

What is Specimen Validity Testing (SVT™)

Specimen Validity Testing (SVT™):

The Substance Abuse and Mental Health Services Administration (SAMHSA) administers the mandatory guidelines for Federal Workplace Drug Testing Programs (FWDTP) as specified by Executive Order 12564 and delineated in the Federal Register Vol. 53 FR 11970-11989 and Vol. 59 FR 29908-29931. Current employees, and those seeking employment, under the auspices of the FWDTP, or other federally mandated programs (e.g. DOT, DOE, NRC and FHWA) are all subject to testing for drugs-of-abuse in urine (DAU) and Specimen Validity Testing (adulteration). It is known that a significant number of unwilling participants in workplace drug testing programs attempt to substitute, modify or adulterate their urine samples in order to prevent detection of illicit drug use. Adulteration methods include addition of foreign substances to the urine sample or dilution of said sample. Dilution may be “in vitro” (i.e. addition of water directly to the sample) or “in vivo” (i.e. consumption of large volumes of liquid one to three hours prior to collection of the sample). Both forms of dilution decrease the concentration of drug in the test subjects urine. In vivo dilution is usually aided by consumption of a diuretic and “B” vitamins to color the urine yellow.



About SCITECK®'s SVT™ Adulteration Testing Products:

The Scientists at Sciteck and the company it evolved from, Chimera Research, have been providing liquid reagents to laboratories for specimen validity testing in urine specimens submitted for DAU testing since 1989. Sciteck has the most extensive patented and patent pending technology for SVT™ adulteration and SEIA™ SALIVA Drugs of Abuse reagents in the industry. The SVT™ line consists of assays for pH, Specific Gravity, Nitrite (Non-Corrosive), Aldehydes, Oxidants, Chromate, Creatinine, and Halogens to include bleach. All 8 assays are liquid ready to use reagents for use on automated chemistry analyzers (Hitachi, Olympus, Beckman, etc.) and all produce quantitative and / or qualitative results for each analyte. Sciteck also provides a complete line of integrated controls and calibrators. Sciteck Scientist were also the first to develop, design and patent On-Site Adulteration Testing products (**AdultaCheck®** series). Unlike our competitors Sciteck actually develops and patents new technology to make your job easier.

Specimen Validity Testing*

Prepared by: Division of Workplace Programs

Posted: February 2005

Specimen validity testing refers to the tests conducted by laboratories to determine if a urine specimen is dilute or has been adulterated or substituted. An adulterated specimen is a urine specimen containing a substance that is not a normal constituent or containing an endogenous substance at a concentration that is not a normal physiological concentration. A dilute specimen is a urine specimen with creatinine and specific gravity values that are lower than expected for human urine. A substituted specimen is a urine specimen with creatinine and specific gravity values that are so diminished or so divergent that they are not consistent with normal human urine. To report a specimen as dilute, adulterated, or substituted, the laboratory must conduct an initial validity test (the first test used to determine if a urine specimen is adulterated, dilute, or substituted) and a confirmatory validity test (a second test performed on a different aliquot of the original urine specimen to further support a validity test result). Adulterants detected in urine specimens include: acids, bases, nitrite, chromium (VI), halogens, glutaraldehyde, pyridine, and surfactants.

Adulterated

The following criteria have been established to report a specimen as adulterated:

