SDS 1 Safety Data Sheet

Section 1 Product and Company Information Product Number: 485201-D Recommended use: Used to detect arsenic in water Restricted use: Not applicable Mfg. name: Industrial Test Systems, Inc. Mfg. address: 1875 Langston Street. Rock Hill, SC Emergency Telephone (poison control): 1-800-222-1222 Mfg. Telephone: 1-803-329-9712

Section 2 Hazard Identification Hazard(s): Not hazardous: food grade tartaric acid, less than 1% of other ingredients Required labeling: Not applicable

Section 3 Composition/Information on Ingredients L-Tartaric Acid 87-69-4 98.9 Food grade, N/A Potassium Permanganate 7722-64-7 N/A <1%

Section 4 First-Aid Measures Contact Area First-aid

- Flush with large amounts of cold water for 15 Eyes
- minutes. Call a physician immediately. Rinse with large amounts of water for 15 Skir minutes. Remove contaminated clothing Ingestion If swallowed, wash out mouth with water. Do not induce vomiting. Call a physiciar
- Inhalation If inhaled, remove person to fresh air source Call a physician. Most likely effect Irritation of skin and nose

Section 5 Fire Fighting Measures Extinguishing media: Use that which is appropriate for the surrounding fire.

Explosion Hazard: Not flammable or combustible Flash Point: N/A Special fire fighting procedures: N/A

Section 6 Accidental Release Measures Sweep up and dispose in normal trash. Do not breathe dust. Wash hands

Section 7 Handling and Storage Use standard hygienic practices (no eating, drinking, or smoking) around the product. Wash hands after use. Keep away from children and pets. Keep container tightly close Use in well ventilated area. Handle carefully to limit dust.

Section 8 Exposures Controls/Personal Protection OSHA Permissible Limits: No data Engineering controls: Adequate ventilation. Use dust mask if there is a large spill. Personal Protective Equipment (PPE): Use PPE appropriate for the surroundings. Other: Use gloves to prevent contact irritation. Use eye protection to prevent droplets from entering the eye. Ensure an evewash station is available.

Section 9 Physical and Chemical Properties Appearance: White, granular free-flowing solid Melting/Freezing point: N/A Decomposition temperature: No data Upper/Lower flammability limit: No data Solubility: Water soluble Viscosity: N/A Odor: odorless Initial boiling point/range: N/A Vapor Pressure: Not volatile Flash point: No data Odor threshold: N/A Evaporation rate: N/A Vapor density: N/A Flammability: flammable pH: Acidic Partition coefficient: N/A Relative density: No data Auto-ignition temperature: No data

> Section 10 Stability and Reactivity roduct is stable under normal conditions. Hazardous polymerization will not occur. Reacts with zinc, silver, and/o aluminum in the presence of water or moisture to rapidly release explosive hydrogen gas.

Section 11 Toxicological Information No data. Do not breathe dust Section 12 Ecological Information

Data not available

Section 13 Disposal Considerations Dispose in normal trash. Do not breathe dust. Never mix dry first reagent with dry second reagent

Section 14 Transport Considerations Not applicable - material is not bazardous

Section 15 Regulatory Information rmation 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

Section 16 Other Information Date Prepared: 5-3-17 Supersedes Revision: 10-10-16 Disclaimer: The information in this Safety Data Sheet is accurate

to the best of our knowledge. It is designed only as a guidance for safe use, handling, storage, and disposal. This information is not considered to be a warranty or a quality specification. This company shall not be held liable for any damage resulting from handling or from contact with the above product

Section 1 Product and Company Information Product Name: Second Reager Product Number: 485201-E Recommended use: Used to detect arsenic in wate Restricted use: Not applicable Mfg. name: Industrial Test Systems, Inc. Mfg. address: 1875 Langston Street, Bock Hill, SC Emergency Telephone (poison control): 1-800-222-1222 Mfg. Telephone: 1-803-329-9712 Section 2 Hazard Identification Hazard(s): TOXIC: May be fatal if swallowed. IRRITANT

SDS 2

Safety Data Sheet

Irritation to nose and throat. Required labeling: Not applicable

Section 3 Composition/Information on Ingredients Reagent CAS % Hazard Zinc 7440-66-6 >99 Toxic, irritant Other Metals Trade Secret <1%

