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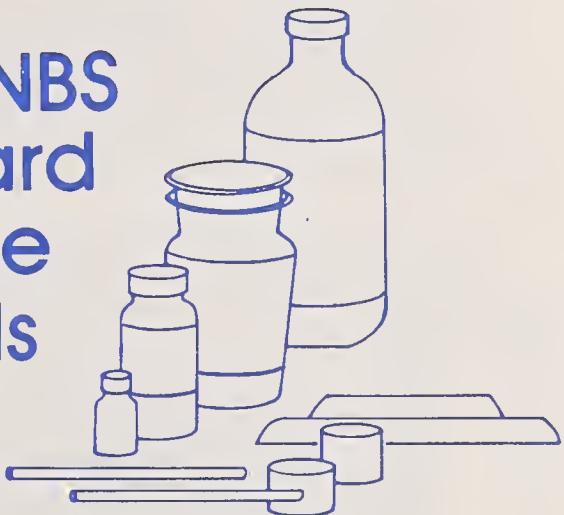
U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

# NBS Standard Reference Materials



*Standard Reference Materials are well-characterized materials disseminated by the National Bureau of Standards to be used to calibrate and evaluate measuring instruments, methods, and systems or to produce scientific data that can be referred readily to a common base. The materials are certified for chemical composition or for a particular physical or chemical property. They are used on-site in science and industry to calibrate instruments and methods used in production and quality control of raw materials, chemicals, metals, ceramics, fuels, and radioactive nuclides in manufacturing processes and in research.*

# NBS Standard Reference Materials



This supplement to the 1975-76 Catalog of NBS Standard Reference Materials provides the current prices of the Standard Reference Materials and lists materials issued since the catalog was last printed.

## CONTENTS

	Page
Ordering and Shipping .....	2
Section I—Price List .....	3
Section IIa—List of New and Renewal SRM's.....	20
Section IIb—Descriptions of New and Renewal SRM's .....	22
Section III—List of Revised Certificates .....	29
Section IV—Discontinued SRM's .....	30

### TECHNICAL INQUIRIES

All technical inquiries regarding SRM's, RM's and GM's should be directed to the Office of Standard Reference Materials, National Bureau of Standards, Washington, DC 20234. Telephone (301) 921-2045.

## ORDERING PROCEDURE

Orders should be addressed to the Office of Standard Reference Materials, Room B311, Chemistry Building, National Bureau of Standards, Washington, DC 20234 (Telephone 301-921-2045). Orders should give the number of units, catalog number and name of the standard requested. For example: 1 unit of SRM 11h, Basic-Open Hearth Steel, 0.2 percent C. These materials are distributed only in the units listed. Acceptance of an order does not imply acceptance of any provision set forth in the order contrary to the policy, or regulations of the National Bureau of Standards or the US Government.

Prices listed herein are subject to change without notice. Prices in effect at time of shipment will be billed to the purchaser. No discounts are given on NBS Standard Reference Materials. Payments not accompanying purchase orders are expected within 30 days after receipt of invoices.

Payments of foreign orders may be made by any of the following:

- (a) UNESCO coupons,
- (b) banker's draft against U.S.A. bank,
- (c) bank to bank transfer to U.S.A. bank,
- (d) letter of credit\* on a U.S.A. bank, or
- (e) by International Money Order.

Pro-forma invoice service requires 6 to 8 weeks to process, and is furnished only to those requiring such service.

\*Letters of Credit may be used as advance payment for SRM's; they will be accepted from banks in the United States only. Only the documents listed below will be furnished:

- (1) Six Commercial Invoices,
- (2) Packing List,
- (3) Certificate of Origin, and
- (4) Airway Bill (only if material is shipped Collect; no receipt can be furnished for material shipped by International Air Parcel Post).

**DOMESTIC SHIPMENTS** of material (except for restricted categories) for the United States and Canada are shipped prepaid if the parcel does not exceed weight limitations. For restricted categories and where the purchaser requests a special mode of shipment, the shipment will be sent collect; the Bureau does not prepay and add these shipping charges to the billing invoice.

**FOREIGN SHIPMENTS** of materials are shipped by prepaid International Air Parcel Post, subject to size, weight, and category of material limitations. Any other mode of shipment requested by a customer must be paid for by the customer. Shipments excluded from International Air Parcel Post are shipped Air Freight Collect. Certain materials must be handled through an agent (shipping or brokerage firm) located in the U.S. as designated by the purchaser. These parcels will be packed for overseas shipment and forwarded express collect to the US firm designated as agent.

NOTE: All shipments are made in compliance with existing regulations pertaining to the material at time of shipment.

## AVAILABILITY AND PRICE LIST

### A. STANDARD REFERENCE MATERIALS

Standard Reference Materials (SRM's) are well-characterized and certified materials, produced in quantity to calibrate a measurement system and to assure the long-term adequacy and integrity of the quality control process.

