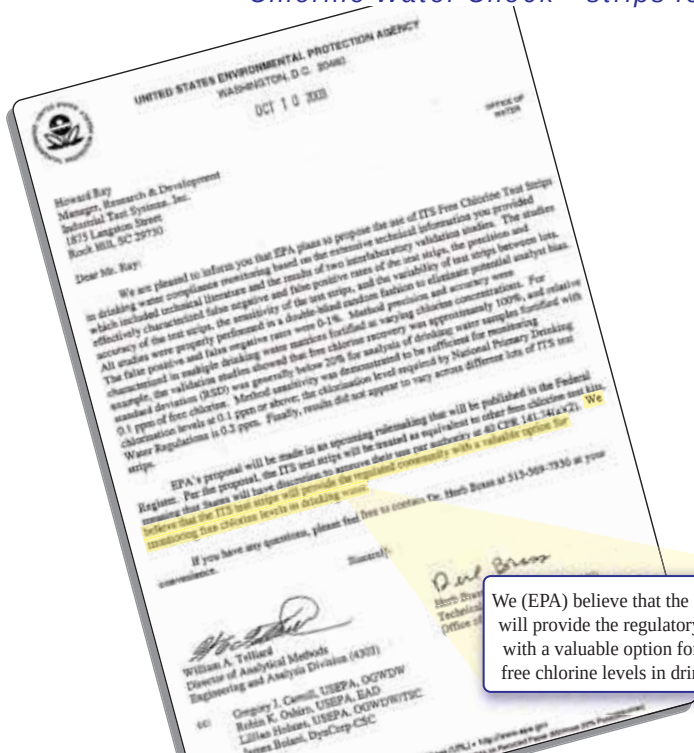
Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481028	Method A: 0, 0.1, 0.2, 0.4, 0.6, 0.8, 1, 1.2, 1.4, 1.6 ppm (mg/l) Method B: 0, 0.05, 0.1, 0.15, 0.2, 0.3 ppm (mg/l)	Colorimetric, TMB	Method A: 50 Seconds Method B: 70 Seconds	Bottle of 50
481128	Method A: 0, 0.1, 0.2, 0.4, 0.6, 0.8, 1, 1.2, 1.4, 1.6 ppm (mg/l) Method B: 0, 0.05, 0.1, 0.15, 0.2, 0.3 ppm (mg/l)	Colorimetric, TMB	Method A: 50 Seconds Method B: 70 Seconds	30 Packets
GLYCINE	Glycine reagent used to eliminate chlorine interference	N/A	N/A	1 Bottle

Chlorine, Free (HOCl)

SenSafe™ Free Chlorine Water Check™

SenSafe™ Free Chlorine Water Check™ (481026 & 481126) strips have completed US EPA evaluation and are currently pending regulatory sanctioning. These patented (U.S. Patent No. 5491094 & 6541269) strips are the Sensitive and Safe (SenSafe™) alternative to wet chemical free chlorine tests. A mechanical reader is not required, even for the 0.05 parts per million (ppm) or mg/L sensitivity. The unique, patented, SenSafe™ indicator (TMB) is reactive only to free chlorine; therefore, no interference from typical monochloramine levels. Accurate results are achieved in under 1 minute. EPA-evaluated (481026 & 481126) and other free chlorine products are available with ranges from 0.05 ppm (mg/L) to 750 ppm (mg/L).

In October 2003, ITS received a letter stating that the US EPA is proposing the use of SenSafe™ Free Chlorine Water Check™ strips for drinking water compliance monitoring.



How US Patented SenSafe™ Strips Work:

Insoluble colorimetric indicators are impregnated in the membrane / filter paper and positioned over the aperture. When a SenSafe™ strip is dipped into the water sample with back and forth motion, fluid flow is facilitated through the aperture which improves colorimetric reaction with the indicator up to 100-fold, when compared to other conventional test strips. Only ITS can offer this unique strip.



Benefits

1. Quick and easy to run with no setup time.
2. Completely portable for field use.
3. Minimum technical know-how is required since there is no sample or reagent mixing.
4. Ideal for measuring cloudy and turbid water samples with negligible effect on test results.
5. Allowed by the USDA for use in food processing facilities.

Summary of EPA Results / Conclusions:

Study: Double-blind random fashion to eliminate potential analyst bias.

Test Method: Colorimetric / visual (TMB indicator)

False positive & false negative rates: 0 - 1%

Free Chlorine recovery at varying concentrations: apx. 100%

Relative Standard Deviation (RSD): below 20%

LOT variations: negligible

Laboratory	ITS Free Chlorine strip v. EPA 8021 (Hach) & 4500-Cl-G (AWWA)	
	EPA 8021 0 - 4 ppm	4500-Cl-G 0 - 4 ppm
Southern Testing & Research Labs	0.9560	0.9724
Galbraith Laboratories	0.9876	0.9748
Shuster Laboratories	0.9820	0.9455
MEAN	0.9718	0.9736

Both methods show a correlation of greater than 97% across the critical range.

ITS expects SenSafe™ Free Chlorine Water Check™ strips to be available for drinking water compliance monitoring by early 2005.

Visit www.sensafe.com to download a copy of our EPA letter.

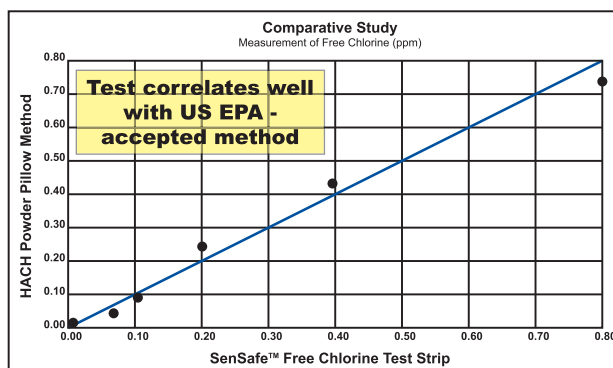
See the **FREE CHLORINE SECTION** on the next page for detailed specifications.

Other Free Chlorine Tests

Comparative Study for Free Chlorine Measurement:

(as presented at ACHEMA '97, Frankfurt am Main, GERMANY)

This study was undertaken to confirm the correlation of SenSafe™ Free Chlorine strips (480002) to HACH Company part # 21055-69 DPD Free Chlorine Reagent Method. All values are the mean of two results. Free Chlorine Aperture Strip results were collected by utilizing a 30 second dip time method. If the test color fell between two color blocks, the value was estimated. The data was statistically analyzed and plotted. A 0.9973 correlation was achieved when HACH Company DPD Free Chlorine Method results were compared with SenSafe™ Free Chlorine Aperture Strip results.



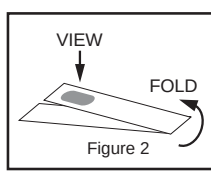
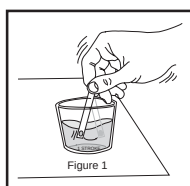
Chlorine, Free (HOCl)

Used as an alternative to DPD, SenSafe™ Free Chlorine Water Check™ strips avoid the types of errors inherent to currently available test methods. The design of the strip is what makes this possible (refer to US patent #s 5491094 & 6541269). In comparison to DPD, and according to US patent # 6004820, "the problem with use of reagent "pillows" is that while the "pillow" itself contains the precise amount (of reagent) needed, to accurately test a defined amount of aqueous solution, the reagent, after opening the "pillow", can come in contact with the operator's hands, can be spilled, or can have adulterating contaminants accidentally added. This creates significant chance for error." In contrast, SenSafe™ Free Chlorine Water Check™ requires no powders, tablets, liquids, instruments, technical training, or MSDS. All of these factors make SenSafe™ Free Chlorine Water Check™ the safe, accurate, easy, and affordable testing solution.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481026	0, 0.05, 0.1, 0.2, 0.4, 0.6, 0.8, 1.2, 1.5, 2, 2.6, 4, 6 ppm (mg/l)	Colorimetric, TMB	40 Seconds	Bottle of 50
481126	0, 0.05, 0.1, 0.2, 0.4, 0.6, 0.8, 1.2, 1.5, 2, 2.6, 4, 6 ppm (mg/l)	Colorimetric, TMB	40 Seconds	30 Packets

FIRST EPA PROPOSED STRIP for Free Chlorine Screening

EPA's test strip proposal will be made in an upcoming rulemaking that will be published in the Federal Register. Prior to permitted use for compliance monitoring purposes, users can become familiar with the test method on a screening basis.



US PATENT 5491094 & 6541269

SenSafe™ Free Chlorine Water Check

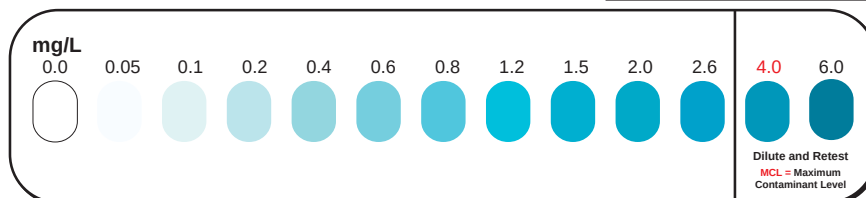
sample
color chart

Test Procedure:

Dip one (1) test strip into a 50 ml (about 2 oz.) sample for **twenty (20)*seconds** with constant, gentle back-and-forth motion that maximizes the liquid flow through the indicator pad (aperture). Remove and shake strip once briskly to remove excess sample. **Wait twenty (20) seconds** and match with the best color to determine Parts per Million (PPM) or mg/Liter concentration of Free Chlorine. Complete the color matching **within one (1) minute**.

NOTE: For best results the back-and-forth motion should be with 1" to 2" (2.5 to 5.0 cm) strokes and about 40 strokes during the 20 seconds (1 back and 1 forth stroke per second). Also, view color through aperture against a white surface. A suggestion is to fold the white plastic handle of the test strip under the aperture so that it produces a consistent viewing background (blocks all distractions from behind) (See FIGURE 2).

*NOTE: Color chart prepared with standards at 24°C. For precise results, dip time should be adjusted to correct for water temperature effect. Call ITS to receive temperature adjustment chart.



The SenSafe™ Free Chlorine Water Check test has no monochloramine interference below 4.0 ppm monochloramine concentration. A 10 ppm monochloramine concentration will typically cause a false reading of 0.2 ppm.

DPD Free Chlorine ReagentStrip™

Our latest product, DPD Free Chlorine ReagentStrip™, incorporates the safety and convenience of using a strip with the sensitivity and accuracy of a meter. A precise amount of DPD reagent is impregnated on the strip pad. The strip is immersed into a cuvette where the DPD is released. The cuvette can then be evaluated either visually, using a supplied color chart, or colorimetrically, using the ReagentStrip™ Colourwave Reader (CO7500B). DPD Free Chlorine ReagentStrip™ is based on Standard Method 4500-Cl G. DPD Colorimetric Method for measuring residual chlorine. *DPD Free Chlorine ReagentStrip™ (484101) is formulated to be a direct replacement for Hach® DPD Free Chlorine Reagent for 10ml samples, cat. 21055-69.*

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
484101	0.02 to 2.5 ppm (mg/l)	DPD1 Colorimetric ReagentStrip™ for 10mL samples	30 Seconds	50
484051	0.02 to 2.5 ppm (mg/l)	DPD1 Colorimetric ReagentStrip™ for 5mL samples	30 Seconds	50
484103	0.02 to 2.5 ppm (mg/l)	DPD3 Potassium Iodide for 10mL samples - use with DPD1 for Total Chlorine detection	30 Seconds	50
484053	0.02 to 2.5 ppm (mg/l)	DPD3 Potassium Iodide for 5mL samples - use with DPD1 for Total Chlorine detection	30 Seconds	50

