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## New and Renewal NIST SRMs/RMs

### **NIST SRM 3236 Soy Protein Isolate NIST SRM 3237 Soy Protein Concentrate NIST SRM 3238 Soy-Containing Solid Oral Dosage Form**



Soy-containing foods and supplements are widely distributed in the U.S. market, with soy-based foods such as tofu and meat and dairy alternatives reaching over \$5 billion in sales. Soy is rich in isoflavones, a class of phytoestrogens linked to bone health as well as reductions in LDL cholesterol, menopausal symptoms, and incidence of cardiovascular disease and breast cancer. Soybeans are processed into three kinds of high-protein commercial products: flours, concentrates, and isolates. Soy flour is prepared by grinding soybeans into a fine powder and contains approximately 50% protein. Soy protein concentrates and isolates are prepared from the defatted soy flour by removal of soluble sugars to yield products with approximately 70% protein (concentrate) or 90% protein (isolate). Soy flour is a gluten-free alternative to wheat flour; soy protein concentrates and isolates are used as nutritional ingredients in many foods to enhance protein content or as emulsifiers or texturizers.

In collaboration with the Office of Dietary Supplements at the National Institutes of Health, NIST has prepared a suite of soy materials for use in quality control and/or method validation or verification studies for isoflavones and other compounds of interest. NIST SRM 3234 Soy Flour was released in 2012 with values assigned for proximates, vitamins, elements, and amino acids. Values for isoflavones will be added in the near future. NIST SRM 3236 Soy Protein Isolate, NIST SRM 3237 Soy Protein Concentrate, and NIST SRM 3238 Soy-Containing Solid Oral Dosage Form are now available with certified and reference values assigned for the six major soy isoflavones. The certificates also include detailed method information used in the assignment of these values as well as representative chromatograms.

*Technical Contact: Melissa Phillips  
Email: [Melissa.Phillips@nist.gov](mailto:Melissa.Phillips@nist.gov)*

## NIST SRM 3532 Calcium-Containing Solid Oral Dosage Form

Standard Reference Material (SRM) 3532 Calcium-Containing Solid Oral Dosage Form is a powdered form of a calcium supplement and is intended for use by the dietary supplement and nutrition industries. Calcium is a critical element in human health. It is widely known as being important for the development of bone mass, but it also plays an important role in cardiovascular health, the transmission of electrical nerve impulses, and enzymatic processes. Calcium supplements are both widely promoted, and commonly used by consumers to support adequate bone health and reduce the risk of osteoporosis. The Dietary Reference Intake for adults is 1000 mg to 1300 mg, depending on age and gender, and a number of different types of calcium supplements are available from retail sources.

SRM 3532 is the newest non-botanical dietary supplement material available from NIST. This SRM is intended for use in method development and validation as well as for quality assurance and establishing traceability when assigning values to in-house control materials. It is important for laboratories in the dietary supplement and nutrition industries to analyze a material for quality assurance that is compositionally similar to that of the test samples being analyzed. SRM 3532 has certified and reference values assigned for nutritional and toxic elements. Some supplements may be contaminated with toxic metals, such as lead and cadmium, and this material contains values for both of these elements. A unit of SRM 3532 consists of five packets, each containing approximately 10 g of material.

*Technical Contact: Laura Wood*  
*Email: [Laura.Wood@nist.gov](mailto:Laura.Wood@nist.gov)*



## NIST SRM 3669 Arsenic Species in Frozen Human Urine (Elevated Levels)



The Chemical Sciences Division (CSD) in NIST's Material Measurement Laboratory (MML) and the Centers for Disease Control and Prevention (CDC) Division of Laboratory Sciences began a collaborative effort in 2004 to develop Standard Reference Materials (SRMs) for arsenic species in frozen human urine. Arsenic is a toxic element and a known carcinogen. Arsenic is present in food and water in chemical forms that have varying degrees of toxicity. Toxicological evaluation of arsenic exposure must be based on the mass fractions of arsenic species rather than total arsenic. SRM 3669 Arsenic Species in Frozen Human Urine (Elevated Levels) is jointly developed by NIST and CDC. The SRM is intended for use in evaluating the measurement accuracy of arsenite (AsIII),

arsenate (AsV), monomethylarsonic acid (MMA), dimethylarsinic acid (DMA), and arsenobetaine (AB) in patients who experienced acute arsenic exposure. SRM 3669 is related to SRM 2669 Arsenic Species in Frozen Human Urine, which was introduced in 2009 for method validation in biomonitoring measurements of the general population. Whereas the target levels of arsenic species in SRM 2669 are approximately the 50<sup>th</sup> to 95<sup>th</sup> percentile of the distribution of the population, the target levels of arsenic species in SRM 3669 are greater than the 95<sup>th</sup> percentile. Value assignment of arsenic species in SRM 3669 was based on liquid chromatography inductively coupled plasma mass spectrometry (LC-ICP-MS) and ion chromatography ICP-MS measurements made at NIST, and LC-ICP-MS measurements made at CDC. Value assignment of total arsenic was based on ICP-MS measurements and radiochemical neutron activation analysis (RNAA) measurements made at NIST.