SRM	Type	Unit	Price	SRM	Type	Unit	Price
1b	Limestone, argillaceous .....	50 g	42	45d	Copper, freezing-point std. .	450 g	56
3c	Iron, white .....	110 g	43	49e	Lead, freezing-point std. ....	600 g	56
4k	Iron, cast .....	150 g	43	50c	Steel, W18-Cr4-V1 .....	150 g	43
5L	Iron, cast .....	150 g	51	51b	Steel, electric furnace 1.2C .	150 g	43
6g	Iron, cast .....	150 g	46	53e	Bearing metal, lead-base .....	150 g	43
7g	Iron, cast (high phosphorus)	150 g	43	54d	Bearing metal, tin-base .....	170 g	43
8j	Steel, bessemer (simulated), 0.1C .....	150 g	43	57	Silicon, refined .....	60 g	39
10g	Steel, bessemer, 0.2C .....	150 g	43	58a	Ferrosilicon (Si 73%) .....	75 g	56
11h	Steel, B.O.H. 0.2C .....	150 g	43	59a	Ferrosilicon (Si 50%) .....	50 g	50
12h	Steel, B.O.H. 0.4C .....	150 g	43	65d	Steel, basic electric, 0.3C ...	150 g	43
13g	Steel, B.O.H. 0.6C .....	150 g	43	70a	Feldspar, potash .....	40 g	42
14e	Steel, B.O.H. 0.8C .....	150 g	43	71	Calcium molybdate .....	60 g	39
15g	Steel, B.O.H. 0.1C .....	150 g	43	72f	Steel, Cr-Mo (SAE X4130) ..	150 g	43
16e	Steel, B.O.H. 1.1C .....	150 g	43	73c	Steel, stainless Cr13 (SAE 420) .....	150 g	43
17a	Sucrose (cane sugar) .....	60 g	36	76a	Burnt Refractory, 40% Al <sub>2</sub> O <sub>3</sub> ,	75 g	52
19g	Steel, A.O.H. 0.2C .....	150 g	43	77a	Burnt Refractory, 60% Al <sub>2</sub> O <sub>3</sub> ,	75 g	52
20g	Steel, AISI 1045 .....	150 g	43	78a	Burnt Refractory, 70% Al <sub>2</sub> O <sub>3</sub> ,	75 g	52
25c	Ore, manganese .....	100 g	37	79a	Fluorspar .....	120 g	50
30f	Steel, Cr-V (SAE 6150) .....	150 g	43	82b	Iron, nickel-chromium cast .	150 g	43
32e	Steel, Ni-Cr (SAE 3140) ....	150 g	43	83c	Arsenic trioxide, oxidimetric	75 g	42
33d	Steel, Ni-Mo (SAE 4820) ....	150 g	43	84h	Potassium phthalate, acid, acidimetric .....	60 g	36
36b	Steel, Cr2-Mol .....	150 g	43	85b	Aluminum alloy, wrought ...	75 g	43
37e	Brass, sheet .....	150 g	43	87a	Aluminum-silicon alloy .....	75 g	43
39i	Benzoic acid, calorimetric ...	30 g	42	88a	Limestone, dolomitic .....	50 g	42
40h	Sodium oxalate, oxidimetric	60 g	42				
41b	Dextrose (glucose) .....	70 g	39				
42g	Tin, freezing-point std. ....	350 g	66				
43h	Zinc, freezing-point std. ....	350 g	56				
44f	Aluminum, freezing-point std.	200 g	81				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
89	Glass, lead-barium .....	45 g	37	143c	Cystine .....	2 g	39
90	Ferrophosphorus .....	75 g	39	147	Triphenylphosphate .....	2 g	38
91	Glass, opal .....	45 g	37	148	Nicotinic acid .....	2 g	34
92	Glass, low boron .....	45 g	37	152a	Steel, B.O.H. 0.5C, 0.03 Sn	150 g	43
93a	Glass, high boron .....	ea	60	153a	Steel, Co8-Mo9-W2-Cr4-V2 .	150 g	43
94c	Zinc-base die-casting alloy ..	150 g	45	154b	Titanium Dioxide .....	90 g	60
97a	Clay, flint .....	60 g	92	155	Steel, Cr0.5-W0.5 .....	150 g	43
98a	Clay, plastic .....	60 g	92	158a	Bronze, silicon .....	150 g	43
99a	Feldspar, soda .....	40 g	42	160b	Steel, stainless, Cr19-Ni14-Mo3 (SAE 316) .....	150 g	43
100b	Steel, manganese (SAE T1340) .....	150 g	43	163	Steel, 0.9C, 0.9Mn, 1.0Cr ...	100 g	50
101f	Steel, stainless, Cr18-Ni9(SAE 304) .....	100 g	43	166c	Steel, stainless, low-carbon .	100 g	35
103a	Chrome refractory .....	60 g	37	168	Cobalt-base alloy, Co41-Mo4-Nb3-Ta1-W4 .....	150 g	43
105	Steel, high-sulfur, 0.2C (carbon only) .....	150 g	35	171	Magnesium-base alloy .....	100 g	43
106b	Steel, Cr-Mo-Al (Nitrally G)	150 g	43	173a	Titanium alloy 6Al-4V .....	100 g	43
107b	Iron, cast, Ni-Cr-Mo .....	150 g	43	174	Titanium alloy 4Al-4Mn .....	100 g	43
113a	Zinc Concentrate .....	100 g	38	176	Titanium alloy 5Al-2.5Sn ....	100 g	43
114m	Cement, turbidimetric and fineness std. .....	set (20)	56	178	Steel, basic oxygen 0.4C ....	150 g	43
115a	Iron, cast, Cu-Ni-Cr .....	150 g	43	179	Steel, high-Silicon .....	150 g	43
120b	Phosphate Rock (Florida) ...	90 g	55	180	Fluorspar, high-grade .....	120 g	50
121d	Steel, Cr17-Ni11-Ti0.3, AISI 321 .....	150 g	43	181	Ore, lithium (Spodumene) ...	45 g	37
122f	Iron, cast (car-wheel) .....	150 g	43	182	Ore, lithium (Petalite) .....	45 g	37
123c	Steel, Cr17-Ni11-Nb0.7, AISI 348 .....	150 g	43	183	Ore, lithium (Lepidolite) ....	45 g	37
124d	Bronze (Cu85-Pb5-Sn5-Zn5) ounce metal .....	150 g	43	184	Bronze, leaded-tin .....	150 g	43
125b	Steel, high silicon .....	150 g	43	185e	Potassium hydrogen phthalate, pH .....	60 g	45
126c	Steel, high-nickel (36% Ni) ..	150 g	43	186Ic	Potassium dihydrogen phosphate, pH .....	30 g	45
127b	Solder (Sn40-Pb60) .....	150 g	43	186IIc	Disodium hydrogen phosphate, pH .....	30 g	40
129c	Steel, high-sulfur .....	150 g	43	187b	Borax, pH .....	30 g	40
131c	Steel, low carbon silicon .....	150 g	43	188	Potassium hydrogen tartrate, pH .....	60 g	40
132b	Steel, tool .....	150 g	43	189	Potassium tetroxalate, pH ...	65 g	40
132b	Steel, tool .....	150 g	43	191	Sodium bicarbonate, pH .....	30 g	43
133a	Steel, stainless (Cr13-Mo0.3-S0.3) .....	150 g	43	192	Sodium carbonate, pH .....	30 g	43
134a	Steel, Mo8-W2-Cr 4-V1 .. ...	150 g	43	193	Potassium nitrate, fertilizer .	90 g	55
136c	Potassium dichromate, oxidimetric .....	60 g	42	194	Ammonium dihydrogen phosphate, fertilizer .....	90 g	55
139a	Steel, Cr-Ni-Mo (AISI 8640)	150 g	43	195	Ferrosilicon (75% Si, high purity) .....	75 g	56
140b	Benzoic acid .....	2 g	38	196	Ferrochromium (low carbon)	100 g	55
141c	Acetanilide .....	2 g	39	198	Silica refractory (0.2% Al <sub>2</sub> O <sub>3</sub> )	45 g	37
142	Anisic acid .....	2 g	36				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
199	Silica refractory (0.5% Al <sub>2</sub> O <sub>3</sub> )	45 g	37	356	Titanium alloy, 6Al-4V .....	ea	50
200	Potassium dihydrogen phosphate, fertilizer .....	90 g	54	360a	Zircaloy-2 .....	100 g	65
217b-5	2,2,4-Trimethylpentane .....	5 ml	68	361	Steel, AISI 4340, chip .....	150 g	43
217b-8S	2,2,4-Trimethylpentane .....	8 ml	75	362	Steel, AISI 94B17 (modified), chip .....	150 g	43
217b-25	2,2,4-Trimethylpentane .....	25 ml	190	363	Steel, Cr-V (modified), chip .....	150 g	43
276	Tungsten carbide .....	75 g	37	364	Steel, high carbon (modified), chip .....	150 g	43
291	Steel, Cr-Mo (ASTM A213-65) .....	150 g	43	365	Iron, electrolytic, chip .....	150 g	43
293	Steel, Cr-Ni-Mo (AISI 8620)	150 g	43	366	Set, 1 ea of 361, 362, 363, 364 and 365 .....	set	110
307	Metallic brown .....	60 g	36	370e	Zinc oxide (Set of 4) .....	8 kg	67
329	Zinc concentrate .....	100 g	38	371g	Sulfur (Set of 4) .....	6 kg	51
330	Copper, millheads .....	100 g	56	372h	Stearic acid (Set of 4) .....	3.2 kg	48
331	Copper, milltails .....	100 g	56	373f	Benzothiazyl disulfide (Set of 4) .....	2 kg	50
332	Copper, concentrate .....	50 g	56	374c	Tetramethylthiuram disulfide .....	2 kg	50
333	Molybdenum, concentrate ...	35 g	56	375g	Channel black (Set of 4) .....	28 kg	141
335	Steel, B.O.H. 0.1C (carbon only) .....	300 g	37	376b	Light magnesia .....	450 g	35
336	Steel, Cr-V (carbon only), 1-g pins .....	75 g	41	377	Phenyl-beta-naphthylamine ..	600 g	37
337	Steel, B.O.H. 1.1C (carbon only) .....	300 g	37	378b	Oil Furnace black .....	80 Kg	80
339	Steel, stainless, Cr17-Ni9-0.2Se (SAE 303Se) .....	150 g	50	379	Conducting black .....	5.5 Kg	36
340	Ferroniobium .....	100 g	55	380	Calcium carbonate .....	6 kg	35
341	Iron, ductile .....	150 g	43	381	Calcium silicate .....	4 kg	35
342	Iron, nodular .....	150 g	43	382a	Gas furnace black (Set of 4) .....	32 kg	62
342a	Iron, nodular .....	150 g	45	383	Mercaptobenzothiazole (Set of 4) .....	3.2 kg	43
344	Steel, stainless, Cr15-Ni7-Mo2-Al1 .....	150 g	43	384b	N-tertiary-Butyl-2-benzothiazolesulfenamide (set of 4) ...	3.2 kg	*
345	Steel, stainless, Cr16-Ni4-Cu3 ..	150 g	43	385b	Natural rubber .....	31.4 kg	115
346	Steel, valve, Cr22-Ni4-Mn9 ..	150 g	50	386h	Styrene-butadiene type 1500 .....	34 kg	72
348	Steel, Ni26-Cr15 (A286) .....	150 g	43	388i	Butyl rubber .....	34 kg	113
349	Nickel-base alloy, Ni57-Co14-Cr20 .....	150 g	43	389	Styrene-butadiene, type 1503 .....	34 kg	64
350	Benzoic acid, acidimetric ....	30 g	42	391	Acrylonitrile-butadiene rubber .....	25 kg	115
352	Titanium, unalloyed, for hydrogen .....	20 g	45	392	Ethylene Thiourea .....	400 g	*
353	Titanium, unalloyed, for hydrogen .....	20 g	45	394	Unalloyed copper, Cu I .....	50 g	87
354	Titanium, unalloyed, for hydrogen .....	20 g	45	395	Unalloyed copper, Cu II .....	50 g	87
355	Titanium, unalloyed, for oxygen .....	ea	50	396	Unalloyed copper, Cu III .....	50 g	87
				404a	Steel, basic electric .....	ea	40
				405a	Steel, medium manganese ...	ea	40
				407a	Steel, chromium-vanadium ..	ea	40
				408a	Steel, chromium-nickel .....	ea	40
				409b	Steel, nickel .....	ea	40
				413	Steel, A.O.H. 0.4C .....	ea	40