Other Free Chlorine Tests

Due to its strong oxidizing properties, chlorine is an excellent water agent used to treat drinking water, municipal wastes, and other water sources. When used to treat drinking water, chlorine helps to alleviate the adverse effects of iron, manganese, ammonia, and sulfides. The most common testing method for the determination of Free Chlorine concentrations is DPD. SenSafe™ Free Chlorine strips use the patented indicator TMB (US pat. 5491094) and aperture (US pat. 6541269) that eliminate many of the short-comings of DPD.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480002	0, 0.05, 0.1, 0.2, 0.4, 0.5, 0.8, 1, 2, 5 ppm (mg/l)	Colorimetric, TMB	30 Seconds	Bottle of 50
480022	0, 1, 2, 5, 10, 20, 30, 40, 80, 120 ppm (mg/l)	Colorimetric, TMB	32 Seconds	Bottle of 50
480023	0, 0.25, 0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 15, 20, 25 ppm (mg/l)	Colorimetric, TMB	35 Seconds	Bottle of 50
480024	0, 25, 50, 100, 200, 300, 400, 500, 750 ppm (mg/l)	Colorimetric, TMB	33 Seconds	Bottle of 50
480602	0, 0.05, 0.1, 0.2, 0.4, 0.8, 1, 1.2, 1.6, 2, 3, 4, 5, 6, 7, 8, 9, 11, 15, 20, 25 ppm (mg/l)	Colorimetric, TMB	30 - 35 Seconds	50 Packets
481130	0, 1, 3, 5, 10, 12, 15, 20, 40, 80 ppm (mg/l)	Colorimetric, TMB	47 Seconds	30 Packets
481338-WW	HOCl: 0, 0.1, 0.25, 0.5, 1, 3, 6, 10 ppm (mg/l) pH: 6, 6.5, 7, 7.5, 8, 8.5, 9 Total Alkalinity: 0, 40, 80, 120, 180, 240, 360, 720 ppm (mg/l)	Colorimetric, TMB	20 Seconds	Bottle of 50
480019	Verifies bleach (5%) potency in 1 minute without mixing or diluting	TitrationStrip™	1 Minute	Bottle of 50

Chloride (Cl⁻)

Chlorides enter our drinking water naturally from sea water and the dissolving of minerals and sedimentary rock. Contamination can also occur from wastewater treatment facilities and mining operations. It is important to test regularly for chloride since levels above 250ppm can cause corrosion of pipes, toxicity to plants, and an unpleasant taste in drinking water. This test is based on diphenylcarbazone complexes that decolorize in the presence of chloride ions. Bromide and iodide will also react with the test strip. The EPA Secondary Drinking Water Standard for Chloride is 250ppm.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480127	0, 50, 100, 250, 500 ppm (mg/l)	Colorimetric	30 Seconds	Bottle of 50
481027	0, 50, 100, 250, 500 ppm (mg/l)	Colorimetric	30 Seconds	30 Packets
480124	1500, 2000, 3000, 4000, 5000, 6000, 7000 ppm (mg/l)	Colorimetric	22 Seconds	Bottle of 50

Chromium

Chromium is a heavy metal found in natural deposits as ores, and is abundant in soils and plants. Naturally occurring chromium is rarely found in water. Some of the largest sources of chromium contamination to our drinking water are from chemical manufacturing and from the combustion of natural gas, oil and coal. WaterWorks™ Chromium gives the user a quick, accurate way to detect chromium/chromate levels in water without the need for powders or tablets. The US EPA Primary Drinking Water Standard for chromium is 0.1 ppm.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480047	<0.1, 0.25, 0.5, 1, 2.5, 10, 25, 50 ppm (mg/l)	Colorimetric	32 Seconds	Bottle of 50
481147	<0.1, 0.25, 0.5, 1, 2.5, 10, 25, 50 ppm (mg/l)	Colorimetric	32 Seconds	30 Packets
484011	0.02 to 5 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	5

Copper (Cu⁺¹/Cu⁺²)

Copper may exist in water and other solutions as a soluble ion and primarily occurs in drinking water from its use in plumbing materials. It is important to detect copper since it has been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. With low detection levels, SenSafe™ copper strips are safe to use. There are no powders, liquids, or tablets to handle. Results can be obtained in as little as 15 seconds. Ideal for use in the field, or directly at a process where exacting measurements are required. The EPA Primary Drinking Water Standard for Copper is 1ppm.



sample color chart

Test Procedure: Collect a fresh 200ml water sample. Dip one test strip into the sample for **15 seconds** with a constant, gentle back-and-forth motion. Remove the strip and shake once, briskly, to remove excess water. **Wait 30 seconds.** View through the aperture to match with the closest color. Complete color matching **before 60 seconds** have elapsed.

John's Copper Check
(Cu⁺¹ / Cu⁺² - Free/Dissolved)
Part Number 480042

ppm (mg/L)	0	0.05	0.1	0.2	0.4	1	2
	[Color Swatch]	[Color Swatch]	[Color Swatch]	[Color Swatch]	[Color Swatch]	[Color Swatch]	[Color Swatch]

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480042	0, 0.05, 0.1, 0.2, 0.4, 1, 2 ppm (mg/l)	Colorimetric	15 Seconds	Bottle of 25
481142	0, 0.05, 0.1, 0.2, 0.4, 1, 2 ppm (mg/l)	Colorimetric	15 Seconds	30 Packets
480011	0, 0.5, 1, 2, 5 ppm (mg/l)	Colorimetric	30 Seconds	Bottle of 25
481111	0, 0.5, 1, 2, 5 ppm (mg/l)	Colorimetric	30 Seconds	30 Packets

Cyanide (CN⁻)

Cyanide is a very poisonous substance that can occur naturally in the environment or be introduced from industrial run-off. The detection of cyanide can be very difficult, often involving highly-technical test kits. ReagentStrip™ Cyanide strips offer the user an easier way to detect cyanide concentrations without the use of powders, tablets, liquids, or instrumentation. Offering accurate results in as little as 30 seconds, ReagentStrip™ Cyanide strips are the perfect solution when fast, accurate results are needed. The EPA Maximum Contamination Level for Cyanide is 0.2ppm.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
484000	0.01, 0.03, 0.05, 0.1, 0.2, 0.4, 0.8, 2, 5, 15, 25, 50, 100 ppm (mg/l) - Visually 0.01 to 1.00 ppm (mg/l) - with Colorimeter	Colorimetric ReagentStrip™	3 Minutes 11 Minutes	50



Kit Includes: (1) bottle Free Cyanide ReagentStrip™ #1 - 484001, (1) bottle Free Cyanide ReagentStrip™ #2 - 484002, (1) Graduated Pipette for Sample Collection, (20) Micro-Cuvettes - 112117, (1) Micro-Cuvette Holder - F18515-0000, (1) ReagentStrip™ ColourWave Reader - CO7500B, (1) Free Cyanide Semi-Quantitative Visual Color Chart - 48000-1, (1) Free Cyanide Quantitative Visual Color Chart - 48000-2, (1) Free Cyanide Colorimeter Absorbance Reference Chart - 48000-3, (1) Instruction Sheet, (1) MSDS Sheet

484001	Replacement Bottle Free Cyanide ReagentStrip™ #1	Colorimetric ReagentStrip™		50
484002	Replacement Bottle Free Cyanide ReagentStrip™ #2	Colorimetric ReagentStrip™		5
484003	0.01, 0.03, 0.05, 0.1, 0.2, 0.4, 0.8, 2, 5, 15, 25, 50, 100 ppm (mg/l) - Visually 0.01 to 1.00 ppm (mg/l) - with your colorimeter if properly calibrated	Colorimetric ReagentStrip™	3 Minutes 11 Minutes	50



Kit Includes: (1) bottle Free Cyanide ReagentStrip™ #1 - 484001, (1) bottle Free Cyanide ReagentStrip™ #2 - 484002, (1) Graduated Pipette for Sample Collection, (1) Free Cyanide Semi-Quantitative Visual Color Chart - 48000-1, (1) Free Cyanide Quantitative Visual Color Chart - 48000-2, (1) Instruction Sheet, (1) MSDS Sheet

Glucose (C₆H₁₂O₆)

Glucose is present in just about every food and beverage consumed. Through a simple dip and read procedure glucose concentrations can be measured in only 25 seconds. There are no powders, liquids, tablets, or instruments required to achieve accurate results. These strips are ideal for classroom activities and science fair projects involving sugar detection.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481117	0, 30, 60, 125, 250, 500, 1000, 2000, 4000 ppm (mg/l)	Colorimetric	25 Seconds	30 Packet

Fluoride (F⁻)

In 1939, municipalities began adding fluoride to drinking water for its cavity-preventing properties. Since then, the addition of fluoride, also known as fluoridation, has been heavily debated. No one really knows the long-term effects of fluoride on the body, but the US EPA classifies it as a toxic substance. Proper detection and treatment of fluoride is critical. ReagentStrip™ gives the user a fast, accurate way to measure fluoride concentrations without powders, liquids, or tablets. **The kit includes:** ReagentStrip™, sample vials, and color chart.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
484004	0.0, 0.5, 1, 1.5, 2 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	50

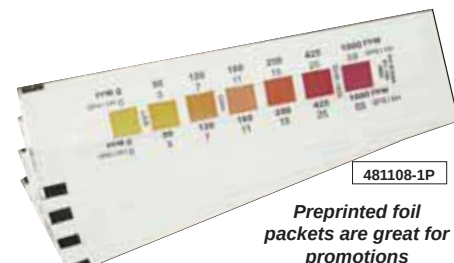
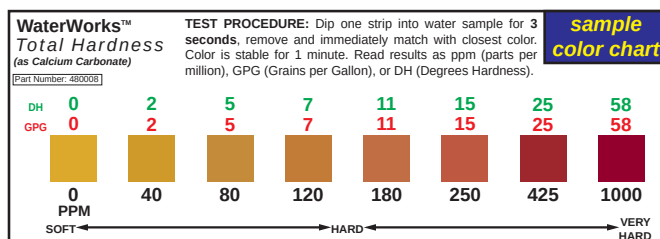
Glycol (EG / PG)

Since composition varies widely with glycol coolants, test strips are custom made for individual products and applications. This is why ITS supplies these test strips only to manufacturers. For more information, please contact our sales department.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480035	°F (°C): 32° (0°), 4° (-15°), -10° (-23°), -30° (-34°), -60° (-51°)	Colorimetric	30 Seconds	30 Packets

Hardness, Total (Ca⁺²)

Calcium and Magnesium are naturally occurring minerals responsible for water hardness. Hardness is a key water chemistry parameter and its control is important to help assure proper water quality. Low levels of calcium and magnesium (soft water) can contribute to problems of corrosive water. High calcium and magnesium levels, especially above 400 ppm, can lead to possible water clarity problems and scaling. There are various commercially-available softeners that can help minimize the problems associated with high hardness levels. Hardness levels can be determined by using a simple dip and read strip. Levels are standardized as Calcium.



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480008	0, 40, 80, 120, 180, 250, 425, 1000 ppm (mg/l) OR 0, 2, 5, 7, 11, 15, 25, 58 gpg	Colorimetric	3 Seconds	Bottle of 50
481108	0, 40, 80, 120, 180, 250, 425 ppm (mg/l) OR 0, 2, 5, 7, 11, 15, 25 gpg	Colorimetric	3 Seconds	30 Packets
481108-1P	0, 50, 120, 180, 250, 425, 1000 ppm (mg/l) OR 0, 3, 7, 11, 15, 25, 59 gpg	Colorimetric	3 Seconds	Preprinted color chart packets Sold in quantities of 1000
480334-PRO	0, 50, 120, 180, 250, 425, 1000 ppm (mg/l)	Colorimetric	3 Seconds	Bottle of 50

Hydraulic/Brake Fluid

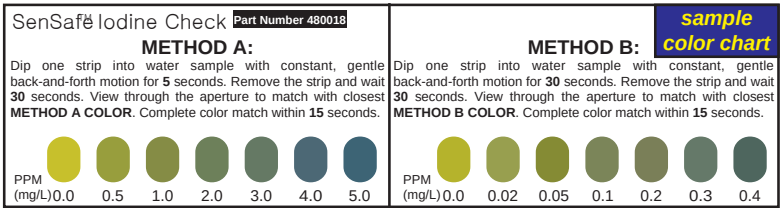
ITS Hydraulic / Brake Fluid strips are designed to measure the level of water or metal contaminants that may be present in your fluid. Since composition varies widely in hydraulic/brake fluids, strips are custom made for individual products and applications. Because of these various compositions, ITS supplies these strips only to manufacturers. For more information, please contact our sales department.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
483001	0, 5, 10, 25, 50, 75, >100 ppm (mg/l)	Colorimetric (Copper)	25 Seconds	Bottle of 5
483002	0, 5, 10, 25, 50, 75, >100 ppm (mg/l)	Colorimetric (Copper)	25 Seconds	Bottle of 50

Iodine (I₂)



Iodine is a widely used industrial disinfectant, typically found in poultry processing and large HVAC systems (to control bacteria growth). Typical detection methods require the addition of a powder or tablet to your water sample and measurement with an instrument. Sensafe™ Iodine Check gives the user an accurate, quick method for determining iodine concentrations. Simply dip a strip into your water sample for 5 seconds, remove the strip and wait 30 seconds. Match to the closest color on the color chart. Ideal for use in food processing plants.