*Technical Contact: Lee Yu*

*Email: Lee.Yu@nist.gov*

## NIST RM 8446 Perfluorinated Carboxylic Acids and Perfluorooctane Sulfonamide in Methanol

### NIST RM 8447 Perfluorinated Sulfonic Acids in Methanol

In 2001 the first dedicated studies of perfluorinated alkyl acids (PFAAs) revealed their widespread distribution in the environment and wildlife. PFAAs were manufactured worldwide and used in a variety of consumer products and industrial surfactants (e.g., carpeting, upholstery, firefighting foams, grease and water repellents). The stability of the carbon-fluorine bond, which made PFAAs useful in products, has also made PFAAs ubiquitous environmental contaminants. PFAAs readily adsorb to blood proteins and are poorly metabolized, hence PFAAs can accumulate both in people and wildlife. Several government, industrial, and research laboratories are interested in measuring PFAAs in environmental samples and require standard solutions and reference materials value-assigned for PFAA compounds in order to meet quality control guidelines. Recently, the Chemical Sciences Division (CSD) in NIST's Material Measurement Laboratory (MML) has developed two Reference Materials (RMs) 8446 Perfluorinated Carboxylic Acids and Perfluorooctane Sulfonamide in Methanol and 8447 Perfluorinated Sulfonic Acids in Methanol. RM 8446 is a solution of 11 perfluorinated carboxylic acids (PFCAs) and perfluorooctane sulfonamide (PFOSA) in methanol, and RM 8447 is a solution of three perfluorinated sulfonic acids (PFSAs) in methanol. Both are intended for use as calibration solutions. These solutions cover the most frequently detected PFAAs in the environment that are intended to be used in validation of existing methods or for use as a calibration mixture in routine analysis.

*Technical Contact: Jessica Reiner*

*Email: Jessica.Reiner@nist.gov*

# ORDER NIST SRMs ONLINE

You can order NIST SRMs through our online request system, which is continually updated. This system is efficient, user-friendly, and secure. Our improved search function finds keywords on SRM detail pages as well as words in titles. **PLEASE NOTE:** Purchase orders and credit cards may be used when ordering an SRM online. Also note that we are placing many historical archive certificates online for your convenience.

**<https://www-s.nist.gov/srmors>**

## Please Register Your SRM Online!

**Registering will ensure that you will be notified of any technical updates or developments.**

[http://www.nist.gov/srm\\_reg](http://www.nist.gov/srm_reg)

## Renewals

**SRM 913b** Uric Acid

**SRM 1567b** Wheat Flour

**SRM 1617b** Sulfur in Kerosine (High Level)

**SRM 1661a** Sulfur Dioxide in Nitrogen (Nominal Amount-of-Substance Fraction 500  $\mu\text{mol/mol}$ ) Lot #94-I-XX

**SRM 1680b** Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 500  $\mu\text{mol/mol}$ ) Lot #2-K-XX

**SRM 1681b** Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 1000  $\mu\text{mol/mol}$ ) Lot #1-L-XX

**SRM 1878b** Respirable Alpha Quartz (Quantitative X-Ray Powder Diffraction Standard)

**SRM 2092** Low-Energy Charpy V-Notch Impact Specimen (NIST-Verification)

**SRM 2096** High-Energy Charpy V-Notch Impact Specimen (NIST-Verification)

**SRM C2415a** Battery Lead (UNS 52770)

## Renewals (continued)

**SRM 2631a** Nitric Oxide in Nitrogen (Nominal Amount-of-Substance Fraction 3000  $\mu\text{mol/mol}$ )  
Lot #47-G-XX

**SRM 2684c** Bituminous Coal (Nominal Mass Fraction 3 % Sulfur)

**SRM 2806b** Medium Test Dust (MTD) in Hydraulic Fluid

**SRM 3162a** Titanium (Ti) Standard Solution Lot #130925

**SRM 3169** Zirconium (Zr) Standard Solution Lot #130920

**RM 8027** Silicon Nanoparticles (Nominal Diameter 2 nm)

## Revisions

### *Certificate Revisions: Are You Using These Materials?*

This is a list of our most recent certificate revisions. NIST updates certificates for a variety of reasons, such as to extend the expiration date or to include additional information gained from stability testing. Users of NIST Standard Reference Materials should ensure that they have the current certificates. You can print or view a copy of the current certificate at our website at <http://www.nist.gov/srm> or contact the Office of Reference Materials at **phone** 301-975-2200, **fax** 301-926-4751, or **email** [srminfo@nist.gov](mailto:srminfo@nist.gov).

