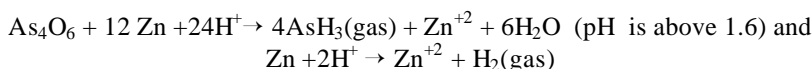


Thank you for your purchase of one of our arsenic test kits.

The Drinking Water standard of the US EPA and the World Health Organization's (WHO) allows a maximum contaminate level of 10 PPB($\mu\text{g/L}$) for Arsenic.

For the last three years Industrial Test Systems, Inc. (ITS) committed a major effort in research & development to come up with better and better arsenic test kits. We set out to make the test safer by using tartaric acid for the acid /zinc for hydrogen gas generation that converts arsenic in solution to arsine gas. Our first US Patent application for arsenic enabled the chemistry to be accelerated by the addition of metal enhancers such as iron and nickel salts. This permits Arsenic field tests to be completed quickly, in under 15 minutes, while detection down to 4 PPB ($\mu\text{g/L}$) was accomplished by the use of larger water samples. Our second US Patent application involved the design of a cap where the arsine gas generated has a more efficient colorimetric reaction with the Mercuric Bromide testing pad. With this design detection of arsenic below 1.0 PPB ($\mu\text{g/L}$) is possible. The reduction in all these kits utilizes zinc and includes the following reactions:



The analysis is performed in a closed reaction bottle (all plastic) with an appropriate volume of sample (50 to 500ml). After the 10 minute reduction reaction, the mercuric bromide strip is removed and matched to a standardized color chart. The testing pad is then compared to our trademarked Easy-Read™ color chart, developed by ITS to allow for more accurate color matching or Quick™ Arsenic Scan instrument. A light yellow to brown color change indicates that arsenic is present. The color intensity is proportionately related to the concentration of arsenic in the sample.

Comparison of our different arsenic field test kits:

Kit (Part No.)	Optimum Accuracy* $\mu\text{g/L}$ (PPB)	# of Scoops	Detection levels $\mu\text{g/L}$ (PPB) (via Easy-Read™ Color Chart)	Price in US \$ (No. of Tests)
QUICK™ Econo II (481304)	Below 50	2	3, 4, 5, 6, 8, 9, 10, 15, 24, 30, 40, 50, 60, 70, >70, >200	\$299.99 (100)
QUICK™ Econo(481298)	Below 250	1	0, 10, 25, 50, 100, 250, 500, 1000	\$179.99 (300)
QUICK™ Arsenic(481396) {ideal for Soil Analysis}	Below 100	3	0, 5, 10, 20, 30, 40, 50, 60, 80, 100, 150, 200, 250, 300, 400, 500	\$169.99 (100)
QUICK™ Low Range(481297)	Below 30	1(Lg)	3, 6, 8, 10, 12, 15, 19, 24, 30, 40, 50, 60, 70, 80	\$179.99 (50)
QUICK™ II (481303)	Below 15	3	2, 2.5, 3, 3.5, 4, 5, 6, 7, 10, 12, 14, 20, 30, >30, >50, >70, >100, >150	\$219.99 (50)
QUICK™ Low Range II(481301)	Below 8	1(Lg)	0.6, 1, 1.3, 1.7, 2, 2.5, 3, 4, 5, 7, 9, 10, 12, 15, 25, 30	\$349.99 (50)
QUICK™ Ultra Low II(481300)	Below 4	2 (Lg)	0.4, 0.6, 0.8, 1.0, 1.2, 1.5, 1.8, 2.2, 2.8, 4, 5, 6, 9, 11, 14, >25	\$299.99 (25)
Quick™ Arsenic Scan	0.01 color density		0.01 to >1.00 color density	\$1,599.99

*Optimum Accuracy can be expanded 5-fold by diluting the sample 1to5 using Arsenic-free water.

** Specifications subject to change without notice.

For best accuracy, ITS recommends that you run the water sample in duplicate. For greater precision and lower detection consider the purchase of our new Quick™ Arsenic Scan instrument. This unit is ideal for use with the entire Quick™ product line. Please contact our sales department at 1-800-861-9712 for more information or to order the Quick™ Arsenic Scan instrument.

Typical shelf life of kits is over 24 months. They include First Reagent (Tartaric acid with iron and nickel salts); Second Reagent, which contains an oxidizer (MPS); Third Reagent (zinc dust); and mercuric bromide strips, which contain toxic mercury (about 0.8 mg per strip). The strips should be discarded according to local environmental regulations. **The Second Reagent must not be shipped by passenger airlines.** Valuable information about the kit is in the MSDS literature, included in every kit. As a safeguard to minimize the operator's exposure to arsine and hydrogen gas, please run all tests in a well-ventilated area away from open flames and other sources of ignition; a fume hood is highly recommended.