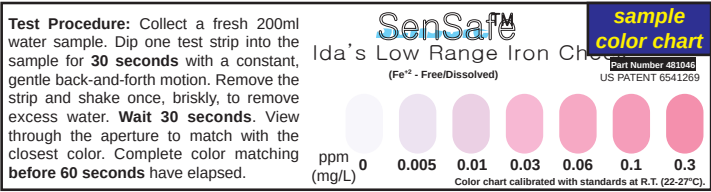
Iodine is a bluish-black, lustrous solid, volatilizing at ordinary temperatures into a blue-violet gas with an irritating odor; it forms compounds with many elements, but is less active than the other halogens, which displace it from iodides. Iodine exhibits some metallic-like properties and is also frequently used as a disinfectant.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480018	Method A: 0, 0.5, 1, 2, 3, 4, 5 ppm (mg/l) Method B: 0, 0.02, 0.05, 0.1, 0.2, 0.3, 0.4 ppm (mg/l)	Colorimetric	35 Seconds OR 1 Minute	Bottle of 50
480064	0, 5, 10, 15, 20, 30, 40, 50, 75, 100, 150, 200, 250, 300 ppm (mg/l)	Colorimetric	32 Seconds	Bottle of 50
484101	0.0 to 2.5 ppm (mg/l)	DPD1 Colorimetric ReagentStrip™	30 Seconds	50

Iron (Fe⁺²)



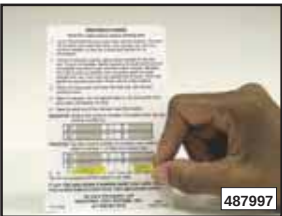
The presence of dissolved iron in water can have negative consequences. It can lead to stained clothes, corrosion of pipes and fixtures, and a foul taste in drinking water. Sensafe™ Iron Check is the only strip available that incorporates all of the reagents needed to perform accurate iron concentration detection. By using ITS' patented aperture, Sensafe™ Iron Check allows detection down to 0.005 ppm. Sensafe™ Iron Check strips are ideal for use at process control points and in the field.



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481046	0, 0.005, 0.01, 0.03, 0.06, 0.1, 0.3 ppm (mg/l)	Colorimetric	60 Seconds	Bottle of 25
480146	0, 0.3, 1, 2, 5, 10, 20, 50 ppm (mg/l)	Colorimetric	31 Seconds	Bottle of 25
480025	0, 0.02, 0.05, 0.1, 0.2, 0.3, 0.5, 0.75, 1, 2, 5 ppm (mg/l)	Colorimetric	2 Minutes	Bottle of 25
480125	0, 0.02, 0.05, 0.1, 0.2, 0.3, 0.5, 0.75, 1, 2, 5 ppm (mg/l)	Colorimetric	2 Minutes	30 Packets
481331	0, 0.1, 0.3, 1, 5 ppm (mg/l)	Colorimetric	2 Minutes	Bottle of 25
480331	0, 0.1, 0.3, 1, 5 ppm (mg/l)	Colorimetric	2 Minutes	30 Packets

Lead (Pb⁺²)

Lead is a naturally occurring heavy metal in the Earth's crust. For many years, lead was added to gasoline, paints, and other consumer materials. However, exposure to lead can be harmful. With ITS' wide variety of lead test kits, home owners, schools, and industries can easily detect the presence of lead without having to send a sample to a laboratory for analysis. Whether you're concerned about the paint in your house, the soil in your garden, or your drinking or process water, ITS has the right strip for you. The US EPA Primary Drinking Water Standard for lead is 0.015 ppm.

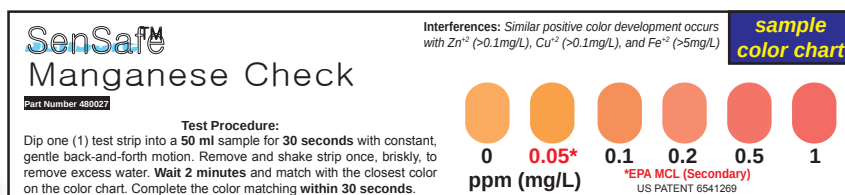


Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480310 for Paint	0 (0.0%), 600 (0.06%), 5000 (0.5%) ppm (mg/l)	Colorimetric	5 Minutes	10 Packets
480311 for Soil	0, 100, 200, 300, 400 ppm (mg/l) (tests for lead and other heavy metals)	Colorimetric	1-10 Minutes	5 Packets
487997 for Water	Tests for the EPA limit of 15ppb lead in water using lateral flow strip	Lateral Flow Immunoassay Strip	10 Minutes	2 Immunoassay Strips

Manganese (Mn^{+2})



Manganese minerals are widely distributed in the Earth's crust and can be introduced from industrial run-off and other effluents. The presence of manganese in your water can cause a bitter taste and, at higher levels, staining of laundry and plumbing fixtures. With a detection sensitivity down to 0.05 ppm, SenSafe™ Manganese Check offers the user an alternative to wet chemical and reagent-based test kits.



This test has interferences from other metals such as Zn, Cu, and Fe. The EPA Secondary Drinking Water Standard is 0.05 mg/l.

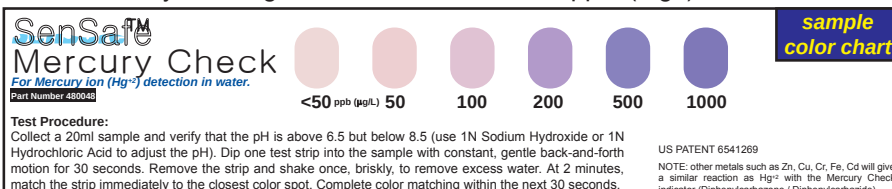
Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480027	0, 0.05, 0.1, 0.2, 0.5, 1 ppm (mg/l)	Colorimetric	2 Minutes	Bottle of 5
481127	0, 0.05, 0.1, 0.2, 0.5, 1 ppm (mg/l)	Colorimetric	2 Minutes	30 Packet

Mercury (Hg^{+2})

Mercury is a naturally occurring heavy metal. Chemical and allied industries are primarily responsible for mercury released to the environment. Given its toxic properties, it is important that mercury levels be detected accurately, even at very low levels. This test will only detect Hg^{+2} ions in the sample. Other metals will interfere. The EPA Primary Drinking Water Standard is 0.002 ppm (mg/l).

What is Mercury and where does it come from?

A rare element in the Earth's crust, mercury is found either as a native metal (rare) or in cinnabar, corderite, livingstonite, and other minerals with cinnabar (HgS) being the most common ore. Approximately 50% of the global supply comes from Spain and Italy with much of the rest coming from Slovenia, Russia, and North America. Most contamination is from industrial use of mercury.



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480049	0, 0.002, 0.005, 0.01, 0.02, 0.04, 0.08 ppm (mg/l)	Colorimetric	90 Seconds	Bottle of 50
480048	<50, 50, 100, 200, 500, 1000 ppb ($\mu g/L$)	Colorimetric	90 Seconds	Bottle of 50
481148	<50, 50, 100, 200, 500, 1000 ppb ($\mu g/L$)	Colorimetric	90 Seconds	30 Packets

Metals, Heavy (Co^{+2} , Cd^{+2} , Zn^{+2} , Cu^{+2} , etc.)

The presence of heavy metals in water can cause many problems. In the home, heavy metal presence can come from corrosion of pipes and fixtures. In the lab, the source of heavy metals can be stainless steel storage containers. SenSafe™ Water Metals Check is the ideal solution for fast, accurate heavy metals screening. Simply dip a patented strip into your water sample for 30 seconds with back and forth motion, remove the strip and wait 2 minutes for the color to develop. Match the color to determine concentration. All reagents needed are precisely measured and impregnated on the test pad, so the hazards of working with liquids and powders is removed. SenSafe™ Water Metals Check is a valuable screening tool to determine, semiquantitatively, the level of metals present in your distilled water, tap water, and samples for instrumental analysis. Works even with emulsion suspensions and colored samples.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480309	<10, 20, 50, 100, 200, 400, 1000 $\mu g/L$ (ppb)	Colorimetric, PADAP	3 Minutes	Bottle of 50
481309	<10, 20, 50, 100, 200, 400, 1000 $\mu g/L$ (ppb)	Colorimetric, PADAP	3 Minutes	30 Packets

Molybdate (MoO_4^{-2})

Test strips for the determination of molybdate in coolant water and boiler feed water.

Molybdenum and Molybdate salts are commonly used as corrosion inhibitors. The sample in the presence of an indicator and reducing agent will turn lavender to blue due to molybdate. The developed color is proportional to the concentration of MoO_4^{-2} . Since compositions vary widely with coolant molybdate levels, test strips are custom made for individual products and supplied only to manufacturers. For more details contact our sales department.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480034	0, 5, 10, 25, 50, 100 ppm OR 0, 75, 150, 300, 600, 1200 ppm (mg/l)	Colorimetric	25 Seconds	Bottle of 50
484013	0.0, 0.5, 1, 2, 5, 10, 20 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	50

Nickel (Ni^{+2})

Nickel occurs naturally in the environment and is seldom found in water due to its very low solubility. Nickel found in the environment is often a result of industrial runoff from metal plating processes and corrosion. The detection of nickel often requires the use of wet chemical reagent kits.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480029	Call for Specifications	Colorimetric	25 Seconds	Bottle of 50

Nitrate/Nitrite Nitrogen (NO₃/NO₂-)



EPA Primary Drinking Water Standard is 10ppm for Nitrate and 1ppm for Nitrite

Nitrates and Nitrites are often found simultaneously in water and are byproducts of biological decay and Nitrogen decomposition. Nitrates and Nitrites can lead to infant mortality, adult illness, and dead aquatic life. Nitrites, however, can be very useful as corrosion inhibitors in cooling towers. WaterWorks™ Nitrate / Nitrite strips give the user a safe, accurate method for detecting levels in water. With the needed reagents impregnated on the strip pad, and no chemicals to add or mix, inaccurate results are minimized. Additionally, WaterWorks™ Nitrate / Nitrite strips use a zinc reduction method; safer than the typical cadmium reduction method used in many other testing procedures.

sample color chart

Nitrate and Nitrite

Nitrate Nitrogen/Nitrite Nitrogen (as N)

TEST PROCEDURE: Dip one test strip into water sample for 2 seconds, remove, wait 1 minute, and match Nitrate/Nitrite (end pad) and Nitrite colors. Complete color matching within 1 minute.

NOTE: For conversion of levels to NO₂ and NO₃, multiply Total Nitrate value by 4.4 to get NO₃ mg/L; and multiply Nitrite value by 3.3 to get NO₂ mg/L.

Total Nitrate (as N) (end pad)

0	0.5	2.0	5.0	10.0	20.0	50.0
PPM				MCL		
(mg/L)						

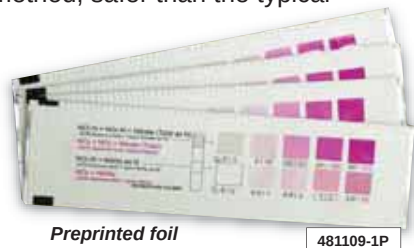
Nitrite (as N) (pad nearest handle)

0	0.15	0.3	1.0	1.5	3.0	10.0
PPM			MCL			
(mg/L)						

MCL = Maximum Contaminant Level US EPA

NOTE: Both pads react with Nitrite. The end pad, which has zinc added, converts the Nitrate to Nitrite and, therefore, reacts with both Nitrate and Nitrite. If the exact Nitrate Nitrogen level is required, then subtract the Nitrite level from the Nitrate plus Nitrite (end pad) level.

