



Standard Reference Materials for Chemical Composition

Food & Agriculture

Foods and Beverages - Macro and Micronutrients

These SRMs are for validation of analytical procedures and calibration of apparatus used in the analysis of trace elements and other analytes in foods and related products.

SRM	Description	Unit of Issue
1546a	Meat Homogenate	4 cans x 85 g
1548a	Typical Diet	set (2)
1549a	Whole Milk Powder	5 pouches x 10 g each
1566b	Oyster Tissue	25 g
1567b	Wheat Flour	50 g
1568b	Rice Flour	50 g
1570a	Trace Elements in Spinach Leaves	60 g
1577c	Bovine Liver	20 g
1845a	Whole Egg Powder	5 pouches x 10 g each
1849a	Infant/Adult Nutritional Formula I (milk-based)	10 pouches x 10 g each
1869	Infant/Adult Nutritional Formula II (milk/whey/soy-based)	10 pouches x 10 g each
1946	Lake Superior Fish Tissue	5 x 7-9 grams
1947	Lake Michigan Fish Tissue	5 x 8 grams
2383a	Baby Food Composite	4 x 70 g
2384	Baking Chocolate	5 x 91 g
2385	Slurried Spinach	4 x 70 g
2387	Peanut Butter	3 x 170 g
3035	Arsenic Species in Apple Juice	5 x 1.5 mL
3233	Fortified Breakfast Cereal	60 g each
3234	Soy Flour	50 g
3252	Protein Drink Mix	5 pouches x 10 g each
3253	Yerba Mate Leaves	2 x 10 g
3254	Green Tea (<i>Camellia sinensis</i>) Leaves	5 x 3 g
3255	Green Tea (<i>Camellia sinensis</i>) Extract	5 x 1 g
3281	Cranberry (Fruit)	5 x 6 g
3282	Low-Calorie Cranberry Juice Cocktail	5 x 1.2 mL
3287	Blueberry (Fruit)	5 pouches x 5 g each
3290	Dry Cat Food	5 pouches x 10 g each
3530	Iodized Table Salt (Iodide)	1 bottle x 200 g

See [Table 110.1](#) on the website for more information.

Foods and Beverages - Other Components of Potential Interest

These SRMs are for validation of analytical procedures and calibration of apparatus used in the analysis of trace elements and other analytes in foods and related products.

SRM	Description	Unit of Issue
1565	Mycotoxins in Corn	2 x 60 g
1566b	Oyster Tissue	25 g
1849a	Infant/Adult Nutritional Formula I (milk-based)	10 pouches x 10 g each
1869	Infant/Adult Nutritional Formula II (milk/whey/soy-based)	10 pouches x 10 g each
1946	Lake Superior Fish Tissue	5 x 7-9 grams
1947	Lake Michigan Fish Tissue	5 x 8 grams
2387	Peanut Butter	3 x 170 g
3233	Fortified Breakfast Cereal	60 g each
3234	Soy Flour	50 g
3253	Yerba Mate Leaves	2 x 10 g
3254	Green Tea (<i>Camellia sinensis</i>) Leaves	5 x 3 g
3255	Green Tea (<i>Camellia sinensis</i>) Extract	5 x 1 g
3278	Tocopherols in Edible Oils	5 x 1 mL
3281	Cranberry (Fruit)	5 x 6 g
3282	Low-Calorie Cranberry Juice Cocktail	5 x 1.2 mL
3287	Blueberry (Fruit)	5 pouches x 5 g each

See [Table 110.1](#) on the website for more information.

Food Contaminants and Allergens

SRM	Description	Unit of Issue
1566b	Oyster Tissue	25 g
1946	Lake Superior Fish Tissue	5 x 7-9 g
1947	Lake Michigan Fish Tissue	5 x 8 g
1953	Organic Contaminants in Non-Fortified Human Milk	5 x 5 mL
1954	Organic Contaminants in Fortified Human Milk	5 x 5 mL
2387	Peanut Butter	3 x 170 g
3256	Green Tea-Containing Solid Oral Dosage Form	5 x 2.5 g
8445	Spray-Dried Whole Egg for Allergen Detection	5 g
8642a	FDA Saxitoxin Dihydrochloride Solution	5 x 1.2 mL

See [Table 110.2](#) on the website for more information.



Agricultural Materials (powder form)

SRM	Description	Unit of Issue
1515	Apple Leaves	50 g
1547	Peach Leaves	50 g
1570a	Trace Elements in Spinach Leaves	60 g
1573a	Tomato Leaves	50 g
1575a	Trace Elements in Pine Needles	50 g

See [Table 110.4](#) on the website for more information.

Fertilizers (powder form)

These SRMs are intended for use in the fertilizer industry as working standards.