\* In preparation

SRM	Type	Unit	Price	SRM	Type	Unit	Price
414	Steel, Cr-Mo (SAE 4140) ....	ea	40	482	Microprobe, Gold-copper wires .....	set	140
417a	Steel, B.O.H. 0.4C .....	ea	40	483	Microprobe, Iron-3% silicon .....	ea	60
418	Steel, Cr-Mo (SAE X4130) ..	ea	40	493	Iron carbide in ferrite .....	ea	95
418a	Steel, Cr-Mo (SAE X4130) ..	ea	40	593	Hydrocarbon blends—Blend No.2 .....	set	42
420a	Iron, ingot .....	ea	40	595	Hydrocarbon blends—Blend No.4 .....	set	42
427	Steel, Cr-Mo (boron only) (SAE 4150) .....	ea	40	596	Hydrocarbon blends—Blend No.5 .....	set	42
434	Tin D .....	ea	45	597	Hydrocarbon blends—Blend No.6 .....	set	42
436	Steel, special Cr6-Mo3-W10 ..	ea	45	599	Hydrocarbon blends—Blend No.8 .....	set	42
437	Steel, special Cr8-Mo2-W3-Co3 .....	ea	45	607	Potassium Feldspar, Trace Rubidium and Strontium .....	5 g	46
438	Steel, Mo high speed (AISI-SAE-M30) .....	ea	45	608	Glass, trace elements, set 2 each 614 and 616 .....	set	206
439	Steel, Mo high speed (AISI-SAE-M36) .....	ea	45	609	Glass, trace elements, set 2 each 615 and 617 .....	set	206
440	Steel, special W high speed Cr2-W13-Co12 .....	ea	45	610	Glass, trace elements 500 ppm, 3 mm .....	ea	73
441	Steel, W high speed (AISI-SAE-TI) .....	ea	45	611	Glass, trace elements 500 ppm, 1 mm .....	ea	73
442	Steel, stainless, Cr16-Ni10 ..	ea	45	612	Glass, trace elements 50 ppm, 3 mm .....	ea	73
443	Steel, stainless, Cr18.5-Ni9.5 ..	ea	45	613	Glass, trace elements 50 ppm, 1 mm .....	ea	73
444	Steel, stainless, Cr20.5-Ni10 ..	ea	45	614	Glass, trace elements 1 ppm, 3 mm .....	ea	73
445	Steel, stainless, Cr13-Mo0.9 (Modified AISI 410) .....	ea	45	615	Glass, trace elements 1 ppm, 1 mm .....	ea	73
446	Steel, stainless, Cr18-Ni9 (Modified AISI 321) .....	ea	45	616	Glass, trace elements .02 ppm, 3 mm .....	ea	73
447	Steel, stainless, Cr24-Ni13 (Modified AISI 309) .....	ea	45	617	Glass, trace elements .02 ppm, 1 mm .....	ea	73
448	Steel, stainless, Cr9-Mo0.3 (Modified AISI 403) .....	ea	45	618	Glass, trace elements, 3 mm .....	set	206
449	Steel, stainless, Cr5.5-Ni6.5 ..	ea	45	619	Glass, trace elements, 1 mm .....	set	206
450	Steel, stainless, Cr3-Ni25 ....	ea	45	620	Glass flat, soda lime .....	pkg (3)	55
461	Steel, low-alloy A .....	ea	45	621	Glass, container, soda lime ..	pkg (3)	62
462	Steel, low-alloy B .....	ea	45	622	Glass, soda lime .....	ea	77
463	Steel, low-alloy C .....	ea	45	623	Glass, borosilicate .....	ea	77
464	Steel, low-alloy D .....	ea	45	625	Zinc-base A .....	ea	60
465	Iron, ingot E .....	ea	45	626	Zinc-base B .....	ea	60
466	Iron, ingot F .....	ea	45				
467	Steel, low-alloy G .....	ea	45				
468	Steel, low-alloy H .....	ea	45				
478	Microprobe, cartridge brass ..	set (2)	54				
479	Microprobe, Fe-Cr-Ni Alloy ..	ea	60				
480	Microprobe, Tungsten—20% Molybdenum alloy .....	ea	135				
481	Microprobe, Gold-silver wires ..	set	140				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
627	Zinc-base C .....	ea	60	685W	Gold, high-purity (wire) .....	ea	91
628	Zinc-base D .....	ea	60	700c	Paper, light-sensitive .....	pkg	50
629	Zinc-base E .....	ea	60	701c	Paper, standard faded strips .....	blklt	165
630	Zinc-base F .....	ea	60	702	Plastic chips, light-sensitive .....	pkg	50
631	Zinc spelter (modified) .....	ea	60	703	Plastic chips, light-sensitive .....	pkg	50
633	Cement, Portland B (red) ....	set (3)	38	704a	Paper, internal tearing resistance .....	set (4)	66
634	Cement, Portland C (gold) ..	set (3)	38	705	Polystyrene, narrow molecular weight .....	5 g	93
635	Cement, Portland D (blue) ..	set (3)	38	706	Polystyrene, broad molecular weight .....	18 g	43
636	Cement, Portland F (yellow)	set (3)	38	707	Water vapor permeance, 12 sheets .....	pkg	55
637	Cement, Portland G (pink) ..	set (3)	38	708	Glass, relative stress optical coefficient .....	set (2)	81
638	Cement, Portland I (green) ..	set (3)	38	709	Glass, extra dense lead, 4×4 ×5 cm .....	500 g	76
639	Cement, Portland J (clear) ..	set (3)	38	710	Glass, soda-lime silica .....	900 g	62
640	X-Ray diffraction standard ..	10 g	56	711	Glass, lead-silica .....	1.3 kg	85
641	Titanium alloy 8Mn(A) .....	ea	60	712	Glass, mixed alkali lead silicate .....	225 g	48
642	Titanium alloy 8Mn(B) .....	ea	60	713	Glass, dense barium crown ..	225 g	48
643	Titanium alloy 8Mn(C) .....	ea	60	714	Glass, alkaline earth alumina silicate .....	225 g	48
644	Titanium alloy 2Cr-2Fe-2Mo(A) .....	ea	60	715	Glass, alkali-free aluminosilicate .....	200 g	48
645	Titanium alloy 2Cr-2Fe-2Mo(B) .....	ea	60	716	Glass, neutral (borosilicate) ..	250 g	48
646	Titanium alloy 2Cr-2Fe-2Mo(C) .....	ea	60	717	Glass, standard, borosilicate .....	450 g	81
654a	Titanium alloy, 6A1-4V .....	ea	45	718	Polycrystalline alumina, elasticity .....	ea	205
661	Steel, AISI 4340, rod .....	ea	35	720	Sapphire, synthetic ( $\text{Al}_2\text{O}_3$ ) ..	15 g	66
662	Steel, AISI 94B17 (modified), rod .....	ea	35	723	Tris(hydroxymethyl)aminomethane, basimetric .....	50 g	61
663	Steel, Cr-V (modified), rod ..	ea	35	724a	Tris(hydroxymethyl)aminomethane, calorimetric .....	50 g	55
664	Steel, high carbon (modified), rod .....	ea	35	725	Mossbauer differential chemical shift .....	ea	165
665	Iron, electrolytic, rod .....	ea	35	726	Selenium .....	450 g	55
666	Set of one each (661 & 665)	set	50	728	Zinc .....	450 g	53
667	Set of one each (662 & 663)	set	50	730-S1S	Tungsten, thermal conductivity 3.2mm diam.. 50mm long ..	ea	76
668	Set of one each (661, 662, 663, 664 and 665) .....	set	85	730-S2S	Tungsten, thermal conductivity 3.2mm diam., 100mm long ..	ea	97
671	Nickel oxide 1 .....	25 g	45	730-S3S	Tungsten, thermal conductivity 3.2mm diam., 200mm long ..	ea	159
672	Nickel oxide 2 .....	25 g	45	730-M1S	Tungsten, thermal conductivity 6.4mm diam, 50mm long ..	ea	81
673	Nickel oxide 3 .....	25 g	45				
680L-1	Platinum, high-purity .....	ea	55				
680L-2	Platinum, high-hunuity .....	ea	233				
681L-1	Platinum, doped .....	ea	50				
681L-2	Platinum, doped .....	ea	233				
682	Zinc, high-purity .....	ea	100				
683	Zinc metal .....	ea	65				
685R	Gold, high-purity (rod) .....	ea	161				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
730-M2S	Tungsten, thermal conductivity 6.4mm diam., 100mm long	ea	108	735L2	Stainless steel, thermal conductivity, rod 3.2 cm diam., 10 cm long .....	ea	185
730-M3S	Tungsten, thermal conductivity 6.4mm diam., 200mm long	ea	180	736L1	Copper, thermal expansion, 51mm .....	ea	81
730-S1A	Tungsten, thermal conductivity 6.4mm diam., 50mm long	ea	81	736L2	Copper, thermal expansion, 102mm .....	ea	129
730-S2A	Tungsten, thermal conductivity 6.4mm diam., 100mm long	ea	108	736L3	Copper, thermal expansion, 152mm .....	ea	177
730-S3A	Tungsten, thermal conductivity 6.4mm diam., 200mm long	ea	180	737	Tungsten, thermal expansion 6 mm diam., 51 mm long.....	ea	81
730-MA	Tungsten, thermal conductivity 8.3mm diam., 50mm long	ea	86	739L1	Fused-silica, thermal expansion, 51mm .....	ea	81
730-LA	Tungsten, thermal conductivity 10.2mm diam., 50mm long	ea	91	739L2	Fused-silica, thermal expansion, 102mm .....	ea	129
730-LXA	Tungsten, thermal conductivity 12.7mm diam., 50mm long ....	ea	102	739L3	Fused-silica, thermal expansion, 152mm .....	ea	177
731L1	Borosilicate glass, thermal expansion, 51mm .....	ea	81	740	Zinc, primary freezing-point std. .....	350 g	106
731L2	Borosilicate glass, thermal expansion, 102mm .....	ea	129	741	Tin, primary freezing-point std. .....	350 g	131
731L3	Borosilicate glass, thermal expansion, 152mm .....	ea	177	742	Alumina, high temperature melting point .....	10 g	73
733	Thermocouple wire, Silver—28% Gold, 32 AWG (0.2019mm dia.) and 3 meters long .....	ea	95	743	Mercury freezing point .....	680 g	138
734S	Iron, electrolytic, thermal conductivity, rod 6.4 mm diam., 305 mm long .....	ea	85	745	Gold, vapor pressure std. ...	ea	95
734L1	Iron, electrolytic, thermal conductivity, rod, 31.8 mm diam.. 152 mm long .....	ea	95	746	Cadmium, vapor pressure std.	ea	75
734L2	Iron, electrolytic, thermal conductivity, rod 31.8 mm diam., 305 mm long .....	ea	160	747	Platinum, vapor pressure standard .....		*
735S	Stainless steel, thermal conductivity, rod 0.65 cm diam., 30 cm long .....	ea	85	748	Silver, vapor pressure std. ...	da	85
735M1	Stainless steel, thermal conductivity, rod 1.25 cm diam., 15 cm long .....	ea	110	749	Tungsten, vapor pressure standard .....		*
735M2	Stainless steel, thermal conductivity, rod 1.25 cm diam., 30 cm long .....	ea	160	758	DTA temperature std. (125-435°C) .....	set (5)	55
735L1	Stainless steel, thermal conductivity, rod 3.2 cm diam., 5 cm long .....	ea	135	759	DTA temperature std. (295-675°C) .....	set (5)	55
				760	DTA temperature std. (570-940°C) .....	set (5)	55
				763-1	Aluminum, magnetic susceptibility, cylinder .....	ea	51
				763-2	Aluminum, magnetic susceptibility, wire .....	ea	46
				763-3	Aluminum, magnetic susceptibility, (GOUY), rod .....	ea	106
					* In preparation		

SRM	Type	Unit	Price	SRM	Type	Unit	Price
764-1	Platinum, magnetic susceptibility, cylinder .....	ea	96	799-S3A	Tungsten, electrical conductivity 6.4mm. diam., 200mm long .....	ea	180
764-2	Platinum, magnetic susceptibility, wire .....	ea	56	803a	Steel, A.O.H. 0.6C .....	ea	40
765-1	Palladium, magnetic susceptibility, cylinder .....	ea	106	D803a	Steel, A.O.H. 0.6C .....	ea	45
765-2	Palladium, magnetic susceptibility, wire .....	ea	66	804a	Steel, basic electric .....	ea	40
765-3	Palladium, magnetic susceptibility, sponge .....	ea	81	805a	Steel, medium manganese ..	ea	40
766-1	Manganese fluoride, magnetic susceptibility, cube .....	ea	81	807a	Steel, chromium-vanadium ..	ea	40
767	Superconducting fixed point	ea	256	D807a	Steel, chromium-vanadium ..	ea	45
797-1	Electrolytic iron, 5 cm .....	ea	54	808a	Steel, chromium-nickel .....	ea	40
797-2	Electrolytic iron, 10 cm .....	ea	64	809b	Steel, nickel .....	ea	40
797-3	Electrolytic iron, 15 cm .....	ea	79	D809b	Steel, nickel .....	ea	45
798-1	Austenitic stainless steel, 5 cm .....	ea	54	810a	Steel, Cr2-Mo1 .....	ea	40
798-2	Austenitic stainless steel, 10 cm .....	ea	64	817a	Steel, B.O.H. 0.4C .....	ea	40
798-3	Austenitic stainless steel, 15 cm .....	ea	79	820a	Iron, ingot .....	ea	40
799-S1S	Tungsten, electrical conductivity 3.2mm diam., 50mm long .....	ea	76	D820a	Iron, ingot .....	ea	45
799-S2S	Tungsten, electrical conductivity 3.2mm diam., 100mm long .....	ea	97	821	Steel, Cr-W, 0.9C .....	ea	40
799-S3S	Tungsten, electrical conductivity 3.2mm diam., 200mm long .....	ea	159	827	Steel, Cr-Mo (boron only) (SAE 4150) .....	ea	40
799-M1S	Tungsten, electrical conductivity 6.4mm diam., 50mm long .....	ea	81	837	Steel, special (Cr8-Mo2-W3-Co3) .....	ea	53
799-M2S	Tungsten, electrical conductivity 6.4mm diam., 100mm long .....	ea	108	D837	Steel, special (Cr8-Mo2-W3-Co3) .....	ea	60
799-M3S	Tungsten, electrical conductivity 6.4mm diam., 200mm long .....	ea	180	838	Steel, Mo high speed (AISI-SAE-M30) .....	ea	53
799-S1A	Tungsten, electrical conductivity 6.4mm diam., 50mm long .....	ea	81	D838	Steel, Mo high speed (AISI-SAE-M30) .....	ea	60
799-S2A	Tungsten, electrical conductivity 6.4mm diam., 100mm long .....	ea	108	D839	Steel, Mo high speed (AISI-SAE-M36) .....	ea	60
				840	Steel, special W high speed (Cr2-W13-Co12) .....	ea	53
				D840	Steel, special W high speed (Cr2-W13-Co12) .....	ea	60
				D841	Steel, W high speed (AISI-SAE-T1) .....	ea	60
				849	Steel, Cr5.5-Ni6.5 .....	ea	53
				D849	Steel, Cr5.5-Ni6.5 .....	ea	60
				850	Steel, Cr3-Ni25 .....	ea	53
				D850	Steel, Cr3-Ni25 .....	ea	60
				911a	Cholesterol, clinical .....	2 g	50
				912	Urea, clinical .....	25 g	46
				913	Uric acid, clinical .....	10 g	40
				914	Creatinine, clinical .....	10 g	46
				915	Calcium carbonate, clinical ..	20 g	40