- (1) The pH is less than 3 or greater than or equal to 11 using either a pH meter or a colorimetric pH test for the initial test on the first aliquot and a pH meter for the confirmatory test on the second aliquot;
- (2) The nitrite concentration is greater than or equal to 500 mcg/mL using either a nitrite colorimetric test or a general oxidant colorimetric test for the initial test on the first aliquot and a different confirmatory test (e.g., multi-wavelength spectrophotometry, ion chromatography, capillary electrophoresis) on the second aliquot;
- (3) The presence of chromium (VI) is verified using either a general oxidant colorimetric test (with a greater than or equal to 50 mcg/mL chromium (VI)-equivalent cutoff) or a chromium (VI) colorimetric test (chromium (VI) concentration greater than or equal to 50 mcg/mL) for the initial test on the first aliquot and a different confirmatory test (e.g., multi-wavelength spectrophotometry, ion chromatography, atomic absorption spectrophotometry, capillary electrophoresis, inductively coupled plasma-mass spectrometry) with the chromium (VI) concentration greater than or equal to the LOD of the confirmatory test on the second aliquot;
- (4) The presence of halogen (e.g., bleach, iodine, fluoride) is verified using either a general oxidant colorimetric test (with a greater than or equal to 200 mcg/mL nitrite-equivalent cutoff or a greater than or equal to 50 mcg/mL chromium (VI)-equivalent cutoff) or halogen colorimetric test (halogen concentration greater than or equal to the LOD) for the initial test on the first aliquot and a different confirmatory test (e.g., multiwavelength spectrophotometry, ion chromatography, inductively coupled plasma-mass spectrometry) with a specific halogen concentration greater than or equal to the LOD of the confirmatory test on the second aliquot;
- (5) The presence of glutaraldehyde is verified using either an aldehyde test (aldehyde present) or the characteristic immunoassay response on one or more drug immunoassay tests for the initial test on the first aliquot and GC/MS for the confirmatory test with the glutaraldehyde concentration greater than or equal to the LOD of the analysis on the second aliquot;
- (6) The presence of pyridine (pyridinium chlorochromate) is verified using either a general oxidant colorimetric test (with a greater than or equal to 200 mcg/mL nitrite-equivalent cutoff or a greater than or equal to 50 mcg/mL chromium (VI)-equivalent cutoff) or a chromium (VI) colorimetric test (chromium (VI) concentration greater than or equal to 50 mcg/mL) for the initial test on the first aliquot and GC/MS for the confirmatory test with the pyridine concentration greater than or equal to the LOD of the analysis on the second aliquot;
- (7) The presence of a surfactant is verified by using a surfactant colorimetric test with a greater than or equal to 100 mcg/mL dodecylbenzene sulfonate-equivalent cutoff for the initial test on the first aliquot and a different confirmatory test (e.g., multi-wavelength spectrophotometry) with a greater than or equal to 100 mcg/mL dodecylbenzene sulfonate-equivalent cutoff on the second aliquot; or (8) The presence of any other adulterant not specified in 3 through 7 is verified using an initial test on the first aliquot and a different confirmatory test on the second aliquot.

Substituted

A urine specimen is reported substituted when the creatinine concentration is less than 2 mg/dL and the specific gravity is less than or equal to 1.0010 or greater than or equal to 1.0200 on both the initial and confirmatory creatinine tests (i.e., the same colorimetric test may be used to test both aliquots) and on both the initial and confirmatory specific gravity tests (i.e., a refractometer is used to test both aliquots) on two separate aliquots.

Dilute

A urine specimen is reported dilute when the creatinine concentration is greater than or equal to 2 mg/dL but less than 20 mg/dL and the specific gravity is greater than 1.0010 but less than 1.0030 on a single aliquot.

* From the Mandatory Guidelines for Federal Workplace Drug Testing Programs published in the Federal Register on April 13, 2004 (69 FR 19644), effective November 1, 2004.

What are the specific requirements for conducting each validity test on a urine specimen?

a) Specific requirements for measuring creatinine concentration are:

- (1) The creatinine concentration shall be measured to one decimal place on both the initial test and the confirmatory test.
- (2) The initial creatinine test shall have a calibrator at either 5 mg/dL or at 20 mg/dL.
- (3) The initial creatinine test shall have a control in the range of 2 mg/dL to 4 mg/dL, a control in the range of 5 mg/dL to 20 mg/dL, and a control in the range of 21 mg/dL to 25 mg/dL.
- (4) The confirmatory creatinine test (performed on those specimens with a creatinine concentration less than 5 mg/dL on the initial test) shall have a calibrator at 5 mg/dL or at 20 mg/dL, a control in the range of 2 mg/dL to 4 mg/dL, and a control in the range of 6 mg/dL to 8 mg/dL.