- Irritant Section 4 First-Aid Measures
- Flush with large amounts of cold water for 15 Eyes nutes. Call a physician immediately Skin Wash with soap and water for 15 minutes
- contaminated clothing If swallowed, wash out mouth with water. If a
- large amount is swallowed, call a physician. Antidote: Calcium disodium edetate/dextrose intravenous: Calcium disodium edetate/procaine, intramuscula

If inhaled, remove person to fresh air source Inhalation Call a physician Most likely effect Irritation of skin and nose

Section 5 Fire Fighting Measures Extinguishing media: Dry chemical, sand, lime, soda ash,

Explosion Hazard: Very fine dust may form explosive nivtures with air Flash Point: N/A Special fire fighting procedures: Do

not use water or foam Section 6 Accidental Release Measures Do not touch spilled material. Avoid heat, flames, sparks

and other sources of ignition. Remove sources of ignition Collect material into suitable, loosely covered container for disposal. Do not get water directly on material. Section 7 Handling and Storage Use standard hygienic practices (no eating, drinking, or smoking) around the product. Wash hands after use. Keep away from children and pets. Keep container tightly closed

Use in well ventilated area. Handle carefully to limit dust Store in a cool, dry place Section 8 Exposures Controls/Personal Protection OSHA Permissible Limits: N/A Engineering controls: Adequate ventilation. Use dust mask

if there is a large spill. Personal Protective Equipment (PPE): Use PPE appropriate for the surroundings. Other: Use gloves to prevent contact irritation. Use eve protection to prevent droplets from entering the eye. Ensure

an evewash station is available. Section 9 Physical and Chemical Properties Appearance: Gravish, powdery so

Melting/Freezing point: 420°C/N/A Decomposition temperature: No data Upper/Lower flammability limit: No data Solubility: reacts Viscosity: N/A Odor: odorless Initial boiling point/range: N/A Vapor Pressure: 1mmHg @ 487°C Flash point: No data Odor threshold: N/A Evaporation rate: N/A Vapor density: N/A Flammability: flammable pH: N/A Partition coefficient: N/A Relative density: 7.14

Auto-ignition temperature: No data Section 10 Stability and Reactivity Product is stable under normal conditions. Hazardous

polymerization will not occur. Finely divided powder may react with water. Keep away from acids, bases, metals, oxidizers, reducing agents, combustible materials. Section 11 Toxicological Information Eye Contact: Dust may cause mechanical irritation or iniurv

to the surface of the eye, with discomfort, reddening, and tearing. Direct contact may cause serious corneal burns Skin Contact: Dust may cause mechanical irritation and mild dermatitis

Ingestion: Large oral doses may cause gastrointestinal distress vith stomach cramps, dehydration, electrolyte imbalance, abdominal pain, nausea, vomiting, hematemesis, diarrhea ethargy, immune system effects, fever, dizziness, tightness ir the throat, shock, collapse, renal failure, and death.

Section 12 Ecological Information Data not available. Section 13 Disposal Considerations

Dispose in normal trash. Do not breathe dust. Never mix dry first reagent with dry second reagent. Section 14 Transport Consideration Not applicable - packaged as part of a reagent set

Section 15 Regulatory 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. Section 16 Other Information Preparer H

Date Prepared: 8-3-22 Supersedes Revision

Disclaimer: The information in this Safety Data Sheet is accurate to the best of our knowledge. It is designed only as a guidance for safe use, handling, storage, and disposal. This information is not onsidered to be a warranty or a quality specification. This company shall not be held liable for any damage resulting from handling or from contact with the above product

SDS 3 Safety Data Sheet

Section 1 Product and Company Information Product Name: Arsenic Quick Strip Product Number: 485201-G Recommended use: Used to detect arsenic in wate Restricted use: Not applicable Mfg. name: Industrial Test Systems, Inc. Mfg. address: 1875 Langston Street. Rock Hill, SC Emergency Telephone (poison control): 1-800-222-1222 Mfg. Telephone: 1-803-329-9712 Section 2 Hazard Identification Hazard(s): Pad contains Mercury. Required labeling: N/A

Section 3 Composition/Information on Ingredients Reagent: Mercuric Bromide CAS: 7789-47-1 RTECS#: OV7415000 %: Approx. 1mg Hazard: Oral LD., (rat) 40mg/kg

Section 4 First-Aid Measure Contact Area First-aid Eyes Flush with copious amounts of cold water for 5

minutes Skin Binse with large amounts of water for 2 minutes Remove contaminated clothing. Ingestion Binse mouth with water As a precaution call a

physician or Poison Control. Inhalation Evacuate to fresh air. If breathing is difficult. give oxygen and seek medical advice.