SRM	Type	Unit	Price	SRM	Type	Unit	Price
916	Bilirubin, clinical .....	100 mg	102	976	Copper metal—isotopic .....	0.25 g	50
917	D-Glucose, clinical .....	25 g	53	977	Sodium bromide—isotopic ..	0.25 g	50
918	Potassium chloride, clinical ..	30 g	50	978	Silver nitrate—isotopic .....	0.25 g	50
919	Sodium chloride, clinical ....	30 g	50	979	Chromium nitrate—isotopic ..	0.25 g	50
920	D-Mannitol, clinical .....	50 g	67	980	Magnesium metal—isotopic ..	0.25 g	50
921	Cortisol .....	1 g	69	981-3	Lead—isotopic .....	set	115
922	Tris(hydroxymethyl)amino-methane, clinical .....	25 g	50	984	Rubidium chloride, isotopic ..	1 g	53
923	Tris(hydroxymethyl)amino-methane hydrochloride, clinical .....	35 g	50	987	Strontium carbonate, isotopic ..	1 g	50
924	Lithium carbonate, clinical ..	30 g	60	988	Strontium-84 spike, isotopic ..	1 mg	160
925	VMA(4-Hydroxy-3-Methoxy-mandelic acid) clinical .....	1 g	63	989	Rhenium, assay and isotopic pkg (50)	84	
928	Lead nitrate .....	30 g	45	990	Silicon, assay and isotopic ..	ea	92
930c	Glass filters for spectrophotometry, clinical .....	set (3)	492	991	Lead-206, assay and isotopic ..	ea	122
931a	Liquid filters for spectrophotometry, clinical, 3 sets of 4	set (12)	75	993	Uranium-235, spike .....	15 g	138
932	Quartz cuvette for spectrophotometry .....	ea	200	999	Potassium chloride, primary ..	60 g	63
933	Clinical laboratory thermometers .....	set (3)	387	1001	X-ray step tablet, 0-4 .....	ea	80
934	Clinical laboratory thermometer .....	ea	237	1002b	Hardboard sheet .....	set (4)	45
944	Plutonium sulfate tetrahydrate, assay .....	0.5 g	86	1003	Glass spheres (5-30 $\mu\text{m}$ ) ....	40 g	43
945	Plutonium metal, std. matrix .....	5 g	510	1004	Glass beads (sieve Nos. 140-400) .....	63 g	58
946	Plutonium, 12% isotopic ....	0.25 g	160	1006	Smoke density std., nonflaming .....	set (3)	42
947	Plutonium, 18% isotopic ....	0.25 g	160	1007a	Smoke density std., flaming .....	set (3)	47
948	Plutonium, 8% isotopic .....	0.25 g	77	1008	Photographic step tablet, 0-4 ..	ea	78
949e	Plutonium metal, assay .....	0.5 g	192	1009	Photographic step tablet 0-3 ..	ea	64
950b	Uranium oxide( $\text{U}_3\text{O}_8$ ) .....	25 g	*	1010a	Microcopy test chart .....	set (5)	20
951	Boric acid .....	100 g	65	1016	Cement, Portland .....	set (3)	38
952	Boric acid, 95% enriched $^{10}\text{B}$ .....	0.25 g	50	1017a	Glass beads (sieve Nos. 50-140) .....	84 g	50
953	Neutron density monitor wire, 1 meter long .....	ea	49	1018a	Glass beads (sieve Nos. 25-60) .....	74 g	50
960	Uranium metal, assay .....	26 g	60	1019	Glass spheres (sieve Nos. 8-18) .....	100 g	41
961	Fission Track Glass U-461 ..	set (6)	56	1020	Zinc sulfide phosphor .....	14 g	34
962	Fission Track Glass U-37 ..	set (6)	56	1021	Zinc silicate phosphor .....	28 g	34
963	Fission Track Glass U-0.8 ..	set (6)	56	1022	Zinc sulfide phosphor .....	14 g	34
964	Fission Track Glass U-0.07 ..	set (6)	56	1023	Zinc-cadmium sulfide phosphor (Ag activator) .....	14 g	36
975	Sodium chloride—isotopic ..	0.25 g	50	1024	Zinc-cadmium sulfide phosphor (Cu activator) .....	14 g	34
* In preparation				1025	Zinc phosphate phosphor ....	28 g	34
				1026	Calcium tungstate phosphor .....	28 g	34
				1027	Magnesium tungstate phosphor .....	28 g	34
				1028	Zinc silicate phosphor .....	28 g	34
				1029	Calcium silicate phosphor ...	14 g	34

SRM	Type	Unit	Price	SRM	Type	Unit	Price
1030	Magnesium arsenate phosphor .....	28 g	34	1091	Gasometric, steel, stainless (AISI 431) .....	ea	65
1031	Calcium halophosphate phosphor .....	28 g	34	1092	Gasometric, steel, vacuum-melted .....	ea	65
1032	Barium silicate phosphor ....	28 g	34	1093	Gasometric, steel, valve ....	ea	65
1033	Calcium phosphate phosphor	28 g	34	1094	Gasometric, steel, margaging	ea	65
1051b	Barium cyclohexanebutyrate	5 g	41	1095	Gasometric, steel, AISI 4340, rod .....	ea	43
1052b	Bis(1-phenyl-1,3-butanediono) oxovanadium (IV) .....	5 g	41	1096	Gasometric, steel, AISI 94B17 (modified), rod .....	ea	43
1053a	Cadmium cyclohexanebutyrate .....	5 g	41	1097	Gasometric, steel, Cr-V (modified), rod .....	ea	43
1055b	Cobalt cyclohexanebutyrate	5 g	41	1098	Gasometric, steel, high-carbon (modified), rod .....	ea	43
1057b	Dibutyltin bis(2-ethylhexanoate) .....	5 g	41	1099	Gasometric, iron, electrolytic, rod .....	ea	43
1059b	Lead cyclohexanebutyrate ..	5 g	41	1101	Brass, cartridge B .....	ea	75
1060a	Lithium cyclohexanebutyrate	5 g	41	C1101	Brass, cartridge B .....	ea	75
1061c	Magnesium cyclohexanebutyrate .....	5 g	41	1102	Brass, cartridge C .....	ea	75
1062b	Manganous cyclohexanebutyrate .....	5 g	70	1103	Brass, free-cutting A .....	ea	75
1063a	Methylborate .....	5 g	41	C1103	Brass, free-cutting A .....	ea	75
1064	Mercuric cyclohexanebutyrate .....	5 g	41	1104	Brass, free-cutting B .....	ea	75
1065b	Nickel cyclohexanebutyrate	5 g	41	C1104	Brass, free-cutting B .....	ea	75
1066a	Octaphenylcyclotetrasiloxane	5 g	41	1105	Brass, free-cutting C .....	ea	75
1069b	Sodium cyclohexanebutyrate	5 g	41	C1105	Brass, free-cutting C .....	ea	75
1070a	Strontium cyclohexanebutyrate .....	5 g	41	1106	Brass, naval A .....	ea	75
				C1106	Brass, naval A .....	ea	75
1071b	Triphenyl phosphate .....	5 g	47	1107	Brass, naval B .....	ea	75
1073b	Zinc cyclohexanebutyrate ...	5 g	41	C1107	Brass, naval B .....	ea	75
1074a	Calcium 2-ethylhexanoate ...	5 g	41	1108	Brass, naval C .....	ea	75
1075a	Aluminum 2-ethylhexanoate	5 g	41	C1108	Brass, naval C .....	ea	75
1076	Potassium erucate .....	5 g	41	1109	Brass, red A .....	ea	75
1077a	Silver 2-ethylhexanoate .....	5 g	41	C1109	Brass, red A .....	ea	75
1078b	Tris(1-phenyl-1,3-butanediono) Chromium (III) .....	5 g	43	1110	Brass, red B .....	ea	75
1079b	Tris(1-phenyl-1,3-butanediono) iron (III) .....	5 g	41	C1110	Brass, red B .....	ea	75
				1111	Brass, red C .....	ea	75
1080a	Bis(1-phenyl-1,3-butanediono) copper (II) .....	5 g	41	C1111	Brass, red C .....	ea	75
1089	Gasometric, set: 1 ea of 1095, 1096, 1097, 1098, and 1099 .....	set (5)	85	1112	Gilding metal A .....	ea	75
1090	Gasometric, iron, ingot .....	ea	65	C1112	Gilding metal A .....	ea	75
				1113	Gilding metal B .....	ea	75
				C1113	Gilding metal B .....	ea	75
				1114	Gilding metal C .....	ea	75
				C1114	Gilding metal C .....	ea	75
				1115	Bronze, commercial A .....	ea	75