Cordially yours,
Ivars Jaunakais, President of Industrial Test Systems, Inc. eMail: Ivars@cetlink.net

FOLLOW KIT INSTRUCTIONS CLOSELY.

Test Procedure: **RUN TESTS IN DUPLICATE!**

1. To each Reaction Bottle, slowly and carefully add the water sample to the upper marked line on the bottle (100 ml).
2. For best results verify that the water temperature is between 24°C to 30°C. Use a thermometer to verify the temperature of the sample.
3. Add 3 level pink spoons of First Reagent (Quick™ II) to each Reaction bottle. Cap securely with black cap and shake vigorously for **15 seconds**.
4. Uncap both Reaction Bottles and add 3 level red spoons of Second Reagent to each. Cap securely with black cap and shake vigorously for **15 seconds**.

NOTE: Allow the sample to sit for 2 minutes to minimize H₂S interference before proceeding to Step 6 (during wait, complete Step 5).

5. **While the test is incubating for 2 minutes**, prepare two **modified caps** as follows (NOTE: the cap and turret must be dry. If testing pad becomes wet, good results will be compromised):
 - a) Carefully remove one testing pad from the packet to avoid handling the Mercuric Bromide testing pad.
 - b) Position the testing pad (either side is okay) over the orifice and press down the turret handle over the pad until it locks into position in the cap (be sure the turret with handle is fully closed as illustrated in the picture). Be sure the red turret is level with the top of the cap. In order to ensure accurate results, the testing pad must completely cover the hole in the cap. This can be verified visually by inspecting the orifice from underneath the cap. The **modified caps** are now ready for use in Step 7.

6. Uncap both Reaction Bottles and add 3 level white spoons of Third Reagent to each. Recap securely with black caps and shake vigorously for **5 seconds** (five seconds).

7. Uncap both reaction bottles and recap securely using the **modified caps** within **45 seconds**. As you screw on the modified cap, be careful not to splash the sample water or reagents up to the testing pad. It is important that the testing pads remain dry during the test. Place the bottles in a well-ventilated area where they will not be disturbed. You will notice numerous small hydrogen gas bubbles generated from the Tartaric Acid and Zinc Dust Reagents.

8. **Start timer for 10 minutes.**

9. **After the 10 minute wait** (but no later than 12 minutes), pull up the turrets. Carefully remove the testing pads. The testing pads may need to be flattened which can be accomplished by pressing the testing pads between two clean pieces of paper and press gently. Use the Color Chart (Quick™ II) and match the testing pad color that developed on the exposed side **within the next 2 minutes** (colors oxidize when exposed to light). For best color matching results, use natural daylight, but not direct sunlight. If your kit includes a **Quick™ Scan** Test Pad Reader, follow the meter's instructions.

Use the visual Easy-Read™ color chart card for increased matching accuracy:

the reacted testing pad is positioned behind the punched holes

(view developed color of testing pad through the hole in the color chart) to confirm

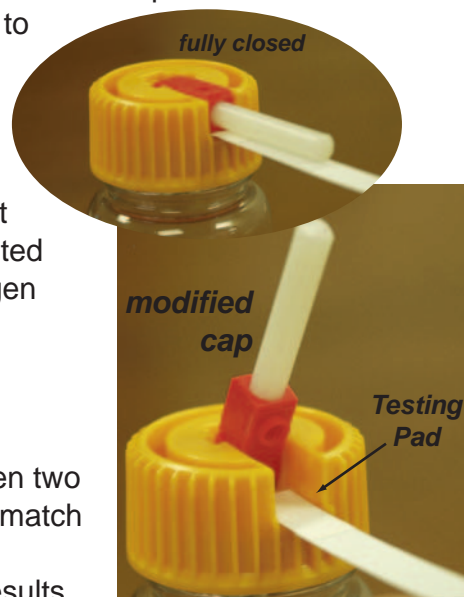
precise color match and Arsenic level. **NOTE:** Color reacted area on the testing pad will be circular in shape.

If reacted area is a different shape, testing results may have been compromised. Repeat the test carefully following the instructions.

10. Record your results.

NOTE: If your Arsenic level is above 15ppb do a 1 to 2 dilution; above 30ppb do a 1 to 3 dilution; above 45ppb do a 1 to 4 dilution, etc...This allows high levels of Arsenic above the optimum detection level range of 15ppb to be determined. Use Arsenic-free water for dilution(s). When you record your diluted water result be sure to multiply by dilution factor for your true Arsenic value.