Most likely effect Irritation Section 5 Fire Fighting Measures Extinguishing media: Use that which is appropriate for the

surrounding fire. Explosion Hazard: None found Flash Point: N/A Special fire fighting procedures: N/A

Section 6 Accidental Release Measures Sweep up strips and put into a plastic bag labeled "Used

Test Strips," Dispose of used strips per local environmenta and regulatory requirements. Wash hands after use Section 7 Handling and Storage

Use standard hygienic practices (no eating, drinking, or smoking) around the product Wash hands after use Keen away from children and pets. Keep container tightly closed. Section 8 Exposures Controls/Personal Protection

OSHA Permissible Limits: N/A Engineering controls: N/A Personal Protective Equipment (PPE): Use PPE appropriate for the surroundings.

Other: Use gloves to prevent contact irritation. Use eye protection to prevent droplets from entering the eye. Ensure an eyewash station is available.

Section 9 Physical and Chemical Properties Appearance: Off-white pad on plastic handle Melting/Freezing point: N/A Decomposition temperature: No data Upper/Lower flammability limit: No data Solubility: N/A Viscosity: N/A Odor: odorless initial boiling point/range: N/A Vapor Pressure: N/A

Flash point: No data Odor threshold: N/A Evaporation rate: N/A Vapor density: N/A Flammability flammable

pH: N/A Partition coefficient: N/A Relative density: N/A Auto-ignition temperature: No data Section 10 Stability and Reactivity

Product is stable. Hazardous polymerization will not occur Firefighters should wear full protective clothing and self-contained breathing apparatus when fighting fires nvolving plastic and PVC materials.

Each strip contains about 1mg Mercuric Bromide so toxicological effects are minimal because of the low exposure. Material, however, is toxic and should be handled carefully to minimize exposure. Place all used test strips into a plastic bag labeled "Used Test Strips." Dispose of used strips per local environmental and regulatory requirements. Wash hands after use

requirements

lot applicable - the strips are not hazardous Section 15 Regulatory Information

design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g., minute or trace amounts of a hazardou chemical (as determined under paragraph (d) of this section), and does not pose a physical hazard or health risk

A Safety Data Sheet (SDS) is not required for articles. This

Section 16 Other Information Supersedes Revision: 9-21-16

Disclaimer: The information in this Safety Data Sheet is accurate considered to be a warranty or a quality specification. This company shall not be held liable for any damage resulting from

Our products are compliant with all 49CFR and IATA rules and regulations.

ABOUT KIT #485201:

This test detects soluble inorganic arsenic (As⁺³ and As⁺⁵)

Kit Components:

bromide (HgBr_)

2 yellow caps for mixing

· Plastic case for components

2 reaction bottles, clear PVC, with lines

50 powder pillows of First Reagent

This instruction booklet with SDS

50 powder pillows of Second Reagent

2 white caps, with white turret, for holding test strip

(2 bags of 50 powder pillows in 485201-100)

1 bottle of arsenic strips (#485200) with color chart label -

Caution: Each test strip pad contains about 1 mg mercuric

(2 bags of 50 powder pillows in 485201-100)

(2 bottles of arsenic strips in 485201-100)

This arsenic test kit provides a safe, simple, and reliable way to test for arsenic from 5 to 300ppb (μ g/L) (up to 1000ppb (μ g/L) when using 1:5 Dilution Method). Follow the instructions carefully to get reliable results. All components are supplied in the kit except for a timer and thermometer. The color chart was standardized at 24°C / 75°F. For reference purposes, 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.



Tests Arsenic (As⁺³/As⁺⁵) from 0-1000 ppb (µg/L) US Patent #11346825: Bangladesh Patent #1006667: Patent Pending - Europe & India

Part Numbers: 485201 & 485201-100

Asce

World's Fastest

Analytical Field Kit

Arsenic

74.922

Asce USED

US Patent #11346825; Bangladesh Patent # 1006667; Patent Pending - Europe and India

INTERFERENCES: This test tolerates up to 4ma/L hvdrogen sulfide without interference. No interference was found for this test kit for antimony up to 0.5mg/L. No interference from Iron or Sulfate was found. It is recommended that the water sample be 15°C -30°C / 59°F - 86°F.