SRM	Type	Unit	Price	SRM	Type	Unit	Price
C1115	Bronze, commercial A .....	ea	75	1171	Steel, Cr17-Ni11-Ti0.3, AISI 321, disk .....	ea	60
1116	Bronze, commercial B .....	ea	75	1172	Steel, Cr17-Ni11-Nb0.7, AISI 348, disk .....	ea	60
C1116	Bronze, commercial B .....	ea	75	1185	Steel, stainless, AMS 5360A, AISI 316 alloy .....	ea	75
1117	Bronze, commercial C .....	ea	75	1197	High temperature alloy, M308 .....	ea	59
C1117	Bronze, commercial C .....	ea	75	1198	High temperature alloy, Inco-loy 901 (Sold only in a set with SRM 1201) .....	set (2)	84
1118	Brass, aluminum A .....	ea	75	1199	High temperature alloy, L605 (Sold only in a set with SRM 1200) .....	set (2)	84
C1118	Brass, aluminum A .....	ea	75	1200	High temperature alloy, S816 (Sold only in a set with SRM 1199, above) .....		
1119	Brass, aluminum B .....	ea	75	1201	High temperature alloy, Hasteloy (Sold only in a set with SRM 1198, above) .....		
C1119	Brass, aluminum B .....	ea	75	1206-2	High temperature alloy, Rene 41 .....	ea	60
C1120	Brass, aluminum C .....	ea	75	1207-1	High temperature alloy, Waspaloy (No.1) .....	ea	60
1121	Beryllium copper CA-172 ....	ea	75	1207-2	High temperature alloy, Waspaloy (No.2) .....	ea	60
C1121	Beryllium copper CA-172 ....	ea	75	1208-1	High temperature alloy, Inco 718 (No.1) .....	ea	60
1122	Beryllium copper CA-170 ....	ea	75	1208-2	High temperature alloy, Inco 718 (No.2) .....	ea	60
C1122	Beryllium copper CA-170 ....	ea	75	1209	High temperature alloy, set: 1 ea of 1206-2, 1207-1, 1207-2, 1208-1, and 1208-2 .....	set	209
1123	Beryllium copper CA-175 ....	ea	75	1212a	Zirconium metal C .....	ea	64
C1123	Beryllium copper CA-175 ....	ea	75	1261	Steel, AISI 4340, disk .....	ea	55
1131	Solder (Sn40-Pb60) .....	ea	60	1262	Steel, AISI 94B17 (modified), disk .....	ea	55
1132	Bearing metal, lead-base .....	ea	60	1263	Steel, Cr-V (modified), disk .....	ea	55
1134	Steel, high-silicon .....	ea	60	1264	Steel, high carbon (modified), disk .....	ea	55
1135	Steel, high-silicon .....	ea	60	1265	Iron, electrolytic, disk .....	ea	55
1136	Steel, high-sulfur .....	ea	60	1266	Set: 1 ea of 1261, 1262, 1263, 1264, and 1265 .....	set	185
1138	Steel, cast 1 .....	ea	75	1301	Metal coating, nonmagnetic, 0.00010 in thick .....	ea	49
1139	Steel, cast 2 .....	ea	75	1302	Metal coating, nonmagnetic, 0.00025 in thick .....	ea	49
1140a	Iron, ductile 1 .....	ea	75	1303	Metal coating, nonmagnetic, 0.00050 in thick .....	ea	49
1142a	Iron, ductile 3 .....	ea	75				
1143a	Iron, blast furnace 1 .....	ea	75				
1144a	Iron, blast furnace 2 .....	ea	75				
1147a	Iron, white cast .....	ea	75				
1152	Steel, stainless B (Cr18-Ni10)	ea	75				
1154	Steel, stainless D (Cr19-Ni10)	ea	75				
1155	Steel, stainless, Cr18-Ni12-Mo2 .....	ea	75				
1156	Steel, maraging (disk form) .	ea	75				
1157	Steel, tool .....	ea	60				
1158	Steel, high nickel (36% Ni) ..	ea	60				
1159	Nickel-base alloy, 49% Ni, balance Fe .....	ea	75				
1160	Nickel-base alloy, 80% Ni, 4% Mo, balance Fe .....	ea	75				
1166	Iron, ingot F .....	ea	75				
1169	Steel, leaded .....	ea	75				
1170a	Steel, selenium-bearing .....	ea	44				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
1304	Metal coating, nonmagnetic, 0.00075 in thick .....	ea	49	1338	Metal coating, magnetic, 0.0020 in thick .....	ea	49
1305	Metal coating, nonmagnetic, 0.0010 in thick .....	ea	49	1339	Metal coating, magnetic, 0.0025 in thick .....	ea	49
1306	Metal coating, nonmagnetic, 0.0015 in thick .....	ea	49	1341	Metal coating, magnetic, 0.00012 in thick .....	ea	49
1307	Metap coating, nonmagnetic, 0.0020 in thick .....	ea	49	1342	Metal coating, magnetic, 0.00035 in thick .....	ea	49
1308	Metal coating, nonmagnetic, 0.0025 in thick .....	ea	49	1343	Metal coating, magnetic, 0.00065 in thick .....	ea	49
1309	Metal coating, nonmagnetic, 0.0027 in thick .....	ea	49	1344	Metal coating, magnetic, 0.0010 in thick .....	ea	49
1310	Metal coating, nonmagnetic, 0.0032 in thick .....	ea	49	1345	Metal coating, magnetic, 0.0015 in thick .....	ea	49
1311	Metal coating, nonmagnetic, 0.0055 in thick .....	ea	49	1346	Metal coating, magnetic, 0.0020 in thick .....	ea	49
1312	Metal coating, nonmagnetic, 0.0080 in thick .....	ea	49	1351	Set of one each 1307 and 1311 .....	set (2)	63
1313	Metal coating, nonmagnetic, 0.010 in thick .....	ea	49	1352	Set of one each 1332 and 1334 .....	set (2)	63
1314	Metal coating, nonmagnetic, 0.015 in thick .....	ea	49	1353	Set of one each 1335 and 1339 .....	set (2)	63
1315	Metal coating, nonmagnetic, 0.020 in thick .....	ea	49	1361	Set of one each 1302, 1303, 1305, and 1307 .....	set (4)	92
1316	Metal coating, nonmagnetic, 0.025 in thick .....	ea	49	1362	Set of one each 1306, 1310, 1311, and 1312 .....	set (4)	92
1317	Metal coating, nonmagnetic, 0.03 in thick .....	ea	49	1363	Set of one each 1313, 1314, 1315, and 1316 .....	set (4)	92
1318	Metal coating, nonmagnetic, 0.04 in thick .....	ea	49	1364	Set of one each 1317, 1318, 1319, and 1320 .....	set (4)	92
1319	Metal coating, nonmagnetic, 0.06 in thick .....	ea	49	1365	Set of one each 1331, 1332, 1333, and 1334 .....	set (4)	92
1320	Metal coating, nonmagnetic, 0.08 in thick .....	ea	49	1366	Set of one each 1335, 1336, 1337, and 1338 .....	set (4)	92
1331	Metal coating, magnetic, 0.00012 in thick .....	ea	49	1367	Set of one each 1341, 1342, 1343, and 1344 .....	set (4)	92
1332	Metal coating, magnetic, 0.00035 in thick .....	ea	49	1368	Set of one each 1312, 1313, 1314, and 1315 .....	set (4)	92
1333	Metal coating, magnetic, 0.00055 in thick .....	ea	49	1369	Set of one each 1316, 1317, 1318, and 1319 .....	set (4)	92
1334	Metal coating, magnetic, 0.00075 in thick .....	ea	49	1370	Set of one each 1312, 1313, 1314, 1315, 1316, 1317, 1318, and 1319 .....	set (8)	149
1335	Metal coating, magnetic, 0.0010 in thick .....	ea	49	1371	Gold coating (Fe-Ni-Co) 30 microinches .....	ea	92
1336	Metal coating, magnetic, 0.0013 in thick .....	ea	49	1372	Gold coating (Fe-Ni-Co) 60 microinches .....	ea	92
1337	Metal coating, magnetic, 0.0016 in thick .....	ea	49				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
1373	Gold coating (Fe-Ni-Co) 120 microinches .....	ea	92	1442	Emittance std., 1 in. disk ....	ea	190
1374	Gold coating (Fe-Ni-Co) 280 microinches .....	ea	92	1443	Emittance std., 1 1/8 in. disk	ea	190
1375	Gold coating (Nickel) 30 microinches .....	ea	92	1444	Emittance std., 1 1/4 in. disk	ea	190
1376	Gold coating (Nickel) 60 microinches .....	ea	92	1445	Emittance std., 2 in. × 2 in.	ea	190
1377	Gold coating (Nickel) 120 microinches .....	ea	92	1475	Polyethylene, linear .....	50 g	110
1378	Gold coating (Nickel) 350 microinches .....	ea	92	1476	Polyethylene, branched .....	50 g	85
1381	Set of one each 1371 and 1372 .....	set (2)	149	1482	Polyethylene, linear 13,600 Mw .....	ea	206
1382	Set of one each 1372 and 1373 .....	set (2)	149	1483	Polyethylene, linear 32,100 Mw .....	ea	206
1383	Set of one each 1373 and 1374 .....	set (2)	149	1484	Polyethylene, linear 119,600 Mw .....	ea	206
1384	Set of one each 1375 and 1376 .....	set (2)	149	1511	Cyclohexane, dielectric .....	400 ml	135
1385	Set of one each 1376 and 1377 .....	set (2)	149	1512	1.2 Dichloroethane, dielectric	400 ml	130
1386	Set of one each 1377 and 1378 .....	set (2)	149	1513	Nitrobenzene, dielectric .....	400 ml	130
1398	Set of one each 1371, 1372, 1373, and 1374 .....	set (4)	264	1516	Permittivity std., 38 mm × 2.5 mm .....	ea	203
1399	Set of one each 1375, 1376, 1377, and 1378 .....	set (4)	264	1517	Permittivity std., 38 mm × 5 mm .....	ea	203
1402	Emittance std., 1/2 in. disk .	ea	190	1518	Permittivity std., 51 mm × 2.5 mm .....	ea	203
1403	Emittance std., 7/8 in. disk .	ea	200	1519	Permittivity std., 51 mm × 5 mm .....	ea	203
1404	Emittance std., 1 in. disk ...	ea	215	1520	Resistivity, boron-doped silicon .....	set (2)	431
1405	Emittance std., 1 1/8 in. disk	ea	250	1541	Mossbauer, iron foil .....	ea	160
1406	Emittance std., 1 1/4 in. disk	ea	265	1570	Spinach, trace elements, botanical .....	60 g	77
1407	Emittance std., 2 in × 2 in. .	ea	400	1571	Orchard leaves, trace element, botanical .....	75 g	78
1408	Emittance std., 1 in. × 10 in.	ea	765	1573	Tomato leaves, trace elements, botanical .....	70 g	77
1409	Emittance std., 3/4 in. × 10 in. .....	ca	615	1575	Pine needles, trace elements, botanical .....	70 g	77
1420	Emittance std., 1/2 in. disk .	ea	190	1577	Liver, bovine, biological .....	50 g	98
1421	Emittance std., 7/8 in. disk .	ea	190	1579	Lead-base paint, powdered ..	35 g	41
1422	Emittance std., 1 in. disk ....	ea	190	1600	Tape, magnetic, secondary std., cassette .....	ea	146
1423	Emittance std., 1 1/8 in. disk	ea	190	1609	Oxygen in nitrogen, 20.98 mole percent .....	cyl	120
1424	Emittance std., 1 1/4 in. disk	ea	190	1621	Sulfur in residual fuel oil, 1.05 wt percent .....	100 ml	40
1425	Emittance std., 2 in × 2 in. .	ea	190	1622a	Sulfur in residual fuel oil, ~2.0 wt percent .....	100 ml	*
1427	Emittance std., 3/4 in. × 10 in. .....	ea	190	1623	Sulfur in residual fuel oil, 0.268 wt percent .....	100 ml	40
1428	Emittance std., 1/4 in. × 8 in.	ea	190				
1440	Emittance std., 1/2 in. disk .	ea	190				
1441	Emittance std., 7/8 in. disk .	ea	190				