ATTENTION: After testing is completed, pour reacted liquid in the bottle down a drain that is not used for food preparation and flush with water. Rinse the bottle and black cap with clean water. Shake off excess water before running next test. It is important that before you run the next test that the entire modified cap is dried with a soft tissue, especially if you plan to run the next test immediately. Store **used** testing pads in plastic bag marked "Used Mercuric Bromide (HgBr₂) Test Strips", keep inaccessible to children and pets, and dispose according to local environmental regulations.



WARNING: Hydrogen and Arsine gases are generated during the test. Work in a well-ventilated area away from open flames and other sources of ignition. Review the Material Safety Data Sheet before handling any chemicals.

About Quick™ II Arsenic Testing Kit #481303

This test detects total inorganic Arsenic (As III and As V)

This Arsenic Test Kit provides a safe, simple, and precise way to test for Arsenic from 0 to 15 µg/L and from 15 to 30 µg/L (for approximate Arsenic values). For accurate results when Arsenic value is above 15 µg/L, perform a dilution of the water sample so that the value will read below 15 µg/L. Follow the instructions carefully to get reliable results. All components are supplied in the kit except for a timer. This test tolerates up to 2.0mg/L Hydrogen Sulfide without interference. Higher levels of Hydrogen Sulfide can be corrected for by diluting (only where sensitivity needs are not compromised). There were no interferences from other components typically found in tap water. It is recommended that the water sample be 24°C to 30°C. For future reference, record the temperature at which the sample was run. Use all reagents and test strips within the allowed shelf life as marked on each container.

Chemistry of the Reaction:

Inorganic Arsenic compounds in the water sample are converted to Arsine (AsH₃) gas by the reaction of Zinc Dust and Tartaric Acid. Ferrous and Nickel salts (U.S. Patent Pending) have been added to enhance this reaction. The special modified cap assembly (Patent Pending) allows essentially all of the Arsine gas to convert the Mercuric Bromide on the testing pad to mixed Mercury halogens (such as AsH₂HgBr) that appear with a color change from white to yellow or brown. Potassium Peroxymonosulfate is added to oxidize Hydrogen Sulfide to Sulfate.

PRECAUTIONS: Hydrogen gas and Arsine gas are generated during the reaction. Work in a well-ventilated area away from fire and other sources of ignition. All reagents are unsuitable for human consumption.

Kit components:

- 2 Reaction Bottles, clear PVC, with 100ml line
(Reorder # 481196-QII)
- 2 Turret caps (Reorder #481300-CII)
- 3 Plastic Spoons (one large pink spoon for First Reagent; one small red spoon for Second Reagent; and one small white spoon for Third Reagent)
(Reorder # 481196-QII)
- 1 Large Bottle of First Reagent (190 gm) (Reorder # 481196-D)
- 1 Small bottle of Second Reagent (35 gm) (Reorder # 481196-E)
- 1 Small Bottle of Third Reagent (90 gm) (Reorder # 481196-F)
- 50 packets of Arsenic testing pad strips – Caution: each test strip pad contains about 1 mg Mercuric Bromide (HgBr₂). (Reorder # 481196-P50)
- Instructions for Accuracy, Test Procedure, and Instructions for Sample Dilutions
(Reorder # 481303-QII)
- Material Safety Data Sheet (Reorder # 481300-M)
- Plastic Bag for Used Test Strips (Reorder # 481196-J)
- 2 Black Caps for mixing (Reorder # 481196-BLK)
- Plastic case for components
- Easy-Read™ Color Chart for Quick™ II
- Thermometer – mercury free (Reorder # 481196-T)

WARNING: Hydrogen and Arsine gases are generated during the test. Work in a well-ventilated area (such as a laboratory hood) away from open flames and other sources of ignition. Review the Material Safety Data Sheet before handling any chemicals.



