

# SRM Spotlight

Issue I Spring 2002

Editors:

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## *In This Issue...*

### **SRM Program News**

SRM Prices and Shipping Fees

The New SRM Spotlight

### **New and Renewal SRMs**

Air Particulate on Filter Media

Cement and Clinker SRMs

Rhenium and Rhodium Standard Solutions

Baking Chocolate

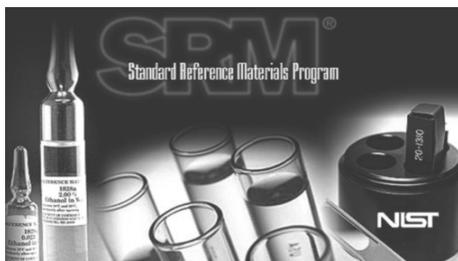
### **Revisions**

SRM 1634c

SRMs 2709, 2710 & 2711

SRM 8010

## **SRM Program News**



### **SRM Prices and Shipping Fees**

Effective 02 April 2002 SRM prices have increased, primarily due to additional stability testing requirements. Shipping rates increased slightly as well. All orders placed after April 2nd reflect the new charges. You may wish to check our web site or consult with a customer service representative to verify pricing.

SRM Sales Office

Tel: 301-975-6776

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

### **The New SRM Spotlight**

The SRM Quarterly has been phased out to make room for the new SRM Spotlight. Like the Quarterly, the SRM Spotlight will feature new and renewal SRMs, program news and other SRM information that is important to SRM customers. The Spotlight is a work in progress. The goal is to produce a publication that is more interesting and relevant to our readership. Your feedback and comments are welcomed.

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## **New and Renewal SRMs**



### **Air Particulate on Filter Media**

NIST announces the release of Standard Reference Material (SRM) 2783 Air Particulate on Filter Media, an air particulate sample reduced in particle size to simulate  $PM_{2.5}$  air particulate matter and deposited on a polycarbonate filter membrane (47mm). The fine fraction of air particulate matter

called  $PM_{2.5}$  are particles smaller than an aerodynamic equivalent diameter of  $2.5 \mu m$ . These tiny particles, which are of high importance in environmental and public health studies alike, can come from combustion exhaust or form when pollutants react in the atmosphere.

SRM 2783 is the first NIST material composed of contemporary particulate matter on a filter matrix. The US-EPA, in partnership with other Federal Agencies and State and local governments, is monitoring particulate matter in the atmosphere and has implemented an extensive interagency  $PM_{2.5}$  research program. SRM 2783 was developed to support this and other efforts to expand the science associated with

Continued from previous page...

particulate matter health effects, as well as to develop improved monitoring methods and cost-effective mitigation strategies.

SRM 2783 provides certified and reference values for 27 elements to evaluate and calibrate analytical methods for common and toxic elements contained in airborne particulate matter collected on filter media.

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## Cement and Clinker SRMs

### Now Available



**Portland and Calcium Aluminate Cements:** The SRM 1880 to SRM 1889 series of cements has been replaced by the SRM 1880a to SRM 1889a series comprised of five ordinary portland cements, a low Fe white cement, a portland cement blended with slag and fly ash, a portland cement blended with limestone, and two calcium aluminate cements. The cement industry depends on these SRMs for validation of rapid methods of elemental analysis. These standards are for use with a number of ASTM test methods. The “a” series covers a slightly larger range of concentrations than the earlier series. Individually, each new “a” series cement SRM has a different chemical composition from the previous SRM of the same number, e.g., SRM 1887 is not the same as 1887a. Both the renewal and its predecessor may be used separately for verification of results and calibration of methods. Consequently, SRMs 1887 and 1887a are available concurrently, as are SRMs 1886 and 1886a, as long as the previous series lasts.

**Portland Cement Clinkers:** SRMs 2686, 2687, and 2688 are new, fully-certified

## Rhenium and Rhodium Standard Solutions

NIST announces the availability of high purity SRM 3143 for Rhenium (Re) and SRM 3144 for Rhodium (Rh). These standards are much anticipated renewals and part of the 3100 series of high purity, single element in solution standards. The rhenium and rhodium standards have been a particular challenge to produce. With a newly developed certification processes, they should be in good supply for some time to come. The values for these standards are valid for five years from the date of certification.

Rhenium and rhodium are very expensive metals and can sell for thousands of dollars per ounce. Imprecise measurements can cost commercial users tens of millions of dollars annually. Rhenium is used for filaments for mass spectrographs and ion gauges, high temperature thermocouples, photographic flashbulb filaments, and as a catalyst in chemical manufacturing and refining.

Rhodium metal is a derivative of platinum, which is highly insoluble. To produce SRM 3144a, NIST developed a special process using a rhodium salt. Because rhodium is extremely hard and resistant to corrosion, it is used as an electrical contact material and for electroplating, optical instruments, and fine jewelry. Rhodium is most associated with its use as an industrial catalyst and in automobile catalytic converters.