SRM	Description	Unit of Issue
120c	Phosphate Rock (Florida)	90 g
193	Potassium Nitrate	90 g
194a	Ammonium Dihydrogen Phosphate	90 g
200b	Potassium Dihydrogen Phosphate (Fertilizer Standard)	90 g
694	Phosphate Rock, Western	90 g
695	Trace Elements in Multi-Nutrient Fertilizer	70 g
2429	Flue Gas Desulfurization Gypsum	200 g

See [Table 110.5](#) on the website for more information.

Wheat Hardness (kernel form)

This RM is intended primarily for calibrating instruments used to determine the hardness of bulk or single kernel wheat. RM 8441 was prepared and analyzed by the Federal Grain Inspection Service program. Grain Inspection Packers and Stockyards Administration of the United States Department of Agriculture.

SRM	Description	Unit of Issue
8441a	Wheat Hardness (kernel form)	set (50)

See [Table 110.6](#) on the website for more information.

Tobacco Related Materials

SRM	Description	Unit of Issue
3222	Cigarette Tobacco Filler	20 x 10 g

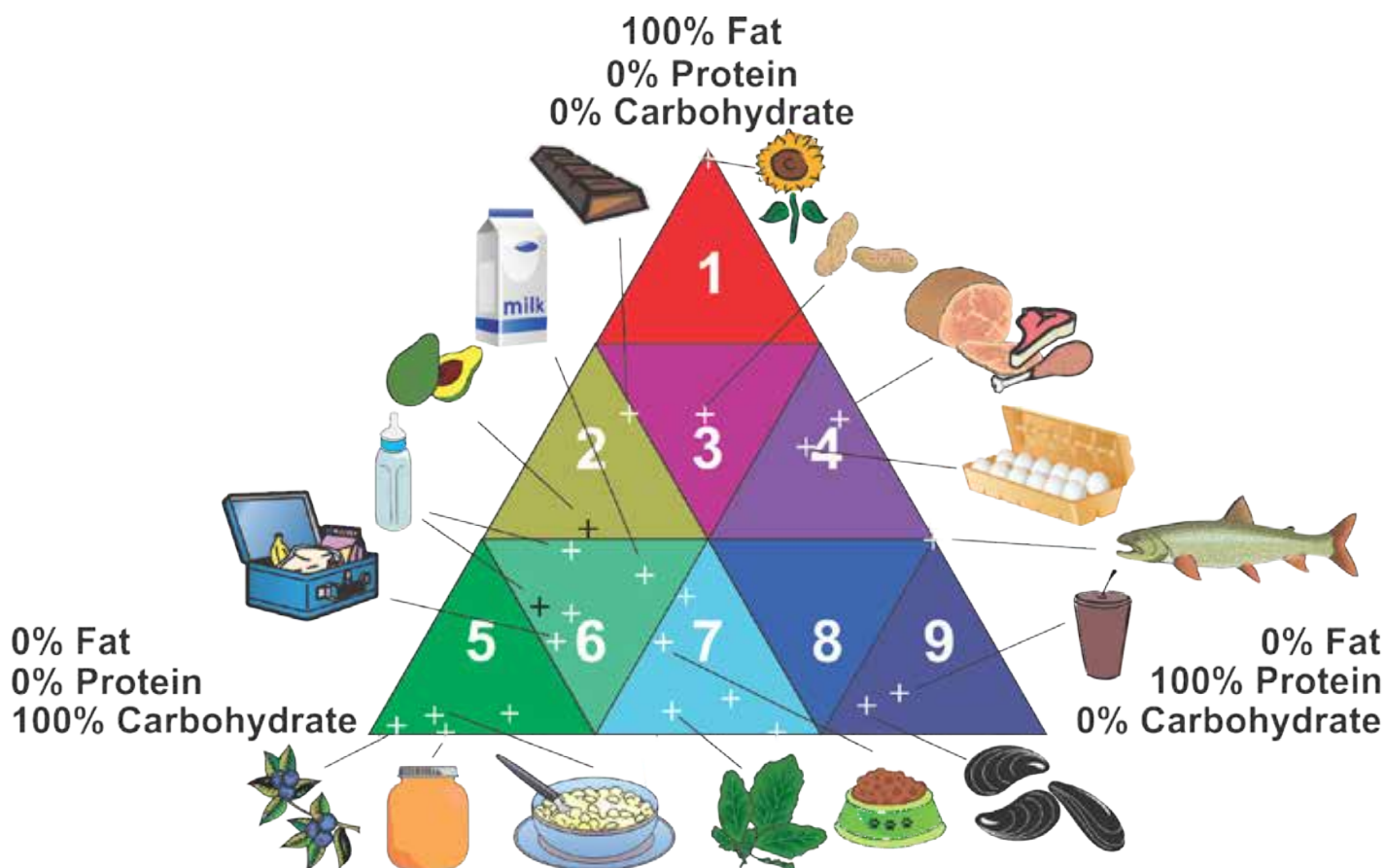
See [Table 110.10](#) on the website for more information.