(b) Specific requirements for measuring specific gravity are:

- (1) The specific gravity shall be measured using a refractometer on both the initial and confirmatory specific gravity tests in order to report a specimen as substituted. Dilute specimens may, however, be reported based on refractometer results from the initial test. The refractometer shall be capable of reading in increments of at least 0.001 or less.
- (2) The initial and confirmatory specific gravity tests shall have a calibrator at 1.000.
- (3) The initial and confirmatory specific gravity tests shall have the following controls:
 - (i) For the cutoff of less than 1.002, one control at 1.001 and one control in the range of 1.002 to 1.010.
 - (ii) For the cutoff of greater than or equal to 1.020, one control greater than or equal to 1.020 but not greater than 1.025, and one control in the range of 1.015 to 1.020.

(c) Specific requirements for measuring pH are:

- (1) Dipsticks, pH paper, and spectrophotometric/colorimetric tests that have a narrow dynamic range and lack the accuracy necessary to support the specified program cutoffs may be used only to determine if the initial and confirmatory pH validity tests must be performed.
- (2) Spectrophotometric/colorimetric tests which have the dynamic range and accuracy necessary to support the specified program cutoffs and which are capable of measuring pH to one decimal place may be used as an initial test.
- (3) A pH meter capable of measuring the pH to at least one decimal place may be used to perform the initial test and shall be used to perform the confirmatory test.
- (4) The initial and confirmatory pH meter tests shall have the following controls:
 - (i) For the cutoff of less than 3, one control in the range of 2 to 2.9 and one control in the range of 3.1 to 4.
 - (ii) For the cutoff of greater than or equal to 11, one control in the range of 10 to 10.9 and one control in the range of 11.1 to 12.
- (5) Spectrophotometric/colorimetric initial pH tests shall have the following controls:
 - (i) For the cutoff of less than 3, one control in the range of 2 to 2.9.
 - (ii) For the cutoff of greater than or equal to 11, one control in the range of 11.1 to 12.

(d) Specific requirements for performing oxidizing adulterant tests are:

- (1) At a minimum, the initial test(s) for oxidizing adulterants shall be capable of detecting nitrites, chromates, and halogens (e.g., bleach, iodine). The detection of these adulterants may be achieved by using either a general oxidizing adulterant test or by using specific tests for each category of these adulterants. If an initial test for oxidizing adulterants without the compound of interest (i.e., a certified negative control) and at least one positive control with one of the compounds of interest at a concentration which exhibits an oxidizing activity above the documented LOD of the procedure.
- (2) A confirmatory test for a specific oxidizing adulterant shall use a different analytical principle or chemical reaction than that used for the initial test unless a recognized reference method is used for both the initial and confirmatory tests. Each analytical run of specimens shall include a control without the compound of interest (i.e., a certified negative control) and a positive control with the compound of interest at a concentration above the documented LOD of the procedure.

(e) Specific requirements for measuring the nitrite concentration are:

- (1) Dipsticks may only be used to determine if initial and confirmatory nitrite tests shall be performed.
- (2) A nitrite specific initial test shall have a calibrator at the cutoff concentration, a negative control (i.e., certified negative urine), one control in the range of 200 mcg/mL to 500 mcg/mL, and one control in the range of 500 mcg/mL to 625 mcg/mL.
- (3) The confirmatory nitrite test shall have a calibrator at the cutoff concentration, a negative control (i.e., certified negative urine), one control in the range of 200 mcg/mL to 500 mcg/mL, and one control in the range of 500 mcg/mL to 625 mcg/mL.

(f) Specific requirements for performing other validity tests (e.g., glutaraldehyde, surfactants) are:

- (1) Each analytical run of specimens shall include a control without the compound of interest (i.e., a certified negative control) and a positive control with the compound of interest at a concentration above the documented LOD of the procedure.
- (2) A confirmatory test for a specific adulterant shall use a different analytical principle or chemical reaction than that used for the initial test unless a recognized reference method is used for both the initial and confirmatory tests.
- (3) The initial and confirmatory tests for anionic surfactants shall be able to detect at least the activity equivalent to 100 mcg/mL of dodecylbenzene sulfonate



Sciteck's **SVT™** assays are:

- ▶ Liquid ready to use
- ▶ Compatible with most analyzers
- ▶ Validated in a SAMHSA/CAP lab
- ▶ Fully supported applications protocols for analyzers

SVT™ Aldehydes Reagent

Usage: For In Vitro Diagnostic Use to detect the presence of aldehydes in solution. This assay is not for use in diagnosing disease or illness to effect treatment, and/or cure; it is For Forensic / Toxicology use only. This assay is semi-quantitative.