National Primary Drinking Water Regulations set forth by USEPA recommend a Nitrate (measured as Nitrogen) level of 10 PPM or less and a Nitrite (measured as Nitrogen) level of 1 PPM or less. The World Health Organization maximum level is 50 mg/Litre (acute) for Nitrate (as NO₃-) and 3 mg/Litre (acute) for Nitrite (as NO₂-).



Preprinted foil packets are great for promotions

Product contains NO Cadmium!

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480009	NO ₃ : 0, 0.5, 2, 5, 10, 20, 50 ppm (mg/l) (as N) NO ₂ : 0, 0.15, 0.3, 1, 1.5, 3, 10 ppm (mg/l) (as N)	Colorimetric, Zinc Reduction	1 Minute	Bottle of 50
481109	NO ₃ : 0, 0.5, 2, 5, 10, 20, 50 ppm (mg/l) (as N) NO ₂ : 0, 0.15, 0.3, 1, 1.5, 3, 10 ppm (mg/l) (as N)	Colorimetric, Zinc Reduction	1 Minute	30 Packets
481109-1P	NO ₃ : 0, 2, 10, 20, 50 ppm (mg/l) (as N) NO ₂ : 0, 0.3, 0.5, 1, 3 ppm (mg/l) (as N) AND NO ₃ : 0, 10, 50, 100, 200 ppm (mg/l) (as NO ₃) NO ₂ : 0, 1, 2, 3, 10 ppm (mg/l)(as NO ₂)	Colorimetric, Zinc Reduction	1 Minute	Preprinted color chart packets Sold in quantities of 1000

Nitrite (NO₂-)

Since composition varies widely with coolant Nitrite levels, strips are custom made for individual products and applications and supplied only to manufacturers. For more information, please contact our sales department.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
483003	0, 100, 300, 800, 1600, 3200 ppm (mg/l)	Colorimetric	1 Minute	Bottle of 50
484009	0.2 to 2.0 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	50

Ozone (O₃)



An important consideration in ozone measurement is to prevent loss of ozone from the sample. The sample should be collected and tested immediately. Any stirring, shaking, or transferring from one container to another will result in ozone loss. The US Patented SenSafe™ Ozone strip method utilizes the TMK indicator with an iodide salt. Ozone readily converts iodine which then reacts with the TMK. Color development is directly proportional to the concentration of ozone. Other oxidizers will give a similar reaction. Please contact ITS for interference elimination procedure.

SenSafe™
Ozone Check
Part Number 481234

(water)

PPM (mg/L) 0.0 0.05 0.1 0.2 0.3 0.4 >0.5

TEST PROCEDURE: Dip one test strip into a 50mL or larger water sample with constant, gentle back-and-forth motion for 10 seconds. Remove the strip, shake once, briskly, to remove excess water and wait 20 seconds. View through the aperture to match with the closest color. Complete color matching within 30 seconds.

For better accuracy, fold the test strip in half so that the white handle covers the underside of the aperture (window).

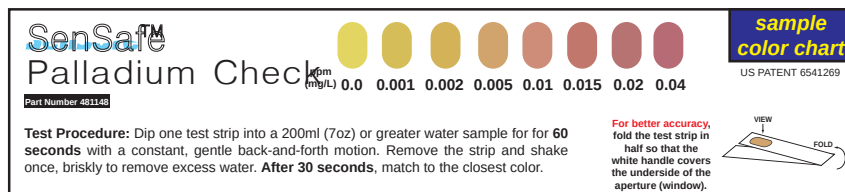
sample color chart

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481234	0, 0.05, 0.1, 0.2, 0.3, 0.4, >0.5 ppm (mg/l)	Colorimetric, TMK	30 Seconds	Bottle of 5
481134	0, 0.05, 0.1, 0.2, 0.3, 0.4, >0.5 ppm (mg/l)	Colorimetric, TMK	30 Seconds	30 Packets
484008	0.05 to 2.0 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	50

Palladium (Pd^{+2})



Palladium, a naturally-occurring heavy metal used in dentistry, watch making, surgical instruments and in electrical contacts, is not normally found in natural waters. Introduced into water through industrial runoff and effluents, palladium is difficult to measure and usually requires laboratory analysis. Our US Patented SenSafe™ strips are designed to detect down to 0.001 ppm palladium in water without the use of powders, liquids, or laboratory equipment. Silver, mercury, and other oxidizers cause interference.

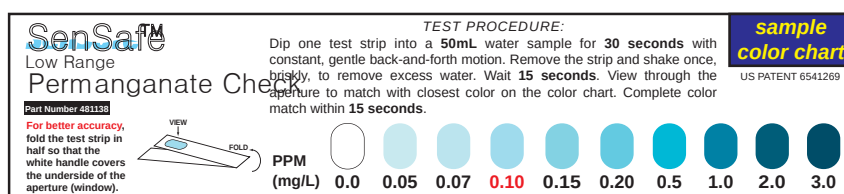


Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481148	0, 0.001, 0.002, 0.005, 0.01, 0.015, 0.02, 0.04 ppm (mg/l)	Colorimetric, TMK	45 Seconds	30 Packets

Permanganate (MnO_4^-)



The oxidizer, permanganate, has long been used for disinfecting, deodorizing, bleaching, dying, and as a cleaning agent. Our US Patented SenSafe™ Permanganate strips allow quick, accurate determination of this oxidizer in solutions. Other oxidizers cause interference.



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481138	0, 0.05, 0.07, 0.1, 0.15, 0.2, 0.5, 1, 2, 3 ppm (mg/l)	Colorimetric	45 Seconds	Bottle of 50

Peroxide (H_2O_2)



ITS' Peroxide strips develop color through enzymatic (HRP) reaction with H_2O_2 to form a blue dye (indicator TMB). Typical concentrations of ions found in tap water do not interfere. The presence of strong oxidizing agents, however, can interfere. Acceptable pH levels are from 2 to 9 as long as the solution is not buffered. Strong alkali or acidic samples should be adjusted to pH 5 to 7. For hydroperoxide determination in organic solvents, moisten the test pad (480014) with the solvent, allow to evaporate and dry, then moisten again with a drop of distilled water. Any blue indicates the presence of hydroperoxide. Extensively used in the food and dairy industries, our peroxide (480014 and 481015) strips confirm that residual peroxide sanitizer has been fully purged from containers, equipment, and filling lines before use.

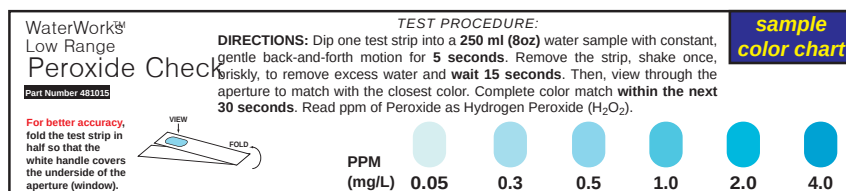
Test uses HRP enzyme with TMB which forms a blue color in the presence of Peroxide.

Peroxide is one of the most powerful oxidizers known -- stronger than chlorine, chlorine dioxide, and potassium permanganate.

Peroxide can both inhibit and encourage microbial growth. Similarly, it can treat both easy-to-oxidize pollutants (iron and sulfides) and difficult to oxidize pollutants (solvents, gasolines and pesticides).

By simply adjusting the conditions of the reaction (e.g., pH, temperature, dose, and/or reaction time), Peroxide can often be made to oxidize one pollutant over another, or even to favor different oxidation products from the same pollutant.

Peroxide has none of the problems of gaseous releases or chemical residues that are associated with other chemical oxidants. Also, Peroxide is totally miscible with water. Therefore, concentration dictates its safety.



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480014	0, 0.5, 2, 5, 10, 25, 50, 100 ppm (mg/l)	Colorimetric	30 Seconds	Bottle of 50
481015	0, 0.05, 0.3, 0.5, 1, 2, 4 ppm (mg/l)	Colorimetric	20 Seconds	Bottle of 50
481116	0, 200, 400, 800, 1600, 2500, 5000, 10000, 30000 ppm (mg/l)	Colorimetric	25 Seconds	30 Packets

Pesticide (Atrazine / Simazine)

Pesticide Test

1. Open foil pouch and take out all contents. The test kit contains one Pesticide Test Strip, one sample vial, and one dropper pipette, as well as a desiccant packet (to be discarded).
2. Using the dropper pipette, place water sample in the test vial. To draw sample up, tightly squeeze the bulb at the end of the pipette and place open end into water sample. Release the bulb to draw sample, then squeeze again to expel sample into vial. Use only one pipette-full of water. Swirl vial gently for several seconds. Place vial on a flat surface.
3. Place the Watersafe test strip into test vial, with arrows pointing down.

4. Wait 10 minutes. Do not disturb strip or vial during this time. Blue lines will appear on strip.
5. Take the strip out of the vial and read the results:
6. Note: If no lines appear, or both lines are very light, the test did not run properly and the result is not valid.

If your test strip shows a positive result, your water sample may contain pesticide at a toxic level. Take appropriate action.

NEGATIVE: Bottom line (next to number 1) is darker than top line (next to number 2).

POSITIVE: Top line (next to number 2) is darker than bottom line (next to number 1, or lines are equally dark.



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
487996	Test for EPA limit of 3ppb Atrazine & 4ppb Simazine	Lateral Flow Strip	10 Minutes	2 Immunoassay Strips

pH

pH measurement is one of the most commonly performed tests in the lab and in the majority of industrial processes. Although the use of a pH meter is the preferred method, there are many times when the use of a meter is prohibitive. WaterWorks™ pH strips give the user an accurate alternative to pH meters without sacrificing quality results. Since all required reagents are precisely impregnated on the strip pad, there is no need for calibration. Additionally, WaterWorks™ pH strips may be purchased in individually-wrapped foil packets, making them ideal for use under almost any condition. All test strips are considered non-hazardous for shipping by OSHA (29 CFR 1910.1200(d)).

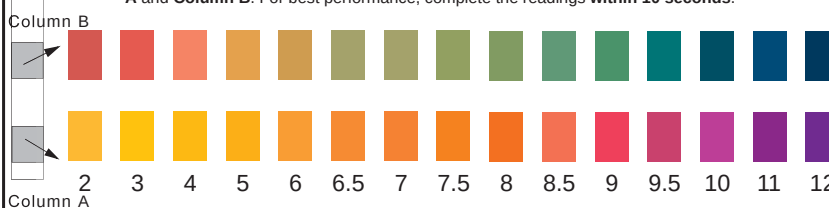


**sample
color chart**

Extended Range pH

Part Number 481104

Test Procedure: Dip one test strip into water sample for **10 seconds** with constant, gentle, back-and-forth motion. Remove the strip and shake once, briskly, to remove excess sample. **Wait 20 seconds** and match with the closest color on the color chart for **Column A** and **Column B**. For best performance, complete the readings **within 10 seconds**.



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480005	TA: 0, 80, 120, 180, 240, 360 ppm (mg/l) pH: 6, 6.5, 7, 7.5, 8, 8.5, 9	Colorimetric, Bromothymol Blue & Phenol Red	25 Seconds	Bottle of 50
481105-1	TA: 0, 80, 120, 180, 240, 360 ppm (mg/l) pH: 6, 6.5, 7, 7.5, 8, 8.5, 9	Colorimetric, Bromothymol Blue & Phenol Red	25 Seconds	Individual color chart packets Sold in quantities of 1000
481104	2, 3, 4, 5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 11, 12	Colorimetric, Phenol Red	30 Seconds	Bottle of 50
480104	2, 3, 4, 5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 11, 12	Colorimetric, Phenol Red	30 Seconds	30 Packets
480104-1	2, 3, 4, 5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 11, 12	Colorimetric, Phenol Red	30 Seconds	Individual color chart packets Sold in quantities of 1000

Phenols (C_6H_5OH)

Phenols (C_6H_5OH) Phenolic compounds in trace amounts less than 1ppm can have significantly detrimental effects on water quality. Phenols can cause water and fish to taste and smell unpleasant. Phenols are toxic to mammals and fish. The US EPA recommends a maximum of 1ppb for total phenolic compounds in domestic water supplies. In the presence of potassium ferricyanide, phenol acts as an oxidizing agent and reacts with 4-Aminoantipyrine to form a colored antipyrine dye. **Test Kit includes:** ReagentStrip™, sample vial, and color chart.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480013	0, 0.005, 0.01, 0.02, 0.04, 0.08, 0.1 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	50

Phosphate (PO_4^{3-})

ITS offers a ReagentStrip™ for the determination of orthophosphate in drinking water. Only orthophosphate is determined with this test. Phosphates as meta-, pyro-, or other are not determined. In a mild acid medium, orthophosphate reacts with molybdate forming a complex. This complex is then reduced by a reducing agent producing a molybdenum blue color. Depending on the concentration of orthophosphate present, colors from yellow to green to blue will develop. Quick results are achieved without the need for special equipment.