Sample # 2 3 5 4 Location Date Result

HEADOUARTERS

Industrial Test Systems, Inc.

1875 Langston Street, Rock Hill, SC 29730 USA Phone: (800) 861-9712, (803) 329-9712, Fax: (803) 329-9743 Email: its@sensafe.com ARSENICKITS.COM

Revision: 10/20/22

EUROPEAN DISTRIBUTION CENTER

ITS Europe, LTD The UK Centre for Homeland Security Building 7. Chilmark Salisbury, Wiltshire SP3 5DU, UK Phone: +44 (0)1722 717911 itseurope@sensafe.com



Section 13 Disposal Considerations Dispose of the test strips according to regulatory

Section 14 Transport Considerations

his strip is considered an article under OSHA rules (CFR29, 1910.1200): "Article means a manufactured item other than a fluid or particle: (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or

SDS is provided as a courtesy.

Preparer: H. R. Date Prepared: 5-3-17

to the best of our knowledge. It is designed only as a guidance for safe use, handling, storage, and disposal. This information is not ling or from contact with the above produ

Reagent 2 Powder Pillows



CAUTION Test should be potured in well-so-stated

Reaction

Bottle

Arsenic

Reagent 1

Powder

Pillows

Test

Strips

White Turret Caps

Yellow

Mixing

Bag For

Strips

USED

Used Test

Caps

Troubleshooting

Problem	Possible Causes/Solutions
Low or no color development on reaction pad after 7 minute reaction time.	 Temperature of the sample may be below 15°C/59°F. If the temperature is between 5°C and 15°C, increase reaction time to 10 minutes. The strip may not have been inserted correctly. Run test again and verify strip pad is exposed to arsine gas. The reaction cap may have been loose. Run test again. The sample may contain organic arsenic or the arsenic is bound. Kit only tests for soluble inorganic arsenic. pH of the sample during 7 minute incubation is incorrect. pH should be between 1.5 to 1.7 at step 5, page 4.
Only part of the strip reaction pad has color.	 Strip pad may not be facing proper direction. Run test again. Reaction cap may have leaked. Run test again.
Little or no hydrogen gas bubbles occur after Second Reagent addition.	 Addition of First Reagent could have been omitted, run test again. Excess oil and grease will hinder or suppress rate of gassing, dilute sample and run test again. Strong acid may be present in sample as a preservative or from sample source because of where and how the sample was collected. Strong acids interfere with test. PH of water sample is too alkali. For proper hydrogen gas reaction the water sample with both reagents added should be around a pH of 1.5 to 1.7 at step 5.
Color on the pad suggests more arsenic is present than is expected.	 Possible interference, check for sulfide. Dilute sample 1:5 and run test again.
Interference due to elevated sulfide.	 Allow sample to sit at room temperature, exposed to air for up to 8 hours (typically 50% of the hydrogen sulfide gas is dissipated every eight hours). Run test again, using double the amount of First Reagent.
Color on the pad is darker than the highest concentration on the chart.	Dilute the sample with arsenic/sulfide free water, run test again.
Color on the arsenic test pad suggests arsenic recovery is below arsenic level expected.	 Cap may have leaked, run test again. Arsenic may be bound, insoluble, or organic. This kit only tests for soluble inorganic arsenic. Interference due to elevated nitrate, nitrite, hydrogen sulfide or lead (Pb⁻²) in water sample. Temperature may be too low. Run test again. Sample was preserved with strong acids. Run test again without preservative acids.

NOTE: If your arsenic level is above 300ppb (µg/L), retest with a 1:5 dilution factor. Fill the reaction bottle to the bottom line with the sample to be tested. Add arsenic-free water to the top line (50mL) of the bottle. This should improve accuracy of arsenic detection for this kit. When you record your results, be sure to multiply by 5 to determine the true arsenic value.

Suggestions For Best Accuracy

1. To gain confidence in using this test kit for unknown samples, it is highly recommended that you use the kit on a sample with a known inorganic arsenic concentration value, or with a sample that has been prepared using an arsenic standard. By making 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 help to ensure accurate test results. ITS suggests the test be run in duplicate for better accuracy.