Each unit of SRM 3143 and SRM 3144 is packaged as a set of five, 10mL borosilicate ampoules.

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cement clinker standards composed of the same clinker material as the superceded clinker RMs 8486, 8487, and 8488. Visit [www.nist.gov/srm](http://www.nist.gov/srm) for more information on NIST cement standards.

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## Baking Chocolate

The Nutrition Labeling and Education Act of 1990 requires that information for selected nutrients is provided on labels for processed foods. In response, NIST has been working to provide food-matrix SRMs with values assigned for the required nutrients. SRM 2384 Baking Chocolate is one in this series. SRM 2384 is intended for use as a primary control material for assigning values to in-house control materials and to validate methods for measuring nutrients such as fat, protein, calcium, iron, calories, and vitamins.

To study the robustness of analytical methods, AOAC International developed a nine-sector triangle in which foods

are positioned based on their fat, protein, and carbohydrate content. The idea was that one or two foods within each sector should be representative of other foods within that sector when validating an analytical method. Similarly, one or two food-matrix reference materials in each sector can be used as control materials for other foods within the sector. A high-fat food was identified by the food industry as a high-priority need, and SRM 2384 was developed as a result. Other foods in this sector include black olives and potato chips.

SRM 2384 also addresses a need for a reference material in the area of dietary supplements and functional foods. The catechins found in chocolate have been linked to the possible prevention of heart disease and cancer. This is the first reference material available from NIST for which values are assigned for catechins, as well as caffeine, theobromine, and theophylline.

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# Revisions

## Certificate Revisions – Are You Using These Materials?

Below is a list of our most recent certificate revisions. To gain maximum benefit from a NIST SRM, the certificate in possession must be current. NIST updates certificates for a variety of reasons, such as the extension of the certification date or to include additional information gained from stability testing. If you do not have, or suspect that you may not have the most recent certificate for your material, download a copy from the website at: <http://www.nist.gov/srm>, or contact the SRM program.

Telephone (301) 975-6776

Fax (301) 926-4751

E-mail [srminfo@nist.gov](mailto:srminfo@nist.gov)

### SRM 1634c Trace Elements in Fuel Oil

New Expiration date: This material is valid until 31 December 2012

### SRM 2709 San Joaquin Soil, SRM 2710 Montana Soil & SRM 2711 Montana Soil

New Expiration date: These materials are valid until 31 December 2011

### SRM 8010 Sand for Sieve Analysis

Editorial Change: Revised sieve designations. This material covers the size range of U.S.A. standard testing sieve numbers, from No. 30 (600  $\mu\text{m}$ ) to No. 325 (45  $\mu\text{m}$ ). Material A is a test material for the coarser sieves (No. 30 to No. 100), Material C is for the midrange (No. 70 to No. 200), and Material D is for the finer sieves (No. 100 to No. 325).

Dear SRM Customer,

It is with sadness that I announce that this, the first issue of the SRM Spotlight, will be my last. I am leaving NIST to pursue a position in another agency.

I have been the editor of the the SRM Quarterly, and now the Spotlight, for about three years. I can honestly say that working on this publication has been a highlight in my tenure here at NIST. I have always enjoyed spreading the word about the SRM program, products, and services.

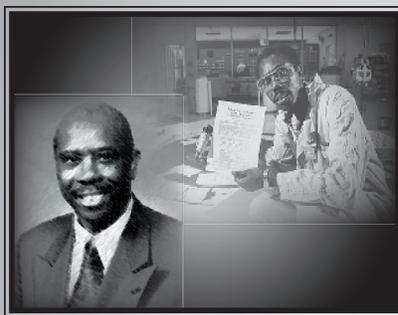
I leave the Spotlight in the capable hands of Gina Montgomery, my co-editor for this edition. Gina has a host of experience writing and publicizing SRMs, from her work as a Sales Representative to her brochure writing duties.

Best regards,

Jeanniece M. May

## Other Program News

### Thomas E. Gills Retires after 37 Years of Service.



Thomas E. Gills, Director, Office of Measurement Services, retired on January 3, 2002, after more than 37 years of dedicated NIST service. During his tenure, Tom worked diligently to advance the scope and range of measurement standards and traceability pathways to

NIST. Beginning as a chemist in the (former) NBS Radioisotope Technique Group, he advanced to become Chief of the SRM program and eventually, Director of the Office of Measurement Services. Throughout his career he was a strong advocate of the precept that the national and international language of commerce and trade is based on measurements and standards.

In his retirement, he still serves the scientific/metrology community, holding offices and serving on committees for NOBCChe (National Organization for Black Chemist and Chemical Engineers) and ACS (The American Chemical Society). The SRM Program honors Tom Gills and wishes him much success in the future.

The SRM Spotlight is published by the Standard Reference Materials Program, Office of Measurement Services, National Institute of Standards and Technology, U.S. Department of Commerce.

Comments are welcomed.

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