Method: colorimetric : Endpoint.

Principle: For use with automated systems for drugs of abuse adulteration testing. The analysis is based on an indicator reaction which gives a change of absorbance in the presence of UrinAid, and / or Aldehydes.

Note: UrinAid is a commercial adulterant and is not a by-product of human metabolism.

Storage and Stability: Store at 2-10 ° C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The Aldehyde reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine collected in a clean container, should be tested as soon as possible (do not centrifuge or use preservatives). If testing cannot be performed within one hour after collection, the specimen should be refrigerated at 2-10° C immediately and returned to room temperature before testing. Mix thoroughly before testing.

All urines collected should be handled as potentially infectious.

Catalog #	Description	Quantity
125	Aldehyde Kit with R(1), Neg, Low Cal & Pos QC	900mL, 3 x 60mL
124	Aldehyde Reagent R(1)	900 mL
103-S	Aldehyde Cal Control Set Neg, Low, & Pos	3 x 60 mL
103	Positive Control	60 mL
104	Negative Control	60 mL
123	Low Calibrator	60 mL
124	Zero Calibrator	60 mL

SVT™ Chromate Reagent

U.S. and Foreign Patents and Patents Pending

Usage: For In Vitro Diagnostic Use to quantitatively detect the presence of chromates in urine. This assay is not for use in diagnosing disease or illness to effect treatment, and/or cure; it is For Forensic / Toxicology use.

Method: colorimetric : Endpoint.

Principle: For use with automated systems for drugs of abuse adulteration testing. The analysis is based on an indicator reaction which gives a change of absorbance in the presence of chromates.

Storage and Stability: Store at 2-10 ° C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The Chromate reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine collected in a clean container, should be tested as soon as possible.

All urines collected should be handled as potentially infectious.

Catalog #	Description	Quantity
601	Chromate Reagent Kit R1 & 50.0 mcg/mL cal	750 mL & 60 mL
600	Chromate Reagent R(1)	750 mL
600-04S	Chromate Cal Set Zero Cal & 50.0 mcg/mL cal	2 x 60 mL
600-04	Chromate Cal (50.0 mcg/mL)	60 mL
600-01	Chromate Cal (100.0 mcg/mL)	60 mL
600-05	Chromate Cal (200.0 mcg/mL)	60 mL
600-03	Chromate Cal (500.0 mcg/mL)	60 mL
214-01	Zero Cal	60 mL

SVT™ Creatinine Reagent (serum or urine)

Usage: For In Vitro Diagnostic Use in the quantitative determination of creatinine in serum and urine. Creatinine ratio measurements are used in the diagnosis and treatment of renal diseases and in monitoring renal dialysis. Creatinine results are also used for in Vivo/Vitro dilution of urine submitted for drugs of abuse testing.

Method: Colorimetric, Endpoint.

Principle: In an alkaline medium, creatinine forms a yellow-orange colored complex with picric acid. The color intensity is directly proportional to the concentration of creatinine in the urine and is measured spectrophotometrically at 505 nm.

Storage & Stability: Open R1 and R2 working Solutions are stable for at least four weeks when stored at 20° C. Discard NaOH R1, or Picric Acid R2, if any precipitate or turbidity is visible. Reagents and Calibrators are stable until the expiration date on the container.

Specimen Collection & Preparation: NaOH R1, and Picric Acid R2, and Calibrator solutions are ready for use upon receipt. No reagent preparation is necessary. If testing cannot be done within 2 days, specimens should be frozen at -16° to -25° C. Centrifuge to remove solids if necessary.

All urines collected should be handled as potentially infectious.