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Quick™ II

ADDITIONAL INSTRUCTIONS FOR ADDED ACCURACY

1. After the test has been run, rinse out the reaction bottles with clean tap water as soon as possible. When the reaction chemicals are allowed to sit in the reaction bottles beyond the incubation time (10 minutes), the Zinc will begin to adhere to the bottom of the bottles. When this occurs, you must clean the reaction bottles thoroughly with a bottle brush. Another method is to use 20% Hydrochloric Acid (reusable) rinse after the bottles have been cleaned as best as possible; be sure to do a final rinse of the bottles with clean tap water before running the next tests.
2. Excessive levels of Hydrogen Sulfide (above 2.0 ppm) can interfere by elevating the Arsenic result of this test; Hydrogen Sulfide gives a similar color reaction with the testing pad as Arsine. Industrial Test Systems, Inc., sells Hydrogen Sulfide detection kits (part # 481197-20) for quick, accurate verification of the Sulfide. The test kit detects levels of 0.3, 0.5, 1.0, and 2.0 mg/L (ppm). The Hydrogen Sulfide test kit contains all components necessary to run the test, and is economically priced at \$15.99 for 30 tests. You can overcome Hydrogen Sulfide levels above 2.0ppb in two ways: First, allow water sample to sit at room temperature, exposed to air for 8 hours (typically 50% of the gas is dissipated for every 8 hours). Second, use double the amount of Second Reagent and the Hydrogen Sulfide gas tolerance of the test is increased. Contact ITS for more details if you have Hydrogen Sulfide interference concerns.
3. When matching your test strip pad with the colors on the Easy-Read™ color chart, a suggestion that may be helpful is to find a color that is clearly lighter than the test strip pad and make note of it (as an example, we will use a value of 3.0 ppb). Next, find a color that is clearly darker than the test strip pad (as an example, we will use a value of 5.0 ppb). By defining the lowest and highest possible value; you have narrowed your final match (in our example, the possible selections would be 3.5 or 4.0 ppb). This way color matching becomes less aggravating and more precise. Careful color matching will ensure the best possible result. After color matching, the strip can be preserved by placing the reacted strip back into the packet to minimize exposure to light and the atmosphere.
4. Before using the test kit for unknown samples, it is highly recommended that you use the kit on a sample with a known Arsenic concentration value, or with a sample that has been prepared using an Arsenic standard. By taking a “practice run” of the test, you will familiarize yourself with all of the procedures necessary to ensure accurate testing results. Additionally, you will have the opportunity to become familiar with the process of color matching, which will also help to ensure accurate test results. In order to achieve the most precise results, we suggest running the test in duplicate.
5. When this test is properly performed, the development of the color is uniform in color and should be contained within the circle on the rectangular testing pad. If the color is not uniform or entirely within the circle, the result should be treated as suspect. It is recommended that you rerun the test if this is encountered. It is very important that the testing pad and cap with turret be assembled with the utmost attention. Two modified cap assemblies are supplied. Typically, over 50 tests can be run with each assembly. If non-uniform color development occurs with an assembly, usually the cap with turret handle is suspect and may be damaged. The damaged cap/turret should not be used for further tests. Do not use old components from other kits. Interchanging components may result in inaccurate results since each kit is Quality Control released for accuracy with its given components. Two conditions can result in getting a false high reading: the presence of Hydrogen Sulfide above 2.0ppm; or color matching incorrectly because of poor lighting conditions or the existence of color blindness.
6. The temperature of the water sample is very important to ensure accurate results. As an example, a water temperature of 20°C may result in the color development on the test strip pad to be 30% lighter (a false low reading can occur). To ensure a proper water temperature, the sample can be heated in a microwave oven or heated water bath (if available). The water sample temperature should be between 24°C to 30°C before testing begins. NOTE: Because the chemistry involved is exothermic, the water temperature after the reaction will typically rise 3°C.
7. For this test, the water sample cannot be preserved with Nitric Acid or any other method. It is best that the water sample be freshly drawn and run within 8 hours. Water samples held for 24 hours may read as much as 20% lower. Small amounts of strong acids will interfere with the test results. The water sample should not contain any significant amount of buffers. If you are planning to send a duplicate sample for ICP laboratory verification, follow preservation requirements for that sample only.

We hope that these helpful comments aid in accurate results. If you have any questions or comments, please feel free to call me at 1-803-329-0162, ext. 210 or by email at: howardray@cetlink.net.

Again, thank you for purchasing our U.S. Patent-Pending Quick™ II Kit.

Sincerely,
Corlyss B. Lewis, Research Chemist

Instructions for Sample Dilutions

Equipment required, but not supplied:

- Graduated Cylinders or Volumetric Flasks
- Calculator

Each version of ITS' Arsenic kit has an optimum detection range. If your result gives a value above the optimum level you should dilute the water sample with Arsenic-free water and retest. Some common water sample dilutions are as follows:

Dilution	Volume of Water Sample	Volume of Arsenic-free Water	Total Volume	Dilution Factor
1:2	500ml	500ml	1000ml	2
1:3	333ml	667ml	1000ml	3
1:4	250ml	750ml	1000ml	4
1:5	200ml	800ml	1000ml	5
1:6	167ml	833ml	1000ml	6
1:8	125ml	875ml	1000ml	8
1:10	100ml	900ml	1000ml	10

How to Dilute Sample:

Assume a 1:4 dilution, as an example. Measure 250ml of the water to be tested with a graduated cylinder (glass or plastic) and add 750ml of dilution water (use Arsenic-free tap water, deionized, distilled, or reagent-grade water). Mix thoroughly and use this diluted sample to run the Arsenic Kit test as instructed. After obtaining the Arsenic value in ppb or $\mu\text{g/L}$ on the diluted sample, be sure to multiply the result by the dilution factor (use a calculator for convenience). This multiplied value is your Arsenic concentration in the water sample.