#### **SRM 16f Basic Open- Hearth Steel, 1% Carbon**

Editorial changes

#### **SRM 133b Chromium-Molybdenum Steel**

Editorial changes

#### **SRM 333a Molybdenum Sulfide Concentrate**

New expiration date: 01 July 2020

Editorial changes

#### **SRM 853a Aluminum Alloy (3004)**

Editorial changes

#### **SRM 861 Nickel-Based Superalloy**

Updated certification date to indefinite

Editorial changes

#### **SRM 911c Cholesterol**

New expiration date: 31 December 2024

#### **SRM 916a Bilirubin**

New expiration date: 01 September 2016

Editorial changes



# Revisions (continued)

**SRM 967a Creatinine in Frozen Human Serum**

New expiration date: 31 December 2019

Editorial changes

**SRM 1107 Naval Brass UNS 46400**

Revised certified values for Fe, Ni, Cu, Zn, Sn, and Pb; reference value added for Al; information values added for P and Mn

Editorial changes

**SRM 1155a Stainless Steel (Cr 18 Ni 12, Mo 2)**

Iron value changed from reference to certified, with uncertainty updated

Editorial changes

**SRM 1171 Stainless Steel Cr 17-Ni 11-Ti 0.3 (AISI 321)**

Editorial changes

**SRM 1230 High Temperature Alloy A286**

Editorial changes

**SRM 1240c Aluminum Alloy 3004**

Editorial changes

**SRM 1249 Ni-Cr-Fe-Nb-Mo Alloy UNS N077178**

Editorial changes

**SRM C1251a Phosphorus Deoxidized Copper - Cu VIII**

Editorial changes

Change of expiration date

**SRM C1252a Phosphorus Deoxidized Copper - Cu IX**

Change of expiration date

Editorial changes

**SRM C1253a Phosphorus Deoxidized Copper – Cu X**

Change of expiration date

Editorial changes

**SRM 1258-I Aluminum Alloy 6011**

Editorial changes

**SRM 1634c Trace Elements in Fuel Oil**

New expiration date: 31 March 2020

Editorial changes

**SRM 1641d Mercury in Water**

New expiration date: 01 October 2019

# Revisions (continued)

**SRM 1755 Nitrogen in Low Alloy Steel**

Editorial changes

**SRM 1775 MP 35N Refractory Alloy**

Editorial changes

**SRM 1883a Calcium Aluminate Cement**

New expiration date: 08 January 2019

Editorial changes

**SRM 1921a Infrared Transmission Wavelength Standard**

New expiration date: 31 December 2016

Editorial changes

**SRM 1941b Organics in Marine Sediment**

Units corrected from mg/kg to  $\mu\text{g}/\text{kg}$  in Tables 8 and 9

Editorial changes

**SRM 1946 Lake Superior Fish Tissue**

Removal of reference values for tetradecanoic acid (C14:0), (Z)-9-Hexadecenoic Acid (C16:1), and (Z)-9-octadecenoic acid (C18:1) in Table 7 due to recent analysis indicating bias

Editorial changes

**SRM 1947 Lake Michigan Fish Tissue**

Removal of reference values, tetradecanoic acid (C14:0), (Z)-9-Hexadecenoic Acid (C16:1), and (Z)-9-octadecenoic acid (C18:1) in Table 7, due to recent analysis indicating bias

Editorial changes

**SRM 1963a Nominal 100 nm Diameter Polystyrene Spheres**

Corrected Semiconductor and Dimensional Metrology Division Chief name

Editorial changes

**SRM 1964 Nominal 60 nm Diameter Polystyrene Spheres**

Corrected Semiconductor and Dimensional Metrology Division Chief name

Editorial changes

**SRM 2175 Refractory Alloy MP-35-N**

Updated certification date to indefinite

Editorial changes

**SRM 2384 Baking Chocolate**

New expiration date: 31 December 2019

Removed acrylamide reference value in Table 6

Editorial changes

## Revisions (continued)

**SRM 2387 Peanut Butter**

New expiration date: 31 December 2019

Editorial changes

**SRM 2394 Heteroplasmic Mitochondrial DNA Mutation Detection Standard**

New expiration date: 31 July 2019

Editorial changes

**SRM 2451 Fine Carbon (Activated) - From Cyanide Ore Leaching**

New expiration date: 31 December 2019

Editorial changes

**SRM 2627a Nitric Oxide in Nitrogen (Nominal Amount-of-Substance Fraction 5  $\mu\text{mol/mol}$ )****Lot #48-H-XX**

Editorial changes

**SRM 2628a Nitric Oxide in Nitrogen (Nominal Amount-of-Substance Fraction 10  $\mu\text{mol/mol}$ )****Lot #49-H-XX**

Updated certified value

Editorial changes

**SRM 2637a Carbon Monoxide in Nitrogen (Nominal Amount-of-Substance Fraction 2500  $\mu\text{mol/mol}$ )****Lot #56-F-XX**