Catalog #	Description	Quantity
132-06	Creatinine Kit R1/R2, 20.0 Cal	750mL, 150mL & 60 mL
139-30R1	R1 NaOH	750 mL
139-30R2	R2 Picric Acid	150 mL
139-30	R1 NaOH and R2 Picric Acid	750 & 150mL
132-01S	Creatinine Cal Set Zero Cal & 20.0 Cal	2 x 60 mL
A41035	Creatinine Calibrator 5.0 mg/dL	60 mL
A41036	Creatinine Calibrator 2.0 mg/dL	60 mL
132-01	Creatinine Calibrator 20.0 mg/dL	60 mL
136-01	Creatinine Calibrator 100.0 mg/dL	60 mL
137-01	Creatinine Calibrator 400.0 mg/dL	60 mL
A4103-7	Creatinine QC 7.0 (range 6-8 mg/dL)	60 mL
214-01	Zero Cal	60 mL

SVT™ Halogen (Bleach) Reagent

U.S. and Foreign Patents and Patents Pending: 6,537,823.

Usage: This assay is not for use in diagnosing disease or illness to effect treatment, and/or cure; it is For Forensic / Toxicology use to detect the presence of Halogen(s) in urine submitted for drugs of abuse testing. This assay is semi-quantitative.

Method: Colorimetric : Endpoint.

Principle: Halogen(s), if present, reacts with the reagent containing a substituted biphenyl compound to yield a color complex, which is read on an automated analyzer, or manually, at 660 nm.

Storage and Stability: Store at 2-10°C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The Halogen reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine, collected in a clean container, should be tested as soon as possible (do not centrifuge or use preservatives). If testing cannot be performed within one hour after collection, the specimen should be refrigerated at 2-10° C immediately and returned to room temperature before testing.

Note: While bleach, bromine and other halogens are stable in solutions at or above pH 10.3, it is unstable at pH's found in normal urine specimens (pH 4.5 to pH 8.5) and rapidly oxidizes resulting in reduced detectable concentrations of halogen(s).

All urines collected should be handled as potentially infectious.

Catalog #	Description	Quantity
401	Halogen Kit R(1), Zero, 1.0% & 5.0% Cals	900 mL, 3 x 60 mL
400	Halogen R(1)	900 mL
400-01S	Halogen Cal Set, Zero, Pos/Low QC & 1.0% Cal	4 x 60 mL
400-01	Halogen Cal 1.0% (cutoff)	60 mL
400-02	Halogen Positive Control (5.0%)	60 mL
410-02	Halogen Low Control (0.05%)	60 mL
214-01	Zero Calibrator	60 mL

SVT™ Nitrite Reagent (non-corrosive)

Usage: For In Vitro Diagnostic Use Only to quantitatively determine the nitrite content of a solution. This assay is not for use in diagnosing disease or illness to effect treatment, and/or cure; it is For Forensic / Toxicology This is the only non-corrosive assay designed to detect nitrite in urine samples submitted for drugs of abuse testing. This reagent will not destroy your instruments, refrigerators or metal parts.

Method: Colorimetric : Endpoint.

Principle: In normal clinical testing this test depends on the conversion of nitrate (derived from the diet) to nitrite in the urine by the action of gram negative bacteria. Nitrite, if present, reacts with the reagent aromatic amine to form a diazonium salt which couples with an indicator to yield a color complex.

Storage and Stability: Store at 2-10°C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The Nitrite reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine, collected in a clean container, should be tested as soon as possible (do not centrifuge or use preservatives).

All urines collected should be handled as potentially infectious.

Catalog #	Description	Quantity
211AD-S	Nitrite Kit R(1)/R(2), Zero & 500 Cal	390 mL x 2, 2 x 60 mL
211AD-30	Nitrite Reagents R(1) & R(2)	390 mL x 2
211AD-09S	Nitrite Cal Set Zero & 500 Cal	2 x 60 mL
211AD-06	Nitrite Cal 200 mcg/mL	60 mL
211AD-09	Nitrite Cal 500 mcg/mL	60 mL
211AD-07	Nitrite Cal 1000 mcg/mL	60 mL
214-01	Zero Calibrator	60 mL

SVT™ Oxidant Reagent (non-corrosive)

Usage: To detect adulteration in urine by the quantitative determination of Oxidants to include but not limited to nitrite, chromate, bleach, bromine, halogens and other oxidatively active substances in urine. This assay is not for use in diagnosing disease or illness to effect treatment, and/or cure; it is For Forensic / Toxicology use only. Oxidants include nitrite, chromate, bleach, etc. This is the only non-corrosive nitrite reagent on the market. This reagent will not destroy your instruments, refrigerators or metal parts.