ATTENTION:

Subject: Water Temperature below **24°C (75°F)** when using

- Quick™ II (part #481303)
- Quick™ Low Range II (part #481301)
- Quick™ Ultra Low II (part #481300)
test kits

When your water sample temperature is below **24°C (75°F)** and above **15°C (59°F)**, the Test Procedure Step 8 must run for **20** minutes (instead of 10 minutes) to obtain accurate results.

When your water sample temperature is below **15°C (59°F)** and above **5°C (41°F)**, the Test Procedure Step 8 must run for **40** minutes (instead of 10 minutes) to obtain accurate results

Quick™ Arsenic Scan Instructions

(Ihara R710 densitometer)

for Arsenic Determinations:

**INSTRUMENT IS FRAGILE -
DO NOT DROP**

Instrument Components:

1. Quick™ Arsenic Scan Unit (R710 Color Reflection Densitometer)
2. Operation Manual (109 page book)
3. Calibration Reference Card
4. 18 Month Limited Warranty and Registration Card
5. AC Adapter
6. Carrying Case
7. White Opaque Plastic Card (2 3/8" x 7")
8. Four (4) Data Tables for the Following Arsenic Test Kits:
 - a. Quick™ Low Range (part number 481297)
 - b. Quick™ II (part number 481303)
 - c. Quick™ Low Range II (part number 481301)
 - d. Quick™ Ultra Low II (part number 481300)

Note: The instrument is fully charged, calibrated, and ready for use when received.

1. Instrument setup:

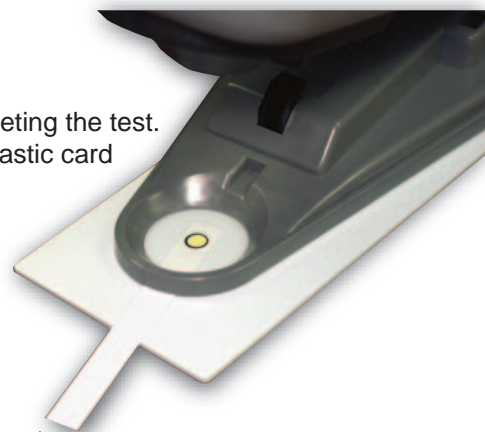
- a. Remove the instrument from the case and turn the instrument over with the bottom facing up. Locate the ridged, black latch between the two (2) screws near the round end of the measurement shoe. Slide it forward. The measurement shoe is now unlocked, and will lift up by spring action from the body of the instrument.
- b. Locate the "OFF/ON" switch at the square end of the instrument where the data port and DC 9V connector ports are located. Gently slide the switch to "ON".
- c. Turn the instrument upright so that the LCD screen and six soft keys (3 black buttons, menu, exit, help) are facing upward.
- d. Depress once any one of the six soft keys on top of the unit. The LCD display will turn on.
- e. The instrument is now ready to make density measurements.

Notes:

- a. The AC adapter (supplied) may be used while performing color density measurements. Be sure the power switch is "OFF" before connecting the adapter to prevent any surge in power.
- b. When the unit will stand unused for a long period of time slide the power switch to "OFF".
- c. Typically, over 50 measurements can be made when using the battery pack only.

2. Strip measurement:

- a. Run the test sample according to the arsenic kit instructions.
- b. Read the strip with the Quick™ Arsenic Scan instrument within 2 minutes of completing the test.
 - i. Place the reacted strip with colored circle facing upward on the white opaque plastic card (2 3/8" x 7"). It is very important that the white opaque plastic card is placed under the reacted strip for accurate measuring.
 - ii. Position the target circle of the base shoe over the color spot so that the spot is centered in the black outlined circle (as illustrated).
 - iii. Press the body of the instrument down until the optical head is in contact with the target circle. The message **MEASURING...** will appear in the LCD. A "Y" and a number next to the "Y" will appear in the LCD (For example, Y = 0.19 indicates a yellow color density of 0.19).
 - iv. Use the number in the LCD (in the example 0.19) and compare with the Data Table provided to determine the concentration of arsenic in the sample. Be sure that you are using the appropriate Data Table for your test kit.
 - v. Record the "Y" value and the concentration of Arsenic from the appropriate Data Table for future reference. Note: Use of the Quick™ Arsenic Scan unit will yield more precise results when compared to using the Easy-Read™ color chart for color matching determinations.