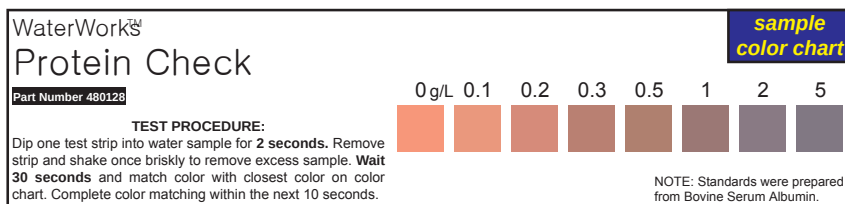
Test kit includes: sample vial, ReagentStrip™, and color chart.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480017	0, 0.2, 0.4, 0.6, 1, 2, 5 ppm (mg/l) - Visual 0.02 to 5.0 ppm (mg/l) with Colorimeter (CO7500B)	Colorimetric ReagentStrip™	20 Seconds	50

Protein (as Albumin)



Our Protein strip allows amino acids and proteins, such as Albumin, to be quickly and easily detected in solution. This strip was originally developed in the medical industry as a protein urine test. The indicator, Tetrabromophenol Blue, is very sensitive to protein concentrations. A citrate buffer is used to buffer the indicator and a pH shift is directly proportional to the concentration of the protein present. Albumin is used to calibrate the color chart.

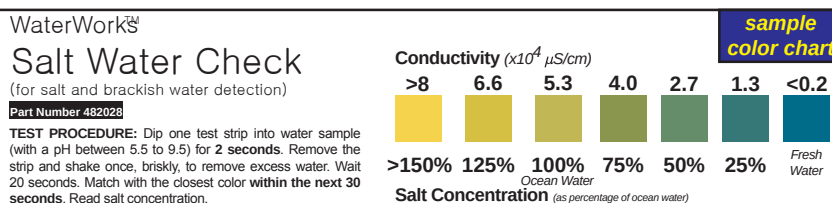


Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480128	0, 0.1, 0.2, 0.3, 0.5, 1, 2, 5 g/L	Colorimetric	32 Seconds	Bottle of 50

Salt, Ocean (TDS)



It is Important to monitor your salt aquarium. It is also important to know if tidal water or wells near the sea are brackish. This dip and read strip quickly gives you answers to salt water or brackish water concentrations. Ideal for environmental studies to distinguish salt from fresh water estuaries.



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
482028	Salt Concentration: 0%, 25%, 50%, 75%, 100%, 125%, >150% Conductivity: <0.2, 1.3, 2.7, 4, 5.3, 6.6, >8 ($\times 10^4 \mu\text{S/cm}$)	Colorimetric	45 Seconds	Bottle of 50

Silicate (SiO_4^{2-})

Silica and silicates are often added to water as detergents, corrosion inhibitors, and water conditioners. Silicates can cause significant problems in boilers and turbines due to the high temperatures and pressures. Silicates can become deposited on heat exchangers and tubes of boilers, thus causing decreased heat transfer and even failure. Silicates deposited on turbine blades can cause decreased efficiency and require costly downtime for cleaning. **Test Kit includes:** Sample vials, ReagentStrip™, and color chart.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480032	0, 5, 10, 20, 50, 100, 200, 500 ppm (mg/l)	Colorimetric ReagentStrip™	30 Seconds	50

Since 1989, ITS has been manufacturing test strips that solve analytical chemistry problems for people like you. You are assured of the highest quality performance by our Quality Guarantee.

Quality from Start to Finish

The ITS staff takes great care to offer tests that provide results you can trust. This commitment to quality makes product accuracy and reliability the goal from the initial development stages through final packaging.

Quality control is active in every step of production: critical materials are evaluated to insure acceptable performance prior to use, manufacturing processes are documented, and each lot of finished product is traceable to its separate components. Product file samples are evaluated on a continuing basis, providing up-to-date shelf life information for the customer.

We strive to provide rapid and courteous service to customers who have questions, comments, or complaints. We value these contacts - they help us continue to provide the quality products customers have come to expect from ITS.



Sales



Quality Control



Manufacturing



Located at 1875 Langston Street, Rock Hill, SC, our 25,000 square foot facility houses all of our operations.

Thank you for considering our products.

Silver (Ag⁺)

The U.S. Patented SenSafe™ Silver strip methodology allows the silver ion (Ag⁺) to react with the TMK indicators for extremely low detection. Because TMK also reacts with oxidizers such as Chlorine, Bromine and Iodine, it is necessary to remove these interferences with glycine if you suspect their presence. The EPA Secondary Drinking Water Standard for Silver is 0.1ppm.



SenSafeSilver Check

Part Number 480045

Test Procedure: Dip one test strip into a 250ml (8oz) sample for 5 seconds with a constant, gentle, back-and-forth motion. Remove the strip and shake once, briskly, to remove excess water. After 10 seconds, match to the closest color spot within 30 seconds.

For better accuracy, fold the test strip in half so that the white handle covers the underside of the aperture (window).

The US EPA Maximum contamination Level for silver is 100 ppb

NOTE: Color chart prepared with standards at R.T. (22°C - 27°C). If outside this range refer to chart.

sample color chart

ppb (µg/l) 0.0 50 100 250 500 1000

Silver in Water Purification:
Silver is employed as a bactericide and algicide in an ever increasing number of water purification systems in hospitals, remote communities and, more recently, domestic households. Silver ions have been used to purify drinking water and swimming pool water for generations. New research into silver compounds is providing physicians with powerful, clinically effective treatments against which bacteria cannot develop resistance. An increasing trend is the millions of on-the-counter and under-the-counter water purifiers that are sold each year in the United States to rid drinking water of bacteria, chlorine, trihalomethanes, lead, particulates, and odor. Here silver is used to prevent the buildup of bacteria and algae in the filters. Of the billions of dollars spent yearly in the U.S. for drinking water purification systems, over half make advantageous use of the bactericidal properties of silver. New research has shown that the catalytic action of silver, in concert with oxygen, provides a powerful sanitizer, virtually eliminating the need for the use of corrosive chlorine.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480044	0, 0.005, 0.01, 0.025, 0.05, 0.075, 0.1 ppm (mg/l)	Colorimetric, TMK	30 Seconds	Bottle of 50 (with Glycine)
480044-G	0, 0.005, 0.01, 0.025, 0.05, 0.075, 0.1 ppm (mg/l)	Colorimetric, TMK	30 Seconds	Bottle of 50 (without Glycine)
481144	0, 0.005, 0.01, 0.025, 0.05, 0.075, 0.1 ppm (mg/l)	Colorimetric, TMK	30 Seconds	30 Packets (with Glycine)
481144-G	0, 0.005, 0.01, 0.025, 0.05, 0.075, 0.1 ppm (mg/l)	Colorimetric, TMK	30 Seconds	30 Packets (without Glycine)
480045	0, 50, 100, 250, 500, 1000 ppb (µg/l)	Colorimetric, TMK	15 Seconds	Bottle of 50
GLYCINE	Glycine reagent used to eliminate oxidizer interference	N/A	N/A	1 Bottle

Sulfate (SO₄²⁻)

The sulfate test can be used to quickly determine the sulfate content of drinking water, industrial waste (from galvanizing and leather industry), and wastewater. The US EPA Secondary Drinking Water Standard is 250 mg/L (ppm). The dip-and-read strip is decolorized by sulfate.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481200	0, 250, >500 ppm (mg/l)	Colorimetric	30 Seconds	30 Packets

Sulfide (S²⁻)

Hydrogen Sulfide (H₂S) is a flammable, poisonous gas with a characteristic rotten egg smell. Concentrations of 0.02 to 0.1 ppm are detectable by the average person. Hydrogen sulfide is evolved from numerous environmental sources such as bacterial decomposition of vegetable and animal material. It occurs naturally as a component of crude oil, natural gas, volcanic gas, and sulfur springs; and also as a pollutant of a variety of industrial operations including wastewater treatment plants.

Hydrogen sulfide and soluble metal sulfides are detected in water by several methods. SenSafe™ strip (481202, 481212) has a colored metal organic complex that is readily discolored by sulfide, and decolorization is proportional to the sulfide concentration.



The sulfide test #481197-1 uses a dip and read color reaction with a lead salt. Test #481197-20 uses a reagent strip that develops color in a test vial where color chart intensity with the lead salt is proportional to sulfide concentration. Kit #481201 is used for very low detection of sulfide and uses tartaric acid and zinc dust to generate hydrogen gas to evolve H₂S gas from a 100mL water sample. The hydrogen sulfide gas generated is then detected by a test strip impregnated with a mercury salt that reacts with sulfide to generate a color that is proportional to the sulfide concentration.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481197-1	0, 5, 10, 20, 30, 40, 50, 60, 80 ppm (mg/l)	Colorimetric	1 Second	Bottle of 50
481197-20	0, 0.3, 0.5, 1, 2 ppm (mg/l)	Colorimetric	20 Seconds	30 Packets
481201	Method A: <0.05, 0.05, 0.075, 0.1, 0.2, 0.25, 0.3, 1 ppm Method B: <0.005, 0.01, 0.02, 0.03, 0.05, 0.075, 0.1, 0.2 ppm	Colorimetric	2 Minutes or 5 Minutes	Bottle of 50
481202	<0.1, 0.1, 0.4, >0.8, <1, 1.5, 2.5, >5 ppm (mg/l)	Colorimetric	40 Seconds	Bottle of 50
481212	<0.1, 0.1, 0.4, >0.8, <1, 1.5, 2.5, >5 ppm (mg/l)	Colorimetric	45 Seconds	30 Packets

Total Dissolved Solids (TDS)

Total Dissolved Solids, or conductivity, is commonly measured with a meter. The shortcoming of meters is that they need calibration. Our Waterworks™ TDS strips are factory calibrated and inexpensive. Just dip and match the color to determine the TDS level in your tap water. The US EPA Secondary Drinking Water Standard is 500ppm for TDS.



WaterWorks™
Total Dissolved Solids
(in tap water)
Part Number 482029

TEST PROCEDURE:
Dip one test strip into water sample for **2 seconds**. Remove strip and shake once briskly to remove excess sample. **Wait 10 seconds** and match color with closest color on color chart. Complete color matching within the next 20 seconds.

sample color chart

PPM (mg/L)	Color
<50	Lightest yellow
100	Light yellow
250	Yellow
500	Orange-yellow
>750	Dark orange

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
482029	<50, 100, 250, 500, >750 ppm (mg/l)	Colorimetric	12 Seconds	Bottle of 50
482029-1	<50, 100, 250, 500, >750 ppm (mg/l)	Colorimetric	12 Seconds	Individual packets with color charts Sold in quantities of 1000

Tannin & Lignin

This new test allows tannin analysis in water in less than one minute. The test utilizes a ReagentStrip™ and vial. To test, simply fill vial with 100ml of sample water, dip one ReagentStrip™ into vial with constant up and down motion for 20 seconds, remove the strip, and match the dyed sample in the vial to the calibrated color chart to determine tannin concentration.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480004	0.0, 0.2, 0.5, 1, 2, 5, 10 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	50

Zinc (Zn⁺²)

Zinc can occur naturally in drinking water. However, contamination can also occur from galvanized pipes corroded by acid or soft water. Zinc in water normally does not pose a health risk, but high levels of zinc can cause temporary stomach irritation. When zinc and 2-carboxy-2'-hydroxy-5'-sulfoformazyl benzene, known as zincon, react, they form a complex. The color of the complex can be pink to lavender to blue depending on the concentration of zinc. The EPA Secondary Drinking Water Standard for Zinc is 5.0ppm.