Method: Colorimetric : Endpoint.

Principle: When an oxidizing agent is present in a urine sample, it reacts with the Oxidant reagent containing a substituted benzene compound and forms a color complex, readable at 660 nm.

Storage and Stability: Store at 2-10° C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The Oxidant reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine, collected in a clean container, should be tested as soon as possible (do not centrifuge or use preservatives). If testing cannot be performed within one hour after collection, the specimen should be refrigerated at 2-10° C immediately and returned to room temperature before testing. Mix specimen thoroughly before testing.

Catalog #	Description	Quantity
701	Oxidant Kit R(1), Zero Cal & 500 Cal	750 mL, 2 x 60 mL
	Zero Cal	60 mL
700	Oxidant Reagent R(1)	750 mL
700-S	Oxidant Cal Set Zero, 50, 100 and 500 mcg/mL	4 x 60 mL
600-04	Chromate Cal 50.0 mcg/mL	60 mL
600-01	Chromate Cal 100.0 mcg/mL	60 mL
211AD-09	Nitrite Cal 500.0 mcg/mL	60 mL
214-01	Zero Cal	60 mL

SVT™ Proteolytic Reagent

U.S. and Foreign Patents and Patents Pending.

Usage: To detect adulteration in urine by the semi-quantitative determination of proteolytic active agents in urine. This assay is not for use in diagnosing disease or illness to effect treatment, and/or cure; it is For Forensic / Toxicology use only. Proteolytic active agents can include but not be limited to certain meat tenderizers, papain and bromelain.

Method: Colorimetric : Endpoint.

Principle: When proteolytic active agent is present in a urine sample, it reacts with the proprietary proteolytic indicator reagent containing activators, bacterial inhibitors and other ingredients that form a color complex, readable at 540 nm.

Storage and Stability: Store at 2-10° C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The Proteolytic reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine, collected in a clean container, should be tested as soon as possible (do not centrifuge or use preservatives). If testing cannot be performed within one hour after collection, the specimen should be refrigerated at 2-10° C immediately and returned to room temperature before testing. Mix specimen thoroughly before testing.

Catalog #	Description	Quantity
901	Proteolytic Kit R(1)/R(2), Zero & 5 Cal	390 x 2, 2 x 60 mL
900	Proteolytic Reagent R(1)/R(2)	390 x 2
900-01S	Proteolytic Cal Set Zero, Pos/Low QC & 5 Cal	4 x 60 mL
900-01	Proteolytic 5 mg/mL Cal	60 mL
900-02	Proteolytic Positive Control (10 mg/mL)	60 mL
900-03	Proteolytic Low Control (1 mg/mL)	60 mL
214-01	Zero Cal	60 mL

SVT™ Peroxidase Reagent

U.S. and Foreign Patents and Patents Pending.

Usage: For In Vitro Diagnostic Use to determine semi-quantitatively the presence of peroxidase in urine.

Method: Colorimetric : Endpoint.

Principle: When peroxidase is present in a urine sample, it reacts with the Peroxidase reagent containing a substituted benzene compound, activator and forms a color complex, readable at 600 nm.

Storage and Stability: Store at 2-10° C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The Peroxidase reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine, collected in a clean container, should be tested as soon as possible (do not centrifuge or use preservatives). If testing cannot be performed within one hour after collection, the specimen should be refrigerated at 2-10° C immediately and returned to room temperature before testing. Mix specimen thoroughly before testing.

Catalog #	Description	Quantity
801	Peroxidase Kit R(1)/R(2), Zero & Cutoff Cal	390 mL x 2, 2 x 60 mL
800	Peroxidase Reagent R(1) & R(2)	750 mL/150 mL
800-01S	Peroxidase Cal Set Zero Cal & Cutoff Cal	2 x 60 mL
800-01	Peroxidase Cutoff Cal	60 mL
214-01	Zero Cal	60 mL

SVT™ pH Reagent

History: First reagent sold for adulteration testing worldwide. 1988.