2. The water sample must not be preserved with nitric acid or any other preservation method. Small amounts of strong acids will interfere with the test results; and therefore it is best that the water sample be freshly drawn and run within 24 hours. Some water samples held for over 24 hours may read low. 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.

3. The recommended temperature range is 15°C to 30°C / 59°F to 86°F. If the water temperature is between 5°C/41°F and 15°C/59°F, the reaction time is TEN minutes. If the water temperature is above 30°C / 86°F your result may read high (accelerator chemistry reacts too fast). The color chart is calibrated at 24°C / 75°F.

4. The zinc will float on top of the solution while the reaction is ocurring. This helps to prevent water splashes and also helps to minimize the strip wetness. In this method, the color development on the strip is not affected by the wetness of the strip. Since the zinc is floating on top of the test solution, the zinc will not stick to the reaction bottle which makes the reaction bottle easy to clean.

5. Cleaning of the bottle should be completed immediately. Be sure to rinse the reaction bottle with clean tap water before running the next test.

6. When matching your test strip pad with the colors on the color chart label, it may be helpful 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 10 ppb (µg/L)). Next, find a color that is clearly darker than the test strip pad (as an example, we will use a value of 30 ppb (ug/L)). By defining a lowest and highest possible value range we can assume that the correct color match is 20 ppb (µg/L). If the 20 ppb (µg/L) color matches, then you have determined vour arsenic level. In some cases, however, an exact color match will not be available. As an example, if your test strip pad is slightly darker than 20 ppb (µg/L) and slightly lighter than 30 ppb (µg/L), you can estimate a value of 25 ppb (µg/L) as your result. Following these easy steps can make color matching more precise. Careful color matching will assure the best possible result.

7. Levels of hydrogen sulfide above 4 ppm (mg/L) can interfere with this test, resulting in elevated arsenic readings. Our test kit will eliminate up to 4 mg/L of sulfide interference. To overcome hydrogen sulfide levels above 4 mg/L, allow the water sample to sit at room temperature, uncovered and exposed to air for 8 hours (about 50% of the H_aS gas dissipates for every 8 hours).

8. It has been determined that irrigation of crops with arsenic water increases the soil arsenic levels which can increase the arsenic content in the crop. This arsenic kit can be used for screening of arsenic levels in soil.

9. If you have any questions or comments, please feel free to contact us at 1-803-329-9712 or by email at: its@sensafe.com.

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 Safety Data Sheet before handling any chemicals.

E: To ensure complete transfer of reagent, shake or tap the packet before opening to move all reagent to the bottom.

Fill the reaction bottle, with 100mL of water to be tested, to upper line on bottle. For best results, the water temperature should be 59°F (15°C) 100mL - 86°F (30°C).



Add 1 powder pillow of First Reagent to the reaction bottle. Tightly cap the bottle with yellow mixing cap and shake 15 seconds vigorously.

Uncap bottle and add 1

Second Reagent. Tightly

cap the bottle with yellow

powder pillow of

cap and shake 5

seconds vigorously.



Wait 2 minutes to minimize sulfide interference.

(00:02:00)

1

3

5

Cap securely Capsuler fermement Encapsular firmemente غطاء آمن

Remove yellow mixing cap. Immediately recap the bottle tightly using the white cap (must be dry) with turret up (open).



Remove one Arsenic Quick[™] test strip from the bottle. Insert the test strip into the dry turret until the red line is even with the top of the turret so that the test pad and red line are facing the back of the white cap. Close (flip down) the turret. (Note: Steps 6 & 7 should be completed within 30 seconds. Make sure turret cap is dry before inserting strip.)

(00:00:05)



minutes. Allow the reaction to occur in an undisturbed. well-ventilated area. Reaction generates small hydrogen gas bubbles.



Match color Égaler le couleur Emparejar color ، تتطابق اللو ن

After the 7 minute wait open turret and remove test strip. Do not touch the reaction pad. Match within 30 seconds to color chart.

ATTENTION: After testing is completed allow the sample to settle. Pour the clear liquid down a sink that is not used for food preparation, and flush with water. Dispose of the wet zinc separately, according to the local regulations. Rinse the bottle, white cap, and yellow cap with clean water. Shake off any excess water and dry the white cap with turret with a soft tissue. Drying the white turret cap is especially important if you plan to run the next test immediately. Store the used strips in a plastic re-sealable bag. Keep the used strips inaccessible to children and pets, and dispose according to local environmental regulations.