WaterWorks™
Zinc Check
Part Number 480026

TEST PROCEDURE: Dip one test strip into water sample for **3 seconds**. Remove the strip and shake once, briskly, to remove excess water. **Wait 20 seconds**. Match with closest color **within the next 20 seconds**.

INTERFERENCES: Similar positive color development shows up with the presence of Cu²⁺ (>0.1mg/L), Mn²⁺ (>5mg/L), and Fe²⁺ (>10mg/L).

sample color chart

PPM (mg/L)	Color
0	Colorless
2	Light pink
5*	Pink
10	Light purple
20	Purple
40	Dark purple
100	Blue

* EPA MCL (Secondary)

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480026	0, 2, 5, 10, 20, 40, 100 ppm (mg/l)	Zincon	23 Seconds	Bottle of 50
480126	0, 2, 5, 10, 20, 40, 100 ppm (mg/l)	Zincon	23 Seconds	30 Packets
484012	0.0, 0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5 ppm (mg/l)	Colorimetric ReagentStrip™	1 Minute	50

How US Patented SenSafe™ Strips Work:

Insoluble colorimetric indicators are impregnated in the membrane / filter paper and positioned over the aperture. When a SenSafe™ strip is dipped into the water sample with back and forth motion, fluid flow is facilitated through the aperture which improves colorimetric reaction with the indicator up to 100-fold, when compared to other conventional test strips. Only ITS can offer this unique strip.



How A ReagentStrip™ Works:

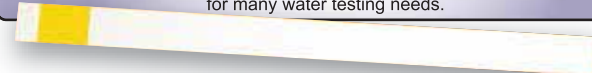
Now there is an alternative to powder pillows, powder packets, tablets, glass ampoules, and liquid systems: ReagentStrips™ have one or more test pads containing reagents for colorimetric detection of ions in water samples. By dipping a strip into a supplied vial, the reagent is released into the water sample. Discard the strip and match the color in the vial to a color chart. For even greater accuracy, test vials can be placed into a colorimeter (part no. CO7500B) for analysis. Contact ITS for an updated list of NEW ReagentStrips™ available.

CO7500B



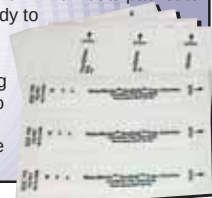
How WaterWorks™ Strips Work:

WaterWorks™ strips are designed using a combination of patented and proprietary chemistries. All needed reagents are precisely impregnated on the test pad. In comparison to standard powdered reagents, WaterWorks™ strips use approximately 1/100th the amount of chemicals. Designed to yield semi-quantitative and quantitative results, WaterWorks™ strips are ideal for use for many water testing needs.



What is a Packet?

Packets are a convenient way to package individual test strips. Providing total protection for the strip, foil packets are an ideal solution when you are working in varying conditions where the risk of exposure to extremely high humidity and moisture is possible. Each strip is carefully sealed in its own individual packet to protect it from exposure to moisture before you are ready to use it. Another benefit to foil packets is the size. Small enough to fit in your pocket, foil packets are an ideal solution when testing out in the field. Lastly, considering the size and protection of a foil packet, they are ideal to send to customers as a promotion or troubleshooting tool; saving you time and money compared to a service call.



4in1 City Water Check

4in1 City Water Check™ is ideal for service techs and homeowners who need a quick, accurate method for detecting basic ion concentrations in municipal water.



4in1 City Water Check™

PART NUMBER 480113

TEST PROCEDURE:

1. Dip one strip into a 250 ml (about 8 oz.) water sample for **5 seconds** with a gentle back-and-forth motion.
2. Remove the strip and shake once, briskly, to remove excess water. Wait an additional **20 seconds**.
3. Match pH, Total Alkalinity, Total Chlorine, and finally Total Hardness in this order, with the color chart on the right. Complete all readings **within 10 seconds**.

pH - end pad - MATCH 1st

2.0	4.0	5.0	6.5	8.5	9.5	10.5	12.0
-----	-----	-----	-----	-----	-----	------	------

TOTAL ALKALINITY (ppm) - second pad - MATCH 2nd

0	40	80	120	180	240	500
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TOTAL CHLORINE (ppm) - third pad - MATCH 3rd

0	0.2	1.0	4.0	10.0
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TOTAL HARDNESS (ppm) - pad nearest handle - MATCH 4th

0	50	120	250	425	1000
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SOFT → HARD → VERY HARD

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480113	pH: 2, 4, 5, 6.5, 8.5, 9.5, 10.5, 12 Total Alkalinity: 0, 40, 80, 120, 180, 240, 500 ppm (mg/l) Total Chlorine: 0, 0.2, 1, 4, 10 ppm (mg/l) Total Hardness: 0, 50, 120, 250, 425, 1000 ppm (mg/l)	Colorimetric	25 Seconds	Bottle of 25
481113-6	pH: 2, 4, 5, 6.5, 8.5, 9.5, 10.5, 12 Total Alkalinity: 0, 40, 80, 120, 180, 240, 500 ppm (mg/l) Total Chlorine: 0, 0.2, 1, 4, 10 ppm (mg/l) Total Hardness: 0, 50, 120, 250, 425, 1000 ppm (mg/l)	Colorimetric	25 Seconds	6 Packets
481113-30	pH: 2, 4, 5, 6.5, 8.5, 9.5, 10.5, 12 Total Alkalinity: 0, 40, 80, 120, 180, 240, 500 ppm (mg/l) Total Chlorine: 0, 0.2, 1, 4, 10 ppm (mg/l) Total Hardness: 0, 50, 120, 250, 425, 1000 ppm (mg/l)	Colorimetric	25 Seconds	30 Packets

WaterWorks 5

WaterWorks™ 5 is the complete single-dip solution for testing the quality of your water and the functionality of your water purification unit. In one simple dip and read procedure you get accurate results for Total Chlorine, Free Chlorine, Total Alkalinity, Total Hardness, and pH.



WaterWorks™ 5-Way Water Check

Part Number 480015

Test For:

- Total Chlorine
- Free Chlorine
- Total Alkalinity
- Total Hardness
- pH

TEST PROCEDURE:

1. Dip one strip in the water for **5 seconds** with a gentle back-and-forth motion.
2. Remove the strip, shake once, briskly, to remove excess water. Wait **25 seconds**.
3. Using the color chart, match pH, Total Hardness, Total Alkalinity, Free Chlorine, and Total Chlorine in this order. Complete matching **within 30 seconds**.

sample color chart

5th 10 4 10

4th 4 4

3rd 2 2

2nd 1 1

1st 0.5 0.5

0 0

ppm Total Chlorine - Match 5th

ppm Free Chlorine - Match 4th

ppm Total Alkalinity - Match 3rd

ppm Total Hardness - Match 2nd

pH (pad nearest handle) - Match 1st

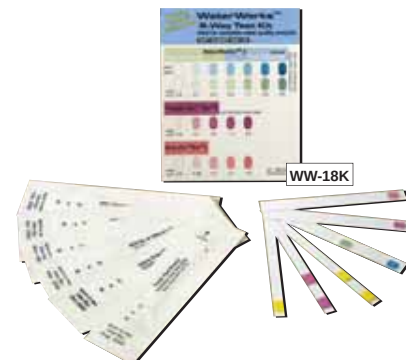
6.2	6.8	7.2	7.8	8.4
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Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
480015	pH: 6.2, 6.8, 7.2, 7.8, 8.4 Total Alkalinity: 0, 40, 80, 120, 180, 240 ppm (mg/l) Free Chlorine: 0, 0.5, 1, 2, 4, 10 ppm (mg/l) Total Chlorine: 0, 0.5, 1, 2, 4, 10 ppm (mg/l) Total Hardness: 0, 25, 50, 120, 250, 425 ppm (mg/l)	Colorimetric	30 Seconds	Bottle of 50
480115	pH: 6, 6.5, 7, 7.5, 8, 8.5, 9 Total Alkalinity: 0, 40, 80, 120, 240, 360 ppm (mg/l) Free Chlorine: 0, 0.1, 0.2, 0.5, 1, 2.5, 5 ppm (mg/l) Total Chlorine: 0, 0.1, 0.2, 0.5, 1, 2.5, 5 ppm (mg/l) Total Hardness: 0, 50, 120, 180, 250, 425 ppm (mg/l)	Colorimetric	28 Seconds	30 Packets

Tap Check

Tap Check™ was designed for the homeowner on municipal water. Giving accurate results in under 3 minutes, Tap Check™ is also ideal for service techs. With its safe chemistry and small size, Tap Check™ can easily be mailed to customers who are concerned whether or not their water purification system is working correctly.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
WW-10K	pH: 6, 6.5, 7, 7.5, 8, 8.5, 11 Total Alkalinity: 0, 40, 80, 120, 180, 240, 720 ppm (mg/l) Iron: 0, 0.1, 0.3, 0.5, 1, 5 ppm (mg/l) Total Chlorine: 0, 0.1, 0.2, 0.5, 0.8, 4 ppm (mg/l) Total Hardness: 0, 50, 120, 180, 250, 425 ppm (mg/l)	Colorimetric	4 Minutes	2 Packets of Each Test



Well Water Check

Well Water Check™ was designed for the homeowner on well water. Giving accurate results in under 3 minutes, Well Water Check™ is also ideal for service techs. With its safe chemistry and small size, Well Water Check™ can easily be mailed to customers who are concerned whether or not their water purification system is working correctly.

Cat. No.	Test Parameters:	Test Methodology:	Test Time:	No. of Tests:
481302	pH, Total Alkalinity, Total Hardness, Iron, Nitrate Nitrogen (as N), Nitrite Nitrogen (as N) See Applicable Detection Levels Below at Cat. # 481199	Colorimetric	3 Minutes	2 Packets of Each Test

7-Way Test Kit

WaterWorks™ 7-Way test kit is a good item for water store sales. Combining safe chemistry, value, and ease-of-use, customers will appreciate being able to monitor the quality of their water without worrying about the risks associated with traditional test methods.

Cat. No.	Test Parameters:	Test Methodology:	Test Time:	No. of Tests:
WW-14K	pH, Total Alkalinity, Total Hardness, Free Chlorine, Total Chlorine, Nitrate Nitrogen (as N), Nitrite Nitrogen (as N) See Applicable Detection Levels Below at Cat. # 481199	Colorimetric	4 Minutes	2 Packets of Each Test

9-Way Test Kit

WaterWorks™ 9-Way test kit is a full range kit ideal for water shops looking for an affordable testing kit to offer their customers. Performing one test before the treatment unit, and one test after, allows the user to see the effectiveness of the unit.