\* In preparation

SRM	Type	Unit	Price	SRM	Type	Unit	Price
1624	Sulfur in distillate fuel oil, 0.211 wt percent .....	100 ml	40	1665a	Propane in Air 2.8 ppm .....	cyl	282
1625	Sulfur dioxide permeation tube 10 cm .....	ea	85	1666a	Propane in Air 9.5 ppm .....	cyl	282
1626	Sulfur dioxide permeation tube 5 cm .....	ea	85	1667a	Propane in Air 48 ppm .....	cyl	282
1627	Sulfur dioxide permeation tube 2 cm .....	ea	85	1668a	Propane in Air 95 ppm .....	cyl	282
1629	Nitrogen dioxide permeation device .....	ea	88	1669a	Propane in Air 475 ppm .....	cyl	282
1630	Trace mercury in coal .....	50 g	53	1673a	Carbon Dioxide in N <sub>2</sub> 0.95%	cyl	282
1631a	Sulfur in coal, three concentrations, 5 sets of 3 .....	set	*	1674a	Carbon Dioxide in N <sub>2</sub> 7.2% .	cyl	282
1632	Trace Elements in Coal .....	75 g	77	1675a	Carbon Dioxide in N <sub>2</sub> 14.2% .	cyl	282
1633	Trace Elements in Fly Ash	75 g	77	1677a	Carbon Monoxide in N <sub>2</sub> 9.74 ppm .....	cyl	305
1634	Trace Elements in Fuel Oil ..	100 ml	77	1678b	Carbon Monoxide in N <sub>2</sub> 47.1 ppm .....	cyl	305
1636	Lead in reference fuel .....	set (12)	61	1679a	Carbon Monoxide in N <sub>2</sub> 94.7 ppm .....	cyl	305
1637	Lead in reference fuel .....	set (12)	61	1680a	Carbon Monoxide in N <sub>2</sub> 484 ppm .....	cyl	305
1638	Lead in reference fuel .....	set (12)	61	1681a	Carbon Monoxide in N <sub>2</sub> 957 ppm .....	cyl	305
1641	Mercury in water 1 ppm .....	set (6)	62	1683a	Nitric oxide in N <sub>2</sub> 50 ppm ...	cyl	327
1651	Zirconium-barium chromate heat source powder (ca 350 cal/g) .....	50 g	65	1684a	Nitric oxide in N <sub>2</sub> 100 ppm ..	cyl	327
1652	Zirconium-barium chromate heat source powder (ca 390 cal/g) .....	50 g	65	1685a	Nitric oxide in N <sub>2</sub> 250 ppm ..	cyl	327
1653	Zirconium-barium chromate heat source powder (ca 425 cal/g) .....	50 g	65	1686a	Nitric oxide in N <sub>2</sub> 500 ppm ..	cyl	327
1654	$\alpha$ -Quartz for hydrofluoric acid solution calorimetry ....	25 g	185	1687a	Nitric oxide in N <sub>2</sub> 1000 ppm	cyl	327
1658	Methane in Air 0.95 ppm ....	cyl	283	1810	Linerboard for tape test .....	pkg	43
1659	Methane in Air 9.5 ppm .....	cyl	283	1815	n-Heptane .....	liter	194
1660	Methane (4 ppm) and Propane (1ppm) in Air .....	cyl	283	1816	Isooctane .....	liter	194
1661	Sulfur Dioxide in Nitrogen 480 ppm .....	cyl	356	1820	Refractive index glass .....	set (2)	63
1662	Sulfur Dioxide in Nitrogen 942 ppm .....	cyl	356	1821	Ethanol .....	120 ml	59
1663	Sulfur Dioxide in Nitrogen 1497 ppm .....	cyl	356	1823	Refractive index silicone liquids .....	set (2)	57
1664	Sulfur Dioxide in Nitrogen 2521 ppm .....	cyl	356	1901	Centerline Drawings, OCR-B Size I, 118 characters .....	ea	560
				1902	Centerline Drawings, OCR-B Size I, 93 characters .....	ea	449
				1903	Centerline Drawings, OCR-B Size I, 21 characters .....	ea	124
				1904	Centerline Drawings, OCR-B Size III, 21 characters .....	ea	124
				2030	Glass filter for transmittance measurement .....	ea	250

\* In preparation

SRM	Type	Unit	Price	SRM	Type	Unit	Price
2101-5	Color std. ....	set	385	2317	Set of one each 2313 and 2314 .....	set (2)	149
2106	ISCC-NBS color charts, with dictionary .....	set	15	2318	Set of one each 2311, 2312, 2313, and 2314 .....	set (4)	264
2141	Urea .....	2 g	43	2331	Tin coating 60 microinches ..	ea	92
2142	o-Bromobenzoic acid .....	2 g	43	2332	Tin coating 110 microinches	ea	92
2143	p-Fluorobenzoic acid .....	2 g	52	2333	Tin coating 160 microinches	ea	92
2144	m-Chlorobenzoic acid .....	2 g	45	2334	Tin coating 275 microinches	ea	92
2186-I	Potassium dihydrogen phosphate, pD .....	30 g	51	2335	Tin coating 650 microinches	ea	92
2186-II	Disodium hydrogen phosphate, pD .....	30 g	51	2336	Tin coating 750 microinches	ea	92
2191	Sodium bicarbonate, pD .....	30 g	51	2338	Set of one each 2332 and 2335 .....	set (2)	149
2192	Sodium carbonate, pD .....	30 g	51	2339	Set of one each 2331, 2333, 2334, and 2336 .....	set (4)	264
2201	Sodium chloride ion-selective electrode .....	125 g	44	2340	Set of one each 2331, 2332, 2333, 2334, 2335, and 2336 ..	set (6)	350
2202	Potassium chloride ion-selective electrode .....	160 g	44	2671	Freeze-dried urine certified for fluorine .....	set (2)	82
2203	Potassium fluoride .....	125 g	80	2672	Freeze-dried urine certified for mercury .....	set (2)	82
2301	Gold coating (epoxy) 30 microinches .....	ea	92	2675	Beryllium on filter media .....	set (3)	82
2302	Gold coating (epoxy) 60 microinches .....	ea	92	2676	Metals on filter media .....	set (3)	*
2303	Gold coating (epoxy) 120 microinches .....	ea	92	3200	Tape, magnetic, secondary std, reel .....	ea	705
2304	Gold coating (epoxy) 280 microinches .....	ea	92	3216	Tape, magnetic, secondary standard, cartridge .....	ea	167
2305	Set of one each 2301 and 2302 .....	set (2)	149	4200-B	Cesium-137, gamma-ray point source .....	ea	70
2306	Set of one each 2302 and 2303 .....	set (2)	149	4201-B	Niobium-94, gamma-ray point source .....	ea	162
2307	Set of one each 2303 and 2304 .....	set (2)	149	4202-B	Cadmium-109, gamma-ray point source .....	ea	104
2308	Set of one each 2301, 2302, 2303, and 2304 .....	set (4)	264	4203-C	Cobalt-60, gamma-ray point source .....	ea	118
2311	Gold coating (copper) 30 microinches .....	ea	92	4207	Cesium-137, gamma-ray point source .....	ea	70
2312	Gold coating (copper) 60 microinches .....	ea	92	4209-B	Yttrium-88 point source .....	ea	153
2313	Gold coating (copper) 120 microinches .....	ea	92	4210	Cobalt-60, gamma-ray point source .....	ea	96
2314	Gold coating (copper) 280 microinches .....	ea	92	4211	Americium-241, gamma-ray point source .....	ea	138
2315	Set of one each 2311 and 2312 .....	set (2)	149	4212	Krypton-85, gamma-ray point source .....	ea	170
2316	Set of one each 2312 and 2313 .....	set (2)	149	4213	Americium-241, gamma-ray point source .....	ea	138

\* In preparation

SRM	Type	Unit	Price	SRM	Type	Unit	Price
4214	Cobalt-57, gamma-ray point source .....	ea	88	4261	Cadmium-109 K-X-ray emission-rate std. ....	ea	104
4215	Mixed radionuclides, gamma-ray point source .....	ea	*	4302	Argon-39 .....		*
4216	Mixed radionuclides, gamma-ray point source .....	ea	*	4303	Argon-39 .....		*
4217	Silver-110m point source ....	ea	118	4308	Krypton-85 gamma-ray gas std. ....	ea	108
4218	Europium-152 point source ..	ea	*	4331	Plutonium-239 soln. std. ....	2 g	124
				4332	Americium-243 soln. std. ....	2 g	104
				4333	Americium-243 soln. std. ....	5 g	104
4219	Cadmium-109 soln std .....	5 g	104	4334	Plutonium-242 alpha-particle soln. std. ....	2 g	110
4222	Carbon-14(n-hexadecane) soln. std. ....	3 g	65	4335	Plutonium-242 alpha-particle soln. std. ....	5 g	110
4223	Carbon-14(n-hexadecane) soln. std. ....	3 g	65	4336	Polonium-210 alpha-particle soln. std. ....	3 g	122
4224	Carbon-14(n-hexadecane) soln. std. ....	3 g	65	4350	River sediment .....	100 g	164
4226	Nickel-63, soln. std. ....	4 g	159				
4229	Aluminum-26, soln. std. ....	4.6 g	210				
4232	Silver-110m soln. std. ....	5 g	118	4904-E	Americium-241, alpha-particle source .....		*
4233	Cesium-137-Barium-137m, Burn-up soln. std. ....	5.1 g	105	4906	Plutonium-238, alpha-particle source .....	ea	168
4234	Strontium-Yttrium-90 soln. std. ....	3 g	109	4907	Gadolinium-148, alpha-particle source .....	ea	102
4235	Krypton-85, gamma-ray std.	ea	110	4913-B	Cobalt-60 soln. std. ....	5 g	127
4240	Bismuth-207, gamma-ray point source .....	ea	149	4919-D	Strontium-90-Yttrium-90 soln. std. ....	3 g	102
4242	Mixed radionuclides, gamma-ray soln. std. ....	450 ml	*	4921-C	Sodium-22, soln. std. ....	3 g	52
4243	Mixed radionuclides, gamma-ray soln. std. ....	50 ml	*	4922-E	Sodium-22, soln. std. ....	5 g	71
4245	Carbon-14 (sodium carbonate) soln. std. ....	5 g	104	4925	Carbon-14 (benzoic acid in toluene) .....	3 g	58
4246	Carbon-14 (sodium carbonate) soln. std. ....	5 g	104	4926	Hydrogen-3 (water) .....	25 g	*
4247	Carbon-14 (sodium carbonate) soln. std. ....	5 g	104	4927	Hydrogen-3 (water) .....	3 g	*
4254-B	Mixed Radionuclides, gamma-ray soln. std. ....	5 ml	102	4929-C	Iron-55, soln. std. ....	4 g	125
4260	Iron-55 low energy photon source .....	ea	104	4935-C	Krypton-85, beta-particle gas std. ....	10 ml	110
				4940-B	Promethium-147, soln. std. ..	3 g	70
				4941-D	Cobalt-57, soln. std. ....	5 g	106
				4943	Chlorine-36, soln. std. ....	3 g	53
				4947	Hydrogen-3 (tritiated toluene)	4 g	56
				4949	Iodine-129, soln. std. ....	1 g	92
				4950-C	Radium solution std., 10%g (Rd analysis) .....	20 g	92