New expiration date: 07 July 2022

Editorial changes

**SRM 2693 Bituminous Coal (Sulfur, Mercury, and Chlorine)**

Changed addendum to appendix; changed name to include sulfur concentration

Editorial changes

**SRM 2737 Nitric Oxide in Nitrogen (Nominal Amount-of-Substance Fraction 500  $\text{nmol/mol}$ )****Lot #2737-AL-XX**

Editorial changes

**SRM 2738 Nitric Oxide in Nitrogen (Nominal Amount-of-Substance Fraction 1000  $\text{nmol/mol}$ )****Lot #2738-AL-XX**

Editorial changes

**SRM 2921 Human Cardiac Troponin Complex**

New expiration date: 30 January 2019

Editorial changes

**SRM 3154 Sulfur (S) Standard Solution Lot #892205**

New expiration date: 01 July 2019

Editorial changes



## Revisions (continued)

**SRM 3177 Mercuric Chloride Standard Solution**

Updated title

Editorial changes

**SRM 3233 Fortified Breakfast Cereal**

Removed reference value for solids

Editorial changes

**SRM 3246 *Ginkgo biloba* (Leaves)**

New expiration date: 30 October 2019

Editorial changes

**SRM 3247 *Ginkgo biloba* (Extract)**

New expiration date: 30 October 2019

Editorial changes

**SRM 3248 Ginkgo-Containing Tablets**

New expiration date: 30 October 2019

Editorial changes

**SRM 3280 Multivitamin/Multielement Tablets**

New expiration date: 31 October 2016

Editorial changes

## NIST SRM 2014/2015 Exhibit Schedule

### **AVS 61<sup>st</sup> International Symposium & Exhibition**

*November 10-13, 2014*

Booth #1426

Baltimore Convention Center

Baltimore, MD

### **Material Research Society Fall Meeting**

*November 30 – December 5, 2014*

Hynes Convention Center

Boston, MA

### **IACC-39<sup>th</sup> International Conference & Exposition on Advanced Ceramics & Composites**

*January 25-30, 2015*

Booth #111-113

Hilton Daytona Beach Resort & Ocean Center

Daytona, FL

### **American Academy for Forensic Science**

*February 16-21, 2015*

Hyatt Regency Orlando

Orlando, FL

### **Pittsburgh Conference**

*March 8-12, 2015*

Booth #1910-1913

Morial Convention Center

New Orleans, LA

### **American Chemical Society Spring Meeting**

*March 22-26, 2015*

Denver Convention Center

Denver, CO

### **Materials Research Society Spring Meeting**

*April 6-10, 2015*

Moscone Convention Center

San Francisco, CA

### **The American Society of Crime Laboratories Directors**

*April 26-30, 2015*

Marriott Wardman Park

Washington, DC

### **IFT – Food Expo**

*July 12-14, 2015*

Booth #2180

McCormick Place South

Chicago, IL

### **AACC Clinical Lab Expo**

*July 26-30, 2015*

Atlanta Convention Center

Atlanta, GA

### **American Chemical Society Fall Meeting**

*August 16-20, 2015*

Boston Convention Center

Boston, MA

### **AOAC INTERNATIONAL Lab Expo**

*September 27-30, 2015*

Westin Bonaventure Hotel

Los Angeles, CA

### **MS&T' 15 Materials Science & Technology Conference and Exhibition**

*October 4-8, 2015*

Greater Columbus Convention Center

Columbus, OH

### **BERM 2015**

*October 11-15, 2015*

Gaylord National Convention Center

National Harbor, MD

### **Material Research Society Fall Meeting**

*November 29 – December 4, 2015*

Hynes Convention Center

Boston, MA

## NIST Measurement Services Websites of Interest

### Standard Reference Materials



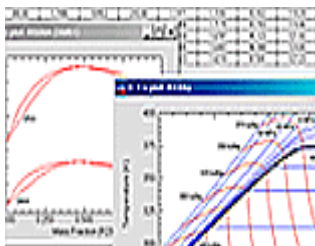
Standard Reference Materials

<http://www.nist.gov/srm>

Historical Archived Certificates/Reports of Investigation

<https://www-s.nist.gov/srmors/certArchive.cfm>

### Standard Reference Data



NIST Scientific and Technical Databases

<http://www.nist.gov/srd>

NIST Data Gateway

<http://srdata.nist.gov/gateway>

### Calibrations



Calibrations Services

<http://www.nist.gov/calibrations>

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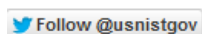
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