Test	Range	Sensitivity	Recommended Range
Free Chlorine	0 - 5 ppm	0.1 ppm	0.2 - 4 ppm
Total Chlorine	0 - 5 ppm	0.1 ppm	< 4 ppm
pH	6.0 - 11	0.5	6.5 - 8.5
Total Alkalinity	0 - 720 ppm	40 ppm	40 - 240 ppm*
Total Hardness	0 - 425 ppm	50 ppm	50 - 125 ppm*
Iron	0 - 1 ppm	0.05 ppm	< 0.3 ppm**
Copper	0 - 2 ppm	0.1 ppm	< 1.3 ppm
Nitrate Nitrogen	0 - 20 ppm	0.5 ppm	< 10 ppm
Nitrite Nitrogen	0 - 10 ppm	0.15 ppm	< 1 ppm

* Not included in EPA standards at this time
** Included in EPA Secondary Drinking Water Standards

Cat. No.	Test Parameters:	Test Methodology:	Test Time:	No. of Tests:
WW-18K	pH, Total Alkalinity, Total Hardness, Free Chlorine, Total Chlorine, Nitrate Nitrogen (as N), Nitrite Nitrogen (as N), Iron, Copper See Applicable Detection Levels Below at Cat. # 481199	Colorimetric	4 Minutes	2 Packets of Each Test

COMPLETE Test Kit

A COMPLETE™ Testing Solution for Home Water Quality

COMPLETE™ is a multi-parameter kit designed to meet 100% of your testing needs. Covering 13 of the US EPA's top water quality parameter concerns, COMPLETE™ is a simple, accurate solution for analyzing your water. Designed using ITS' patented and proprietary strips, COMPLETE™ is safe to use since it requires no powders, liquids, or tablets. No technical training or instrumentation required makes COMPLETE™ easy to use. Full results can be performed in the home, lab, or on-site. COMPLETE™ is also a great solution to offer those customers who are most concerned with the quality of their drinking water and the safety of their family.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481199	Free Chlorine: 0, 0.05, 0.2, 0.6, 1.5, 4, 10 ppm (mg/l) pH: 2, 4, 5, 6.5, 8.5, 9.5, 10.5, 12 Total Alkalinity: 0, 40, 80, 120, 180, 240, 500 ppm (mg/l) Total Chlorine: 0, 0.2, 1, 4, 10 ppm (mg/l) Total Hardness: 0, 50, 120, 250, 425, 1000 ppm (mg/l) Nitrate Nitrogen (as N): 0, 2, 10, 20, 50 ppm (mg/l) Nitrite Nitrogen (as N): 0, 0.2, 1, 1.5, 3 ppm (mg/l) Iron: 0, 0.05, 0.1, 0.3, 1 ppm (mg/l) Copper: 0, 0.1, 0.5, 1, 2 ppm (mg/l) Sulfate: 0, 250, >500 ppm (mg/l) Chloride: 0, 250, 500 ppm (mg/l) Hydrogen Sulfide: Presence / Absence (See Cat. No. 481197-20) Bacteria: Presence / Absence (See Cat. No. 481197)	Colorimetric	4 Minutes + 48 Hours for Bacteria	2 Packets of Each Test



Well Driller's Test Kit



The latest additions to ITS' product line are the Well Driller's Test Kits. A great solution when fast, accurate, on-site results are required. The Well Driller's Test Kits allow you to achieve results before sending samples for laboratory testing; giving you critical time to take remediation steps, if necessary. Testing for 11 critical parameters, the Well Driller's Standard Test Kit (487988) is ideal for on-site use. Testing for 15 critical parameters, the Well Drillers Master Test Kit (487989) is ideal for supervisors and technicians who are responsible for coordinating on-site environmental testing. Being able to have all of the answers when you need them make both Well Driller's Test Kits the perfect solution.



Cat. No.	Test Parameters:	Test Methodology:	Test Time:	No. of Tests:
487988	Free Chlorine Water Check (481026), SenSafe Iron Check (480025), Water Metals Check (480309), Manganese Check (480027), Nitrate/Nitrite Nitrogen (480009), Total Hardness, 480008), Extended Range pH Check (481104), Sulfide (481202), Ultra Low Total Chlorine 480007), & 1 Bottle of Bacteria Check (481197)	Colorimetric	See Individual Product Specs	1 Bottle of Each
487989	Free Chlorine Water Check (481026), SenSafe Iron Check (480025), Water Metals Check (480309), Manganese Check (480027), Nitrate/Nitrite Nitrogen (480009), Total Hardness, 480008), Extended Range pH Check (481104), Sulfide (481202), Copper Check (480042), Ultra Low Total Chlorine 480007), Lead in Water (487997), Pesticide (487996), 1 Bottle of Bacteria Check (481197), & 10 Arsenic Tests (481396)	Colorimetric	See Individual Product Specs	1 Bottle of Each

Water Quality Sampler Kit

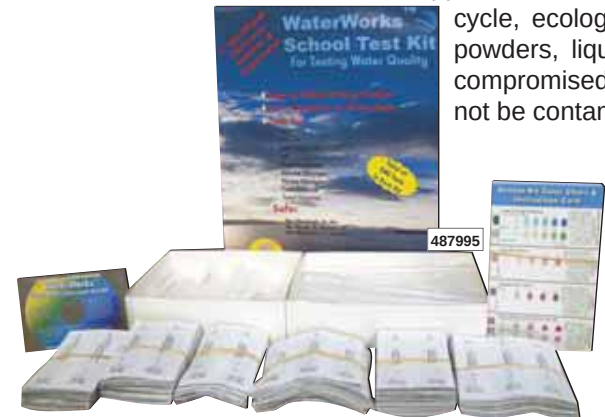
ITS' Water Quality Sampler Kit is ideal for water stores looking for a wide variety of products to offer their customers. The kit includes a full product sampling of our most popular selling retail items. Display these items next to your register, or in a prominent shelf location, and see your sales soar. Once you see which items are your best sellers, you can order cases to replenish your stock.



Promote Retail Sales!

Cat. No.	Test Parameters:	Test Methodology:	Test Time:	No. of Tests:
487991	Eco-Check (481345), Bacteria Check (481197), Well Water Check (481302), Tap Check (WW-10K), Water Metals Check (480309), & COMPLETE Kit (481199)	Colorimetric	See Individual Product Specs	2 Bottles of Each
CTD-31	Countertop Display for Products	Holds 32 blisters		1

School Test Kit



WaterWorks™ School Test Kit is ideal for teaching students, grades 4 and up, the important role water plays in our environment. Packed with suggested experiments, worksheets, and enough supplies for a classroom of 30 students, WaterWorks™ School Test Kit makes teaching the water cycle, ecology, or general environmental science fun, safe, and easy. Since there are no powders, liquids, tablets, or instruments required, the safety of your students will not be compromised. Additionally, each test strip is individually wrapped to ensure that the test will not be contaminated before use.

- Collect Real Test Results
- Safe Chemistry
- Enough for a Classroom of 30
- Interactive Learning
- 540 Tests!

Cat. No.	Test Parameters:	Test Methodology:	Test Time:	No. of Tests:
487995	pH, Total Alkalinity, Nitrate Nitrogen, Nitrite Nitrogen, Iron, Copper, Total Hardness, Free Chlorine, & Total Chlorine	Colorimetric	Varies Based on Parameter	60 Tests of Each Parameter, 30 Vials, 30 Pipettes, 30 Color Chart Cards, 1 Instructional CD-ROM

AquariaTest 1

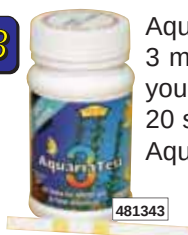


AquariaTest™ 1 is the perfect test kit for all pond, aquarium, and aquaculture customers. Measuring critical levels of ammonia, AquariaTest™ 1 works in both fresh and salt water. AquariaTest™ 1 uses the industry-standard Nessler reagent method, but with a slight twist; the Nessler reagent is impregnated, precisely, on the patented SenSafe™ strip pad.

A test vial is provided for each test with alkali reagent pre-added in the vial. The test procedure is as follows: add water sample to vial, shake briefly, immerse test strip for 30 seconds with back and forth motion, remove strip, match to closest color for ammonia result.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481342 for Fresh & Salt Water	0.0, 0.2, 0.5, 0.75, 1, 4, 10 ppm (mg/l)	Colorimetric, Nessler Reagent Method	60 Seconds	5 Packets with 5 Vials

AquariaTest 3



AquariaTest™ 3 is a great product to offer your salt water aquarium customers. Testing for the 3 most important salt water parameters, AquariaTest™ 3 offers accurate, quick results that your customers can rely on. Simply dip one strip into your water for 2 seconds, remove, wait 20 seconds, and match with the closest colors. All three pads are on one test strip, making AquariaTest™ 3 ideal for testing and enjoying your aquarium.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481343 for Salt Water	pH: 7, 7.4, 7.8, 8.2, 8.6, 9 Total Alkalinity: 0, 1, 2.5, 3.5, 4.8, 7.2 Meq/L Nitrite (NO ₂): 0, 0.5, 1, 3, 5, 10 ppm (mg/l)	Colorimetric, Phenol Red, Bromothymol Blue, & Zinc Reduction	22 Seconds	Bottle of 50

AquariaTest 4



AquariaTest™ 4 is a great product to offer your fresh water aquarium customers. Testing for the 4 most important fresh water parameters, AquariaTest™ 4 offers accurate, quick results that your customers can rely on. Simply dip one strip into your water for 2 seconds, remove, wait 20 seconds, and match with the closest colors. All four pads are on one test strip, making AquariaTest™ 4 ideal for testing and enjoying your aquarium.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481344 for Fresh Water	pH: 6, 6.5, 7, 7.5, 8, 8.5, 9 Total Alkalinity: 0, 1, 2.5, 3.5, 4.8, 7.2 Meq/L Total Hardness: 0, 50, 120, 180, 250, 425 ppm (mg/l) Nitrite (NO ₂): 0, 0.5, 1, 3, 5, 10 ppm (mg/l)	Colorimetric, Phenol Red, Bromothymol Blue, & Zinc Reduction	22 Seconds	Bottle of 50

Eco-Check



The best selling product in ITS' pond, aquarium, & aquaculture line, Eco-Check™ is the one-dip solution for proper testing. Since there are no powders, liquids, or tablets to measure, Eco-Check™ takes the hassles out of regular testing. With all of the needed chemistries precisely impregnated on the strip pads, you can be sure that you will achieve accurate results each time you test; helping to better protect your investment. Simply dip one strip into your water for 2 seconds with a gentle back-and-forth motion, remove, wait 25 seconds, and match to the closest colors for results.

Testing to Ensure Ideal Water Conditions

Test	Range	Sensitivity	Recommended Range
pH	5.5 - 9.5	0.5	6.5 - 8.0
Total Alkalinity	0 - 720 ppm	40 ppm	180 ppm
Total Hardness	0 - 1000 ppm	25 ppm	25 - 75 ppm
Nitrate Nitrogen	0 - 200 ppm	0.5 ppm	0 - 20 ppm
Nitrite Nitrogen	0 - 20 ppm	20 ppm	0 - 0.5 ppm



Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
481345 for Fresh Water	pH: 5.5, 6.5, 7, 7.5, 8, 8.5, 9.5 Total Alkalinity: 0, 40, 80, 120, 180, 300, 720 ppm (mg/l) Total Hardness: 0, 25, 75, 150, 300, 1000 ppm (mg/l) Nitrite (NO ₂): 0, 0.5, 1, 3, 5, 10, 20 ppm (mg/l) Nitrate (NO ₃): 0, 20, 40, 80, 160, 200 ppm (mg/l)	Colorimetric, Bromothymol Blue, & Zinc Reduction	27 Seconds	Bottle of 50

Handheld Radiation Detectors



The DX-1 & DX-2 instantly indicate levels of Beta, Gamma, and X-Ray radiation by audible clicks from an internal speaker and by the compressed-scale meter.

The DX-1 has an added feature: at higher radiation levels the speaker beeps, indicating elevated radiation levels. The beeping will begin above 10 mR/hr, intervals between beeps decreasing in relation to field strength, becoming a continuous alerting tone above 20 mR/hr. The DX-2 is useful for measuring higher levels (compressing several ranges into one scale) and features the ability to be recalibrated via a backside adjustment screw.

A single push-button activates the DX-1 and DX-2 when needed, conserving battery power. An LED indicator alerts you of battery condition upon each use. Applications for the units are many and may include checking for environmental contamination, industrial, clinical, field, school classroom, home use, or wherever radioactive materials are present. Perfect for rock and mineral enthusiasts for its simplicity and convenience in identifying natural radioactive rocks and ores. Also ideal for workers handling radioactive minerals, metals, and isotopes who are concerned about bringing home contamination on their clothes and shoes. Made in Latvia.