3. Calibration of Instrument:

See details on pages 34-40 in the Color Reflection Densitometer Operation Manual. It is recommended that "Quick Cal" (pages 39-40) be performed weekly. It is also recommended that "Standard Calibration" (steps 4, 5, & 8 in the manual) be performed when "Quick Cal" results are not within the allowed +/- variance of the "Y" values (White, Black, & Solid {Yellow}) listed in the reference table below:

Step 1: White	Step 2: Black	Step 3: Solid (Yellow)
Y value +/- 0.01	Y value +/- 0.06	Y value +/- 0.03

Data table for Quick™ II Arsenic kit	Part # 481302
---------------------------------------------	----------------------

Valid with Ihara model 710 densitometer, calibrated to reference serial# 72941

"Ihara (Y) Reading" = Yellow density value

Match the instrument reading to the corresponding As level (in ppb) as found in the table below:

Ihara (Y) Reading	As Level (ppb)
0	*BDL
0.01	BDL
0.02	BDL
0.03	BDL
0.04	BDL
0.05	BDL
0.06	BDL
0.07	BDL
0.08	BDL
0.09	BDL
0.10	BDL
0.11	1.0
0.12	1.3
0.13	1.7
0.14	2.0
0.15	2.3
0.16	2.6
0.17	2.9
0.18	3.1
0.19	3.3
0.20	3.5
0.21	3.7
0.22	3.9
0.23	4.2
0.24	4.4
0.25	4.7
0.26	4.9
0.27	5.2
0.28	5.4
0.29	5.6
0.30	5.8
0.31	6.0

Ihara (Y) Reading	As Level (ppb)
0.32	6.3
0.33	6.6
0.34	6.8
0.35	7.0
0.36	7.3
0.37	7.5
0.38	7.8
0.39	8.2
0.40	8.4
0.41	8.7
0.42	8.9
0.43	9.2
0.44	9.4
0.45	9.7
0.46	10.1
0.47	10.4
0.48	10.7
0.49	11.0
0.50	11.4
0.51	11.7
0.52	12.1
0.53	12.4
0.54	12.8
0.55	13.2
0.56	13.7
0.57	14.3
**0.58	14.9
0.59	15.4
0.60	16.2
0.61	17.0
0.62	18.0
0.63	19.0

Ihara (Y) Reading	As Level (ppb)
0.64	20.0
0.65	21.0
0.66	23.0
0.67	26.0
0.68	27.0
0.69	30.0
0.70	31.0
0.71	32.0
0.72	34.0
0.73	35.0
0.74	36.0
0.75	37.0
0.76	38.0
0.77	40.0
0.78	41.0
0.79	42.0
0.80	44.0
0.81	45.0
0.82	>45
0.83	>45
0.84	>45
0.85	>45
0.86	>45
0.87	>45
0.88	>45
0.89	>45
0.90	>45
0.91	>45
0.92	>45
0.93	>45
0.94	>45
0.95	>45

Ihara (Y) Reading	As Level (ppb)
0.96	>45
0.97	>45
0.98	>45
0.99	>45
1.00	>45

****Note:**
For best accuracy dilute and retest samples with values >0.58

*BDL =Below Detection Limit

prepared January 15, 2003
printed February 21, 2003
time 11:26 AM

MSDS 1
Material Safety Data Sheet

Section 1 Chemical Identification

Catalog # / Description: Part Number 481196-D
Name: First Reagent (Quick II)

Section 2 Composition / Information on Ingredients

CAS#: 87-69-4	L-Tartaric Acid	97.8%
CAS#: 7720-78-7	Iron (II) Sulfate • 7H ₂ O	0.7%
CAS#: 10101-97-0	Nickel (II) Sulfate • 6H ₂ O	1.5%

Section 3 Hazards Identification

Precautionary Statements:

- May be irritating to eyes and nasal passages.
- Low toxicity orally, moderate toxicity intravenously.
- Tartaric Acid is reported to have an oral rabbit LD50 at 5000 mg/kg, and a dermal rat LD50 at 485 mg/kg. Tartaric Acid Reagent has minimal toxicological effect. However, inhalation may cause irritation of respiratory tract; ingestion in large amounts may cause gastrointestinal upset; skin or eye contact may cause mild irritation; prolonged exposure may cause allergic reaction. Wash hands after use.
- Iron (II) Sulfate is harmful if swallowed or inhaled. Causes irritation to skin, eyes, and respiratory tract. Affects the liver. Oral mouse LD50: 1520 mg/kg.
- Nickel Sulfate is toxic. Harmful if swallowed. Possible risk of irreversible effects. May cause sensitization by inhalation and skin contact. Possible carcinogen. Toxicity data: oral rat LD50: 264 mg/kg.

Section 4 First-Aid Measures

- If swallowed, wash out mouth with water. Call a physician or the Poison Control Center as a precaution.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes.
- In case of contact with eyes, flush with copious amounts of water for at least 15 minutes.
- If inhaled, remove to fresh air. If breathing is difficult, give oxygen and seek medical advice.