\* In preparation

SRM	Type	Unit	Price	SRM	Type	Unit	Price
4951-B	Radium solution std., $10^{11}$ g (Rd analysis) .....	100 g	92	U-0002	Uranium oxide—depleted (U-235) .....	1 g	69
4952-B	Radium solution blank .....	20 g	92	U-005	Uranium oxide—depleted (U-235) .....	1 g	59
4953-B	Radium solution std., $10^8$ g (Rd analysis) .....	20 g	92	U-010	Uranium oxide—enriched (U-235) .....	1 g	59
4955	Radium solution std., 0.1 $\mu$ g Ra .....	5 g	73	U-015	Uranium oxide—enriched (U-235) .....	1 g	59
4956	Radium solution std., 0.2 $\mu$ g Ra .....	5 g	73	U-020	Uranium oxide—enriched (U-235) .....	1 g	59
4957	Radium solution std., 0.5 $\mu$ g Ra .....	5 g	73	U-030	Uranium oxide—enriched (U-235) .....	1 g	59
4958	Radium solution std., 1 $\mu$ g Ra	5 g	73	U-050	Uranium oxide—enriched (U-235) .....	1 g	59
4959	Radium solution std., 2 $\mu$ g Ra	5 g	73	U-100	Uranium oxide—enriched (U-235) .....	1 g	60
4960	Radium solution std., 5 $\mu$ g Ra	5 g	73	U-150	Uranium oxide—enriched (U-235) .....	1 g	61
4961	Radium solution std., 10 $\mu$ g Ra .....	5 g	73	U-200	Uranium oxide—enriched (U-235) .....	1 g	62
4962	Radium solution std., 20 $\mu$ g Ra .....	5 g	82	U-350	Uranium oxide—enriched (U-235) .....	1 g	65
4963	Radium solution std., 50 $\mu$ g Ra .....	5 g	73	U-500	Uranium oxide—enriched (U-235) .....	1 g	66
4964-B	Radium solution std., 102 $\mu$ g Ra .....	5 g	73	U-750	Uranium oxide—enriched (U-235) .....	1 g	72
4990-B	Carbon-14, contemporary std., for dating .....	1 lb	37	U-800	Uranium oxide—enriched (U-235) .....	1 g	72
4991-C	Sodium-22, gamma-ray point source .....	ea	89	U-850	Uranium oxide—enriched (U-235) .....	1 g	73
4996-B	Sodium-22, gamma-ray point source .....	ea	89	U-900	Uranium oxide—enriched (U-235) .....	1 g	74
4999-E	Cerium-139 point source ....	ea	114	U-930	Uranium oxide—enriched (U-235) .....	1 g	76
				U-970	Uranium oxide—enriched (U-235) .....	1 g	79

## B. RESEARCH MATERIALS

Research materials (RM's) are homogeneous materials intended primarily to further scientific or technical research on that particular material.

RM	Type	Unit	Price
RM-1C	Ultra-purity aluminum, single crystal cube .....	ea	\$100
RM-1R	Ultra-purity aluminum, polycrystalline rod .....	ea	60
RM-30	Glasses for microanalysis ....	set (10)	150
RM-31	Glass fibers for microanalysis	set (10)	150
RM-45	River sediment, homogeneous	100 g	45
RM-100	SEM Resolution Test Specimen (A1-W) .....	ea	50

## C. SPECIAL REFERENCE MATERIALS

Special Reference Materials (GM's) are produced and characterized by agencies or bodies other than NBS. The NBS role is that of distribution, with no participation by NBS in the production or characterization process.

GM	Type	Unit	Price
GM-1	Hydrogen in steel .....	set	\$96
GM-2	Hydrogen in steel .....	set	96
GM-5	Nickel and Vanadium in Residual Oil .....	500 ml	36
GM-2007	Clay, Attapulgus .....	18 kg	225

## D. CONVERSION PACKAGE

Conversion Package (CP) are computer programs issued to assist manufacturers in dealing with both the metric and U.S. customary systems of measurement.

CP-1	ASCII, 800 .....	ea	504
CP-2	ASCII, 1600 .....	ea	504
CP-3	EBCDIC, 800 .....	ea	504
CP-4	EBCDIC, 1600 .....	ea	504
CP-5	BCD, 556 .....	ea	504
CP-6	BCD, 800 .....	ea	504

**SECTION IIa**  
**STANDARD REFERENCE MATERIALS**  
**NEW - RENEWALS**

These Standard Reference Materials are currently available, but were not listed in the Catalog of Standard Reference Materials, 1975-76 Edition. Descriptions of these SRM's are given in Section IIb.

SRM	Type
4k	Iron, cast
41b	Dextrose (glucose)
76a	Burnt Refractory, 40% Al <sub>2</sub> O <sub>3</sub>
77a	Burnt Refractory, 60% Al <sub>2</sub> O <sub>3</sub>
78a	Burnt Refractory, 70% Al <sub>2</sub> O <sub>3</sub>
122f	Iron, cast
131c	Steel, low-carbon silicon
141c	Acetanilide
143c	Cystine
179	Steel, high silicon
370e	Zinc oxide
375g	Channel black
378b	Oil furnace black
394	Unalloyed copper, Cu I
395	Unalloyed copper, Cu II
396	Unalloyed copper, Cu III
622	Glass, soda lime
623	Glass, borosilicate
730-S1S	Tungsten, thermal conductivity, 3.2mm diam., 50mm long
730-S2S	Tungsten, thermal conductivity, 3.2mm diam., 100mm long
730-S3S	Tungsten, thermal conductivity, 3.2mm diam., 200mm long
730-M1S	Tungsten, thermal conductivity, 6.4mm diam., 50mm long
730-M2S	Tungsten, thermal conductivity, 6.4mm diam., 100mm long
730-M3S	Tungsten, thermal conductivity, 6.4mm diam., 200mm long
730-S1A	Tungsten, thermal conductivity, 6.4mm diam., 50mm long
730-S2A	Tungsten, thermal conductivity, 6.4mm diam., 100mm long
730-S3A	Tungsten, thermal conductivity, 6.4mm diam., 200mm long
730-MA	Tungsten, thermal conductivity, 8.3mm diam., 50mm long
730-LA	Tungsten, thermal conductivity, 10.2mm diam., 50mm long
730-LXA	Tungsten, thermal conductivity, 12.7mm diam., 50mm long
737	Tungsten, thermal expansion
743	Mercury freezing point
799-S1S	Tungsten, electrical conductivity, 3.2mm diam., 50mm long
799-S2S	Tungsten, electrical conductivity, 3.2mm diam., 100mm long
799-S3S	Tungsten, electrical conductivity, 3.2mm diam., 200mm long
799-M1S	Tungsten, electrical conductivity, 6.4mm diam., 50mm long
799-M2S	Tungsten, electrical conductivity, 6.4mm diam., 100mm long
799-M3S	Tungsten, electrical conductivity, 6.4mm diam., 200mm long
799-S1A	Tungsten, electrical conductivity, 6.4mm diam., 50mm long
799-S2A	Tungsten, electrical conductivity, 6.4mm diam., 100mm long
799-S3A	Tungsten, electrical conductivity, 6.4mm diam., 200mm long
928	Lead nitrate
930c	Glass filters for spectrophotometry
949e	Plutonium metal, assay
990	Silicon, assay and isotopic
991	Lead-206, assay and isotopic
993	Uranium-235, spike

1007a	Smoke density std., flaming
1062b	Manganous cyclohexanebutyrate
1071b	Triphenylphosphosphate
1482	Linear Polyethylene 13,600 Mw
1483	Linear Polyethylene 32,100 Mw
1484	Linear Polyethylene 119,600 Mw
1570	Spinach, trace elements, botanical
1573	Tomato leaves, trace elements, botanical
1575	Pine needles, trace elements, botanical
1630	Trace mercury in coal
1634	Trace elements in Fuel Oil
1658	Methane in Air 0.95 ppm
1659	Methane in Air 9.5 ppm
1660	Methane (4 ppm) and Propane (1ppm) in Air
1661	Sulfur Dioxide in Nitrogen 480 ppm
1662	Sulfur Dioxide in Nitrogen 942 ppm
1663	Sulfur Dioxide in Nitrogen 1497 ppm
1664	Sulfur Dioxide in Nitrogen 2521 ppm
1665a	Propane in Air 2.8 ppm
1666a	Propane in Air 9.5 ppm
1667a	Propane in Air 48 ppm
1668a	Propane in Air 95 ppm
1669a	Propane in Air 475 ppm
1673a	Carbon Dioxide in Nitrogen 0.95%
1674a	Carbon Dioxide in Nitrogen 7.2 %
1675a	Carbon Dioxide in Nitrogen 14.2 %
1677a	Carbon Monoxide in Nitrogen 9.74 ppm
1678b	Carbon Monoxide in Nitrogen 47.1 ppm
1679a	Carbon Monoxide in Nitrogen 94.7 ppm
1680a	Carbon Monoxide in Nitrogen 484 ppm
1681a	Carbon Monoxide in Nitrogen 957 ppm
1683a	Nitric Oxide in Nitrogen 50 ppm
1684a	Nitric Oxide in Nitrogen 100 ppm
1685a	Nitric Oxide in Nitrogen 250 ppm
1686a	Nitric Oxide in Nitrogen 500 ppm
1687a	Nitric Oxide in Nitrogen 1000 ppm
1821	Ethanol
1823	Silicone, Refractive index
1901	Centerline Drawings for OCR-B Characters, Size I
1902	Centerline Drawings for OCR-B Characters, Size I
1903	Centerline Drawings for OCR-B Characters, Size I
1904	Centerline Drawings for OCR-B Characters, Size III
2203	Potassium fluoride
2671	Freeze-dried urine certified for flourine
2672	Freeze-dried urine certified for mercury
2675	Beryllium on filter media
2676	Tape, magnetic, secondary standard, cartridge
RM 30	Glasses for Microanalysis
RM 31	Glass Fibers for Microanalysis
RM 45	River sediment, homogeneous

## SECTION IIb

### SRM DESCRIPTIONS BY CATEGORY

The categories listed are in the same order as they appear in the 1975-76 edition of NBS SP 260, Catalog of NBS Standard Reference Materials. The new and renewal SRM's issued since the 1975-76 edition of SP 260 are listed numerically within the appropriate category.