Dietary Supplement Materials (includes nutraceuticals and herbs)

SRM	Description	Unit of Issue
3232	Kelp Powder (<i>Thallus laminariae</i>)	3 x 5 g
3235	Soy Milk	10 x 10 mL
3236	Soy Protein Isolate	5 x 10 g
3237	Soy Protein Concentrate	5 x 10 g
3238	Soy-Containing Solid Oral Dosage Form	5 x 10 g
3246	<i>Ginkgo biloba</i> (Leaves)	5 x 3 g
3247	<i>Ginkgo biloba</i> (Extract)	5 x 1 g
3248	Ginkgo-Containing Tablets	5 x 1 g
3250	Saw Palmetto (<i>Serenoa repens</i>) Fruit	5 x 6 g
3251	Saw Palmetto (<i>Serenoa repens</i>) Extract	5 x 1 mL
3254	Green Tea (<i>Camellia sinensis</i>) Leaves	5 x 3 g
3255	Green Tea (<i>Camellia sinensis</i>) Extract	5 x 1 g
3256	Green Tea-Containing Solid Oral Dosage Form	5 x 2.5 g
3262	St. John's Wort (<i>Hypericum perforatum</i> L.) Aerial Parts	5 x 3.3 g
3274	Botanical Oils Containing Omega-3 and Omega-6 Fatty Acids	set (4)
3275	Omega-3 and Omega-6 Fatty Acids in Fish Oil	3 ea 2 x 1.2 mL
3279	Chromium Dietary Supplement	5 x 6 g
3280	Multivitamin/Multielement Tablets	30 x 5 bottles
3281	Cranberry (Fruit)	5 x 6 g
3282	Low-Calorie Cranberry Juice Cocktail	5 x 1.2 mL
3283	Cranberry Extract	5 x 2.5 g
3284	Cranberry-Containing Solid Oral Dosage Form	5 x 2.5 g
3285	Mixed-Berry Containing Solid Oral Dosage Form	5 x 2.5 g
3291	Bilberry Extract	5 x 1 g
3299	Ground Turmeric (<i>Curcuma longa</i> L.) Rhizome	5 x 3 g
3300	Curcumin Extract of Turmeric (<i>Curcuma longa</i> L.) Rhizome	5 x 1 g
3530	Iodized Table Salt (Iodide)	1 x 200 g
3532	Calcium-Containing Solid Oral Dosage Form	5 x 10 g
8037	Krill Oil	3 x 4.5 mL

See [Table 110.9](#) on the website for more information.

Distribution of SRMs in the AOAC Food Triangle



NIST classifies food-matrix SRMs based on fat, protein, and carbohydrate content using a triangle developed by AOAC INTERNATIONAL¹, based on the supposition that foods (and thus reference materials) within each sector will have similar properties and therefore will pose similar challenges in determination of the same nutrient. Preparation of food-matrix SRMs has been based on the distribution of foods from a typical US diet in the AOAC triangle, with a majority of common foods and SRMs categorized in sectors 5 and 6 (e.g., fruits, vegetables, cereals, and grains). Conversely, only a small fraction of foods and SRMs are categorized in sectors 1 through 4 (higher-fat foods like meats and nuts). Additional materials are also prepared based on suggestions from user communities.

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|---|---|---|--|
| 1 | SRM 1588c Organics in Fish Oil | 6 | SRM 1548a Typical Diet |
| | SRM 3274 Fatty Acids in Botanical Oils | | SRM 1549a Whole Milk Powder |
| | SRM 3275 Fatty Acids in Fish Oils | | SRM 1849a Infant/Adult Nutritional Formula |
| 2 | SRM 2384 Baking Chocolate | 7 | SRM 1566b Oyster Tissue |
| | SRM 2386 Avocado Powder* | | SRM 2385 Slurried Spinach |
| 3 | SRM 2387 Peanut Butter | | SRM 3234 Soy Flour |
| 4 | SRM 1546a Meat Homogenate | | SRM 3290 Dry Cat Food |
| | SRM 1845a Whole Egg Powder | 9 | SRM 1946 Lake Superior Fish Tissue |
| 5 | SRM 1568b Rice Flour | | SRM 1947 Lake Michigan Fish Tissue |
| | SRM 2383a Baby Food Composite | | SRM 2974a Mussel Tissue |
| | SRM 3233 Fortified Breakfast Cereal | | SRM 3252 Protein Drink Mix |
| | SRM 3287 Blueberries | | *in preparation |
| | SRM 1869 Infant/Adult Nutritional Formula | | |

¹ W.R. Wolf, K.W. Andrews (1995) *Fresenius J. Anal Chem* 352:73-76.