Section 5 Fire Fighting Measures

Not Applicable since the amount of First Reagent per kit is negligible.

Section 6 Exposure Controls / Personal Protection

Do not expose to eyes, skin, or clothing. Keep away from children and pets. Wash hands thoroughly after handling. Maintain general hygienic practices when using this product.

Section 7 Physical and Chemical Properties

Appearance and Odor:

- Solid/semi-solid, white powder. Soluble in water.

Physical Properties:

- Melting Point: Not Applicable
- Vapor Pressure: Not Applicable
- Specific Gravity: Not Applicable
- Vapor Density: Not Applicable

Stability:

- Stable when stored under proper conditions.

Hazardous Polymerization:

- Will not occur.

Incompatibilities:

- Reacts with the rapid release of explosive Hydrogen gas when in the presence of Zinc, Silver, and/or Aluminum, and in the presence of water or moisture.

Section 8 Toxicological Information

Acute Effects:

- Do not breathe dust! Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Section 9 Other Information

The above information is believed to be correct but does not purport to be all-inclusive and shall be used ONLY as a guide. Keep away from children and pets. Store in a dry, cool place. Keep container tightly closed.

NOTE: If you desire to dispose of excess reagents, follow the appropriate precautions. At no time should First Reagent, Second Reagent, and Third Reagent be mixed together in dry (powder) form!



MSDS 2
Material Safety Data Sheet

Section 1 Chemical Identification

Catalog # / Description: Part Number 481196-E
Name: Second Reagent

Section 2 Composition / Information on Ingredients

CAS#: 10058-23-8	Potassium Peroxymonosulfate	43%
CAS# 7646-93-7	Potassium Bisulfate	23%
CAS# 7778-80-5	Potassium Sulfate	29%
CAS# 7727-21-1	Potassium Peroxydisulfate	3%
CAS# 546-93-0	Magnesium Carbonate	2%

Comments: NOTE: CAS# for mixture is 70693-62-8

Section 3 Hazards Identification

Emergency Overview:

- Physical Appearance: White, granular material
- Immediate Concerns: DANGER. CORROSIVE. Causes skin and eye damage. Wear goggles or face shield and rubber gloves when handling. May be fatal if swallowed. Irritating to nose and throat. Avoid inhalation or dust. Remove and wash contaminated clothing before reuse.

Potential Health Effects:

- Eyes: DANGER. Corrosive. Causes eye damage. Do not get in eyes.

Section 4 First-Aid Measures

EYES: If contact with eyes occurs: Immediately flush with cold water for at least 15 minutes. Then get immediate medical attention.

SKIN: If contact with skin: Rinse off excess chemical and flush skin with cold water for at least 15 minutes. If skin irritation develops, seek medical attention.

INGESTION: If swallowed: Do not induce vomiting. Drink 12 glasses of water to dilute the stomach contents. Never give anything by mouth to an unconscious person. Call a physician immediately.

INHALATION: If inhaled: Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If not breathing, give artificial respiration. Call a physician immediately.

Section 5 Fire Fighting Measures

- This product is not flammable or combustible.
- Will release oxygen when heated, intensifying a fire. Acidic mist may be present.
- Exercise caution when fighting any chemical fire.
- Extinguishing Media: Water

Section 6 Exposure Controls / Personal Protection

Do not expose to eyes, skin, or clothing. Keep away from children and pets. Wash hands thoroughly after handling. Maintain general hygienic practices when using this product.

Section 7 Physical and Chemical Properties

Appearance and Odor:

- Solid. Granular, free-flowing solid. White.
- Odorless

Physical Properties:

- Melting Point: Not Applicable
- Vapor Pressure: Not Volatile
- Specific Gravity: 1.1 to 1.4
- Vapor Density: Not Volatile

Stability:

- Stable when stored under proper conditions.

Hazardous Polymerization:

- Will not occur.

Incompatibilities:

- Mixing with compounds containing halides or active halogens can cause release of the respective halogens if moisture is present. Mixing with cyanides can cause release of hydrogen cyanide gas. Mixing with heavy metal salts such as those of cobalt, nickel, copper, or manganese can cause decomposition with release of oxygen and heat.

Section 8 Toxicological Information

Acute Effects:

- Skin Absorption: >11,000 mg/kg in rabbits
- Oral LD₅₀: 2,000 mg/kg (rat)
- Inhalation LC₅₀: >5 mg/l (rats) (4-hour)

Section 9 Other Information

The above information is believed to be correct but does not purport to be all-inclusive and shall be used ONLY as a guide. Keep away from children and pets.