Usage: For In Vitro Diagnostic Use to quantitatively determine the pH of a solution.

Method: Colorimetric : Endpoint.

Principle: This test is based on an indicator principle which gives a broad range of color intensity covering the entire urinary pH range from 2 - 12 pH units in urine.

Storage and Stability: Store at 2-10° C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The pH reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine, collected in a clean container, should be tested as soon as possible (do not centrifuge or use preservatives). If testing cannot be performed within one hour after collection, the specimen should be refrigerated at 2-10° C immediately and returned to room temperature before testing. Mix specimen thoroughly before testing.

Catalog #	Description	Quantity
106	pH Kit R(1), 4.5 & 9.0 Cals	900 mL, 2 x 60 mL
108	pH Kit R(1), 3.0 & 11.0 Cals	900 mL, 2 x 60 mL
100	pH Reagent R(1)	900 mL
115	Blank Reagent for use on Olympus	900 mL
107	pH Calibrators 4.5 and 9.0	2 x 60 mL
109	pH Calibrators 5.0 and 8.0	2 x 60 mL
110	pH Calibrators 3.0 & 11.0	2 x 60 mL
111	pH Calibrators 4.0	900 mL
107L	pH Calibrators 4.5 and 9.0	2 x 900 mL
107L4	pH Calibrator 4.5	900 mL
107L9	pH Calibrator 9.0	900 mL
112	pH Calibrator 10.0	900 mL

SAM-Set™ Calibrator and Control Series

Usage: SAM-SET™ Calibrators are for use in validity tests for pH, Creatinine, Nitrite to include the use of a Refractometer (specific gravity) or pH meter (pH) as required in the proposed SAMHSA guidelines in human urine on automated clinical chemistry analyzers. The SAM-SET™ Calibrator Series are not for use in diagnosing disease or illness to effect treatment, and/or cure. They are for Forensic / Toxicology use only. Calibrators are sold in sets per constituent and may be used with any reagent lot.

Storage and Stability: Store at 2-10° C. The reagent is stable until expiration date on the container.

Catalog #	Description	Quantity
pH:		
For a cutoff of less than 3:		
A4110	pH Cal 3.0	60 mL
A4111	pH QC 2.45 (range 2.0-2.9)	60 mL
A4112	pH QC 3.55 (range 3.1-4.0)	60 mL
A4110S	pH 3.0 Cutoff set (3.0, 2.45 & 3.55)	3 x 60 mL
110	pH 3.0 & 11.0 Cals	2 x 60 mL
For a cutoff of greater than or equal to 11:		
A4113	pH 11.0 Calibrator	60 mL
A4114	pH QC 10.45 (range 10.0-10.9)	60 mL
A4115	pH QC 11.55 (range 11.1-12.0)	60 mL
A4113S	pH 11 Cutoff Set (11.0, 10.45 & 11.55)	3 x 60 mL
110	pH 3.0 & 11.0 Cals	2 x 60 mL
A4101	pH 3.0, 11.0, and 12.0 Cal Buffers	3 x 60 mL
Creatinine:		
214-01	Zero Cal	60 mL
A41036	Creatinine Calibrator 2.0 mg/dL	60 mL
A41035	Creatinine Calibrator 5.0 mg/dL	60 mL
132-01	Creatinine Calibrator 20.0 mg/dL	60 mL
136-06	Creatinine Calibrator 100.0 mg/dL	60 mL
137-01	Creatinine Calibrator 400.0 mg/dL	60 mL
A4103-7	Creatinine QC 7.0 (range 6-8 mg/dL)	60 mL
A4300	SVT™ Level I QC (creatinine range 21-25 mg/dL)	60 mL
A4400	SVT™ Level II QC (creatinine range 5-20 mg/dL)	60 mL
A4200	SVT™ Level III QC (creatinine range 2-4 mg/dL)	60 mL
132-S	Creatinine Cal Cutoff Set Zero & 20.0 mg/dL Cal	2 x 60 mL
Specific Gravity:		
For Cutoff of less than 1.002		
A41000	Refractometer Cal 1.0000	60 mL
A4700	Refractometer Cal 1.0010	60 mL
A41002	Refractometer Cal 1.0020	60 mL
A4100S	Refractometer Cals 1/0000 & 1.0020	2 x 60 mL
A41041	Refractometer QC 1.0010	60 mL
A41043	Refractometer QC 1.0060 (range 1.002-1.010)	60 mL
A4100S	Refractometer 1.002 Cutoff Set	4 x 60 mL
For the Cutoff of greater than or equal to 1.0200		
A41000	Refractometer Cal 1.0000	60 mL
A41042	Refractometer Cal 1.0200	60 mL
A4100S	Refractometer 1.0000 & 1.0200	2 x 60 mL
A41044	Refractometer 1.0230 (range 1.0200-1.0250)	60 mL
A41045	Refractometer 1.0170 (range 1.0150-1.0200)	60 mL
A4102S	Refractometer 1.0200 Cutoff Set	4 x 60 mL
Oxidants:		
600-04	Chromate Cal 50.0 mcg/mL	60 mL
211AD-09	Nitrite 500 mcg/mL	60 mL
A4102	Nitrite QC 350 mcg/mL (range 100-500 mcg/mL)	60 mL
A4103	Nitrite QC 565 mcg/mL (range 500-625 mcg/mL)	60 mL
214-01	Zero Calibrator	60 mL