Cat. No.	Detection Levels:	Test Methodology:	Test Time:	No. of Tests:
DX-1	0-10 mR/hour (0-100 uSv/hr)	Industry standard Halogen-quenched Geiger-Mueller tube with thin glass (3mm) window	Instant Factory-Calibrated	1 Meter
DX-2	0-100 mR/hour (0-1000 uSv/hr)	Industry standard Halogen-quenched Geiger-Mueller tube with thin glass (3mm) window	Instant Factory-Calibrated with Recalibration Feature	1 Meter
DX-CASE	Soft Leatherette Carrying case for DX-1 & DX-2 Models	N/A	N/A	1 Case

ReagentStrip™ Reader



The Colourwave CO7500B Colorimeter, manufactured in England, is the cost-effective solution when instrument precision is required. Designed to be used with most of our ReagentStrip™ kits, the Colourwave Colorimeter has a versatile holder that accepts 10mm cuvettes, 10mm microcuvettes, and clear tubes from 7.5 to 15mm in diameter. The sealed membrane touch-pad controls feature on/off, R (zeroing), and T (transmission measurement as absorption or % transmission). Dial-in wavelengths at 440, 470, 490, 520, 550, 580, 590, or 680 make this unit both versatile and easy to use. The large, highly-visible 20mm LCD displays results from 0.00 to 2.00 (for absorption). The entire unit is powered by a rechargeable battery system and includes a 110V AC recharger and instructions. The Colourwave CO7500B Colorimeter is ideal for both field and lab work.

Cat. No.	Product:	Description:	Quantity:
CO7500B	ReagentStrip™ Colorimeter	Colorimeter used for ReagentStrips™	1 Meter

Turbidity Meter



Water treatment professionals used turbidity measurement to monitor the amount of particles in water. These measurements are used to determine the effectiveness of filtration steps during treatment processes. Turbidity meters typically use the principle of Nephelometry to measure the optical clarity (turbidity) of a sample. The measurement is expressed in Nephelometric Turbidity Units, or NTUs. Color in the sample (from humic substances, for example) can sometimes absorb some of the source light and skew the NTU values. This unit is designed to minimize that error by featuring an LED that emits at a near IR wavelength that is less likely to be absorbed by the sample.

This Brazilian-made, ergonomically designed turbidity meter is microprocessor controlled and menu driven. With simple three-button operation, the operator has easy access to instrument setup and a choice of automatic or manual calibration features. The unit features a rechargeable battery pack and comes in a protective, padded carrying case with instructions and calibration certificate.

Cat. No.	Product:	Description:	Quantity:
DM-C2	Portable Turbidity Meter	Portable Turbidity Monitor, 0 – 1000NTU, Resolution 0.01 / 0.1 / 1	1 Meter

Conductivity Meter



Every industrial, commercial or natural water source contains dissolved solids or salts. These impurities contribute to the scaling and corrosion of equipment, affect industrial and commercial processes and contribute to poor taste and other deficiencies in drinking water. Obtain reliable digital measurements of your water source with this affordable conductivity meter from ITS. Ideal for water treatment testing, as well as other industrial and commercial testing applications, this meter is designed with internal electrodes to prevent breakage and prolong the electrodes useful life. Large 12mm LCD gives readout in 3 different ranges. Ergonomic design fits comfortably in your hand. 9V battery is included. Made in China.

Cat. No.	Product:	Description:	Quantity:
80000	Conductivity Meter	Conductivity Meter, 199µS/cm, 1999µS/cm, 10mS/cm	1 Meter

TDS Meters



These Korean-made pocket meters are ideal for all water purification applications, wastewater regulation, aquaculture, and hydroponics. Hold function saves measurements for convenient reading and recording. Auto-off function shuts the meter off automatically after 10 minutes of non-use to conserve batteries. Measurement range (TDS3) is 0-9990ppm. From 0-999ppm, resolution is in increments of 1ppm; from 1,000 to 9,990ppm, the resolution is in increments of 10ppm, indicated by a blinking 'x10' image. Both meters are factory calibrated and can be recalibrated with a watch screwdriver - no need for messy solutions. TDS4 is available in "x10" mode: reads in increments only of 10ppm (0-9990ppm).

Cat. No.	Product:	Description:	Quantity:
TDS3	TDS Pocket Meter	Handheld TDS Meter, 0~9990ppm, Accuracy +/-2%	1 Meter
TDS4	TDS Pocket Meter	Handheld TDS Meter, 0~9990ppm & x10: 10~9990ppm, Accuracy +/-2%	1 Meter

pH Meter & Electrodes



The Jenco 6173 benchtop pH meter is a unique combination of functional appearance, useful features, quality measurements and great value. Quality Control, Research & Development, and Production at ITS exclusively use Jenco meters due to their reliability and reproducibility. Meter has a 2-year warranty.

Features:

Larger LCD display	Built in buffer temp. coefficient
Buffers recognition	Autolock
Electrode offset recognition	Touch keys with audio feedback
Electrode slope recognition	Power down memory

Satisfaction Guaranteed

Cat. No.	Product:	Description:	Quantity:
6173	Jenco pH Meter	Bench-top pH meter w/ Large LCD Display, 2yr Warranty	1 Meter
600P	pH Electrode	pH/Reference Electrode w/ BNC Connector, 3ft. Cable	1 Electrode
6230A-ST	Stainless Steel Thermistor	Stainless Steel Thermistor 10kΩ, 8-pin Connector	1 Thermistor
007N	pH Electrode Holder	Plastic Electrode Swing Arm Holder	1
6007D115	pH Meter AC Adapter	AC Adapter for Bench-top Meter	1

Pocket Digital Scale



This super thin, sleek design digital pocket scale is ideal for both field and lab work. Small enough to fit in your pocket, the 150g capacity scale features a flip-up, hinged protective lid, auto power off, and weighs in grams, ounces, carats and troy ounces. Made in China.

Cat. No.	Product:	Description:	Quantity:
CS-56	Pocket Digital Scale	Pocket Digital Scale, 150g/0.05g (g, oz, ct, dwt) - 0.01 Sensitivity	1 Scale

Timers



810005 features the largest display available on a timer: 3 x 2 1/2" (76 x 63mm). Can be easily read from across a room. Simultaneously displays either one count up channel and a clock, or two count down channels. All channels have a range of 24 hours with 1 second resolution. Also indicates how much time has elapsed after a countdown alarm sounds and conveniently recalls the last timer setting for reuse.

810046, although small and easily portable, features a large display with 3/4" high digits. Also unique is an auto-power-off feature to extend battery life (operates only when the timer is idle for 10 minutes and will not interrupt a timing sequence). Counts down from 100 minutes with 1-second resolution. Short warning alarms sound at 3 and 5 minutes prior to the final 30-second alarm. Automatically records elapsed time following the alarm for up to 20 minutes, or until stopped. A memory recalls the last timer setting for repetitive tests. Has a built in stand, pocket clip and magnetic back.

Cat. No.	Product:	Description:	Quantity:
810046	Large Display Pocket Timer	Counts down from 100 minutes with 1-second resolution, 2.5" x 2.5" x 0.5", weight: 2.4oz	1
810005	Large Display Timer (white)	Counts down from 24 hours with 1-second resolution, elapse time feature, 5" x 3.75" x 0.5", weight: 6.7oz	1

Labware

A wide variety of Bel-Art labware (except micro-cuvettes and transfer pipettes), manufactured to the highest quality specifications, is available through ITS to meet your needs.



Cat. No.	Product:	Description:	Quantity:
112117	Micro-Cuvettes	2ml for ReagentStrip™ test kits	100
F18515-0000	Cuvette Holder	Holds 20 cuvettes	1
F26210-0000	Graduated Beaker	Plastic, 50ml	12
F26211-0000	Graduated Beaker	Plastic, 100ml	12
F26213-0000	Graduated Beaker	Plastic, 250ml	6
F26215-0000	Graduated Beaker	Plastic, 600ml	4
F28690-0000	Graduated Cylinder	Plastic, 10ml	1
F28691-0000	Graduated Cylinder	Plastic, 25ml	1
F28692-0000	Graduated Cylinder	Plastic, 50ml	1
F28693-0000	Graduated Cylinder	Plastic, 100ml	1
F28694-0000	Graduated Cylinder	Plastic, 250ml	1
F28695-0000	Graduated Cylinder	Plastic, 500ml	1
F11643-0238	250ml Vented Wash Bottle	Plastic, "Label Your Own Bottle"	3
F11643-0222	250ml Vented Wash Bottle	Plastic, "ACETONE"	3
F11643-0237	250ml Vented Wash Bottle	Plastic, "ETHANOL"	3
F11643-0223	250ml Vented Wash Bottle	Plastic, "METHANOL"	3
F37144-0038	Magnetic Stir Bar	9.5 x 9.5mm	1
F37144-0034	Magnetic Stir Bar	19.1 x 19.1mm	1
F37144-0100	Magnetic Stir Bar	25.4 x 25.4mm	1
F37144-0112	Magnetic Stir Bar	38.1 x 38.1mm	1
JS-3823	PE Transfer Pipette	Graduated 0.5 - 3.0 ml	500

Standards

A wide variety of Ricca Chemical standards are available to meet your needs. ITS uses these standards to calibrate all of our chemistries due to their proven performance and quality.

Cat. No.	Product:	Description:	Quantity:
800-4	Arsenic Standard	Arsenic Standard, 1ml = 1mg As, 1000ppm as As (As_2O_3 in dilute HCl), 120ml	1
1800-4	Calcium Standard	Calcium Standard, 1ml = 1mg Ca, 1000ppm Ca ($CaCO_3$ in dilute HNO_3), 120ml	1
1950-16	Chloride Standard	Chloride Standard, 1ml = 0.5mg Cl, 500ppm Cl. APHA EPA for Chloride. (NaCl in water), 500ml	1
2100-4	Chromium Standard	Chromium Standard, 1ml = 1mg Cr, 1000ppm Cr (K_2CrO_4 in water), 120ml	1
2243-100P	Conductivity / TDS Standard	Conductivity/TDS Standard, 1000 micromhos/cm at 25°C/495ppm TDS as NaCl, 100ml	6
2244-16	Conductivity / TDS Standard	Conductivity/TDS Standard, 2000 micromhos/cm at 25°C/1030ppm TDS as NaCl, 500ml	1
2300-4	Copper Standard	Copper Standard, 1ml = 1mg Cu, 1000ppm Cu ($Cu(NO_3)_2 \cdot H_2O$ in dilute HNO_3), 120ml	1
2543-4	Cyanide Standard	Cyanide Standard, 1ml = 1mg CN, KCN in Dilute NaOH. APHA, ASTM, EPA for Cyanide, 120ml	1
5459-4	Nitrate (as N) Standard	Nitrogen Standard (as Nitrate), 1ml = 1mg N as NO_3 , 1000ppm N, (4,427ppm NO_3). ASTM, EPA for Nitrate Nitrogen (KNO_3 in water), 120ml	1
5461-4	Nitrite (as N) Standard	Nitrogen Standard (as Nitrite), 1ml = 1mg N and NO_2 , 1000 ppm N (3,285ppm NO_2). Meets ASTM and EPA Specs. (KNO_2 in water), 120ml	1
1601-16	pH Buffer	Buffer, Reference Standard, pH 10.00 +/- 0.01 at 25°C. Color-Coded Blue. pH - Temperature Chart on Label, 500ml	1
1501-16	pH Buffer	Buffer, Reference Standard, pH 4.00 +/- 0.01 at 25°C. Color-Coded Red. pH - Temperature Chart on Label, 500ml	1
1551-16	pH Buffer	Buffer, Reference Standard, pH 7.00 +/- 0.01 at 25°C. Color-Coded Yellow. pH - Temperature Chart on Label, 500ml	1
5740-16	Phenol Standard	Phenol Standard, 1ml = 1mg C_6H_5OH , 1000ppm Phenol. APHA, ASTM, and EPA for Phenols, 500ml	1
5839-4	Phosphate Standard	Phosphate Standard, 1ml = 1mg PO_4 , 1000ppm PO_4 (326.1ppm P), (KH_2PO_4 in water), 120ml	1
7100-4	Silver Standard	Silver Standard, 1ml = 1mg Ag, 1000ppm Ag ($AgNO_3$ in dilute HNO_3), 120ml	1
8665-32	TDS Fresh Water Standard	TDS Fresh Water Standard, 830ppm Fresh Water Ion TDS (by conductivity method). EPA/APHA "Very Hard" Synthetic Fresh Water Formulation. Hardness 280 - 320 mg/l as $CaCO_3$, 1L	1
9500-4	Zinc Standard	Zinc Standard, 1ml = 1mg Zn, 1000ppm Zn (Zn in dilute HNO_3), 120ml	1