ATTENTION: Because of the "corrosive" nature of this Reagent, transportation via passenger airlines of the Second Reagent is forbidden!

MSDS 3
Material Safety Data Sheet

Section 1 Chemical Identification

Catalog # / Description: Part Number 481196-F
Name: Third Reagent

Section 2 Composition / Information on Ingredients

CAS #: 7440-66-6
Chemical Name: Zinc >99%

Synonyms:

- Blue powder, granular zinc, zinc dust, zinc powder

Section 3 Hazards Identification

Precautionary Statements:

- Flammable solid. This material, like many powders, is capable of causing a dust explosion.
- If inhaled, remove to fresh air. If breathing is difficult, give oxygen and seek medical advice.

Section 4 First-Aid Measures

- If swallowed, wash out mouth with water. Call a physician or the Poison Control Center.
- In case of skin contact, flush with copious amounts of water for at least 2 minutes. Remove contaminated clothing and shoes.
- In case of contact with eyes, flush with copious amounts of water for at least 5 minutes. Call a physician.
- If inhaled, remove to fresh air. If breathing is difficult, give oxygen and seek medical advice.

Section 5 Fire Fighting Measures

Fire/Explosion Hazard:

- Dust may form a flammable/explosive mixture with air. May form explosive mixture with oxidizers.

Extinguishing Media:

- Sand or inert dry powder. Do not use water.

Section 6 Exposure Controls / Personal Protection

Do not get in eyes, on skin, on clothing. Keep away from children and pets. Wash hands thoroughly after handling. Use with adequate ventilation. Maintain general hygienic practices when using this product.

Section 7 Physical and Chemical Properties

Appearance and Odor:

Solid bluish-gray powder

Physical Properties:

- Melting Point: 419°C
- Vapor Pressure: Not Applicable
- Specific Gravity: 7,14
- Vapor Density: Not Applicable

Stability:

- Stable when stored dried and at room temperature.

Hazardous Polymerization:

- Will not occur.

Section 8 Toxicological Information

- Skin and eye irritation may result from intermittent exposure.
- Avoid creating dust. DO NOT breathe dust.

Section 9 Other Information

The above information is believed to be correct but does not purport to be all-inclusive and shall be used ONLY as a guide. Dispose of empty bottle as normal trash. Keep away from children and pets.

NOTE: If you desire to dispose of excess reagents, follow the appropriate precautions. At no time should First Reagent, Second Reagent, and Third Reagent be mixed together in dry (powder) form!

MSDS 4
Material Safety Data Sheet

Section 1 Chemical Identification

Catalog # / Description: Part Number 481196-TP
Name: Arsenic Quick Testing Pad

Section 2 Composition / Information on Ingredients

CAS #: 7789-47-1

Synonyms:

- Toxic ingredient is: Mercuric Bromide.

Section 3 Hazards Identification

Precautionary Statements:

- Toxic poison is contained in test strip pad (about 1mg / strip).
- Mercuric Bromide is reported to have an oral rat LD50 at 40mg/kg, and a dermal rat LD50 at 100mg/kg.

Section 4 First-Aid Measures

- If swallowed, wash out mouth with water. Call a physician or the Poison Control Center as a precaution.
- In case of skin contact, flush with copious amounts of water for at least 2 minutes. Remove contaminated clothing and shoes.
- In case of contact with eyes, flush with copious amounts of water for at least 5 minutes.
- If inhaled, remove to fresh air. If breathing is difficult, give oxygen and seek medical advice.

Section 5 Fire Fighting Measures

Not Applicable since the amount of Mercury per kit is negligible.

Section 6 Exposure Controls / Personal Protection

Do not expose to eyes, skin, or clothing. Keep away from children and pets. Wash hands thoroughly after handling. Maintain general hygienic practices when using this product.

Section 7 Physical and Chemical Properties

Appearance and Odor:

- Solid/semi-solid, white paper pad (containing Mercuric Bromide) attached to plastic strip.

Physical Properties:

- Melting Point: Not Applicable
- Vapor Pressure: Not Applicable
- Specific Gravity: Not Applicable
- Vapor Density: Not Applicable

Stability:

- Stable when stored under proper conditions.

Hazardous Polymerization:

- Will not occur.

Section 8 Toxicological Information

Acute Effects:

- Each strip contains about 1mg Mercuric Bromide so toxicological effect is minimal because of the amount. However, material is toxic and should be handled carefully to minimize exposure. Place all used test strips into plastic bag labeled "Used Test Strips". Dispose of used strips per environmental and regulatory requirements in your community. Wash hands after use.

Section 9 Other Information

The above information is believed to be correct but does not purport to be all-inclusive and shall be used ONLY as a guide. Dispose of the used test strips as regulations require. Keep away from children and pets.