SVT™ Specific Gravity Reagent

Usage: For In Vitro Diagnostic Use to determine the specific gravity of a solution.

Method: Colorimetric : Endpoint.

Principle: This test is based on a pKa change of pretreated polyelectrolytes in response to ionic concentration of the test sample. The reaction produces a color change that is monitored at 600nm.

Storage and Stability: Store at 2-10° C. The reagent is stable until expiration date on the container.

Specimen Collection & Preparation: The Specific Gravity reagent may be used on any freshly voided urine specimen or urine collected under special conditions, such as first-morning specimens and post-prandial urine. The urine, collected in a clean container, should be tested as soon as possible (do not centrifuge or use preservatives). If testing cannot be performed within one hour after collection, the specimen should be refrigerated at 2-10° C immediately and returned to room temperature before testing. Mix specimen thoroughly before testing.

Catalog #	Description	Quantity
116	Specific Gravity Kit R(1) 1.005 & 1.030 Cals	825 mL, 2 x 60 mL
117	Specific Gravity Reagent R(1)	825 mL
118	Sg Calibrators 1.005 & 1.030	2 x 60 mL
118-35	Sg Calibrator 1.035	60 mL
A41043	Sg Calibrator 1.0030	60 mL
A41042	Sg Calibrator 1.0200	60 mL

SVT™ Quality Control Series

Usage: SVT™ Controls are for use in validity tests for pH, Creatinine, Nitrite, and Oxidants as required in the proposed SAMHSA guidelines in human urine on automated clinical chemistry analyzers. The SVT™ Control Series are not for use in diagnosing disease or illness to effect treatment, and/or cure. They are for Forensic / Toxicology use only. The SVT™ Controls are ready to use liquid controls for use on autoanalyzers or dry chemistry methods. SVT™ Controls are sold individually or in sets and may be used with any reagent lot.

Storage and Stability: Store at 2-10° C. The reagent is stable until expiration date on the container.

Catalog #	Description	Quantity
A4300	SVT™ I Control	60 mL
	Assay	Target Levels
	pH*	2.50
	Oxidant (Nitrite)*	0.0 mcg/mL
	Nitrite*	0.0 mcg/mL
A4400	SVT™ II Control	21-25 mg/dL
	60 mL	
	Assay	Levels
	pH*	7.0
Oxidant (Nitrite)*	350 mcg/mL	
Nitrite*	350 mcg/mL	
Creatinine*	12.5 mg/dL	
A4200	SVT™ III Control	500 - 625
	60 mL	
	Assay	Levels
	pH*	10.5
Oxidant (Nitrite)*	565 mcg/mL	
Nitrite*	565 mcg/mL	
Creatinine*	3.0 mg/dL	
A4500	SVT™ Control Set Includes all three Levels I, II, and III Controls	3 x 60 mL