To list new and renewal radioactivity SRM's is impractical because of the half-life of many of these materials. A special brochure that describes these materials is available from the Office of Standard Reference Materials, Room B311, Chemistry Building, Washington, DC 20234, (301) 921-2045. This brochure is supplied with its own price list, which is regularly revised to reflect currently available radioactivity SRM's.

#### Steels

- |          |  |
|----------|--|
| SRM 131c | Steel, low-carbon silicon. This SRM, in chip form, is a renewal of SRM 131b. Price: \$43 per 150-g unit.   |
| SRM 179  | High Silicon Steel. This SRM, in chip form is certified for eleven elements. The nominal values are: C 0.027; Mn 0.094; P 0.006; S 0.026; Si 3.19; Cu 0.056; Ni 0.050; Cr .022; Mo 0.014; Al 0.0028; Sn 0.004. Price: \$43 per 150-g unit. |

#### Cast Irons

- |          |   |
|----------|---|
| SRM 4k   | Cast Iron. This SRM, in chip form, is certified for ten elements. The nominal values are: C 3.2 (graphitic 2.65); Mn 0.82; P 0.149; S 0.043; Si 1.33; Cu 0.24; Ni 0.042; Cr 0.116; V 0.024, and Mo 0.040. Price: \$43 per 150-g unit. |
| SRM 122f | Cast Iron (car wheel). This SRM, in chip form, is a renewal of SRM 122e. Price: \$43 per 150-g unit.  |

#### Nonferrous Alloys

- |         |   |
|---------|---|
| SRM 394 | Unalloyed Copper - Cu I, Cu II, and Cu III. These SRM's, in chip form, is sized between 0.5mm and 1.4mm sieve openings (35-14 mesh). They are intended for use in calibrating optical emission methods of analysis and in the development of new or improved trace analytical methods of analysis. See table for nominal values. Price: \$87 per 50-g unit. |
| SRM 395 |   |
| SRM 396 |   |

Element	394 Cu I	395 Cu II	396 Cu III
Copper	99.908%	99.944%	99.955%
Antimony	4.8 ppm	7.5 ppm	-
Arsenic	2.6	1.6	-
Bismuth	0.35	0.50	0.07 ppm
Iron	147.	96.	143.
Lead	26.5	3.25	0.41
Manganese	3.7	5.3	7.5
Nickel	11.7	5.4	4.2
Silver	50.5	12.2	3.30
Sulfur	15.	13.	9.5
Tin	65.	1.5	0.8
Zinc	375.	11.5	4.7

## Primary, Working and Secondary Standard Chemicals

SRM	41b	Dextrose. This SRM is a renewal of SRM 41a. Price: \$39 per 70-g unit.
SRM	141c	Acetanilide. This SRM is a renewal of SRM 141b. Price: \$39 for a 2-g unit.
SRM	143c	Cystine. This SRM is a renewal of SRM 143b. Price: \$39 for a 2-g unit.

## Clinical Laboratory Standards

SRM	928	Lead Nitrate is certified as an assay standard for lead for use in clinical chemistry laboratories. The lead nitrate is certified to be 100 + 0.03 percent. Price: \$45 per 30-g unit.
SRM	930c	Glass Filters for Spectrophotometry. This SRM is a renewal of SRM 930b. Price: \$492 per set.

## Biological Standards

These SRM's are intended primarily for calibrating instrumentation and evaluating the reliability of analytical methods for the determination of major, minor, and trace elements in agricultural food products and other botanical materials.

SRM	1570	Trace Elements in Spinach. This SRM is certified for K, Ca and P, as well as twelve trace constituents. Price: \$77 per 60-g unit.
SRM	1573	Trace Elements in Tomato Leaves. This SRM is certified for K, Ca, P, and Pb, as well as eleven trace constituents. Price: \$77 per 70-g unit.
SRM	1575	Trace Elements in Pine Needles. This SRM is certified for K, Ca, P, Al, and Hg, as well as twelve trace elements. Price: \$77 per 70-g unit.

## ENVIRONMENTAL STANDARDS (Analyzed Gases)

SRM	1658	Methane in Air. These SRM's are intended for use in the calibration of instruments used for the analysis of methane in ambient air. The nominal concentrations for SRM 1658 and SRM 1659 are 0.95 ppm and 9.5 ppm, respectively. These SRM's are issued in cylinders containing 0.88 m <sup>3</sup> (30 cu ft) at STP. Price: \$283 per cylinder.
SRM	1659	
SRM	1660	Methane (4 ppm) and Propane (1 ppm) in Air. This SRM is intended for use in the calibration of instruments used to differentiate the methane-nonmethane fractions of hydrocarbon in the atmosphere. This SRM is issued in cylinders containing 0.88 m <sup>3</sup> (30 cu ft) at STP. Price: \$283 per cylinder.
SRM	1661	Sulfur Dioxide in Nitrogen (for Stack Gas Analysis)
SRM	1662	These SRM's are intended for use in the calibration of instruments and techniques for the analysis of sulfur dioxide in stack gases. The nominal concentrations for SRM's 1661, 1662, 1663, and 1664 are 480, 942, 1497, and 2521 ppm, respectively. These SRM's are issued in cylinders containing 0.88 m <sup>3</sup> (30 cu ft) at STP. Price: \$356 per cylinder.
SRM	1663	
SRM	1664	

SRM 1665a	Propane in Air 3ppm Renewal of SRM 1665
SRM 1666a	Propane in Air 10ppm Renewal of SRM 1666
SRM 1667a	Propane in Air 50ppm Renewal of SRM 1667
SRM 1668a	Propane in Air 100ppm Renewal of SRM 1668
SRM 1669a	Propane in Air 500ppm Renewal of SRM 1669
	These SRM's are sold in cylinders containing 31 cubic feet at STP for \$282 per cylinder.
SRM 1673a	Carbon Dioxide in Nitrogen 1.0 mol % Renewal of SRM 1673
SRM 1674a	Carbon Dioxide in Nitrogen 7.5 mol % Renewal of SRM 1674
SRM 1675a	Carbon Dioxide in Nitrogen 15.0 mol % Renewal of SRM 1675
	These SRM's are sold in cylinders containing 31 cubic feet at STP for \$282 per cylinder.
SRM 1677a	Carbon Monoxide in Nitrogen 10ppm Renewal of SRM 1677
SRM 1678b	Carbon Monoxide in Nitrogen 50ppm Renewal of SRM 1678a
SRM 1679a	Carbon Monoxide in Nitrogen 100ppm Renewal of SRM 1679
SRM 1680a	Carbon Monoxide in Nitrogen 500ppm Renewal of SRM 1680
SRM 1681a	Carbon Monoxide in Nitrogen 1000ppm Renewal of SRM 1681
	These SRM's are sold in cylinders containing 31 cubic feet at STP for \$305 per cylinder.
SRM 1683a	Nitric Oxide in Nitrogen 50ppm Renewal of SRM 1683
SRM 1684a	Nitric Oxide in Nitrogen 100ppm Renewal of SRM 1684
SRM 1685a	Nitric Oxide in Nitrogen 250ppm Renewal of SRM 1685
SRM 1686a	Nitric Oxide in Nitrogen 500ppm Renewal of SRM 1686
SRM 1687a	Nitric Oxide in Nitrogen 1000ppm Renewal of SRM 1687
	These SRM's are sold in cylinders containing 31 cubic feet at STP for \$327 per cylinder.

#### (Trace Elements in Fossil Fuels)

SRM 1634	Fuel Oil. This SRM is for use in calibrating apparatus and evaluating methods used in the analysis of fuel oil and other materials with similar matrices for trace elements. The following elements are certified: S, Ni, Pb, V, Zn, and Fe.
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#### (Analyzed Solids)

SRM 1630	Trace Mercury in Coal. This SRM is certified for 0.13 ppm mercury. Price: \$53 per 50-g unit.
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## Industrial Hygiene

These SRM's are for industrial hygiene analysis and for monitoring the workplace atmosphere.

- SRM 2671 Freeze-Dried Urine Certified for Fluorine. This SRM consists of two freeze-dried samples of human urine containing low (0.8 mg F-/l) and elevated (7.1 mg F-/l) levels fo fluoride. Price: \$82 per unit.
- SRM 2672 Freeze-Dried Urine Certified for Mercury. SRM 2672 consists of two freeze-dried samples of human urine containing low (0.05 mg Hg/l) and elevated (0.29 mg Hg/l) levels of mercury. Price: \$82 per unit.
- SRM 2675 Beryllium on Filter Media. This SRM consists of three membrane filters on which have been deposited known amounts of beryllium at low, medium and high levels. Price: \$82 per unit.

## Forensic Standard

- SRM 1821 Ethanol. This SRM is intended as a forensic standard for use with the various methods of determining ethanol (ethyl alcohol) in blood or breath. It is certified to be 99.9+ percent ethanol, and is analyzed for water and certain organic compounds. SRM 1821 is issued as a set of 12 ampoules of 10 ml each. Price: \$59 per set.
- SRM 1823 Silicone Liquids for Refractive Index. This SRM is intended as a forensic standard for use with refractometers and microscopes used to identify glass fragments. It is issued as a set of two liquids that are certified for refractive index at 10 wavelengths and 4 temperatures from 20 to 80 °C. Price: \$57 per set.

## Metallo-Organic Compounds

- SRM 1062b Manganous Cyclohexanebutyrate. A renewal of SRM 1062a, this SRM is certified for 13.2 wt% manganese. Price: \$70 per 5-g unit.
- SRM 1071b Triphenylphosphate. A renewal of SRM 1071a, this SRM is certified for 9.48 wt% phosphorus. Price: \$47 per 5-g unit.

## Refractories

- SRM 76a Burnt Refractory, Al<sub>2</sub>O<sub>3</sub>: 76a - 40%; 77a - 60%; 78a - 70%.  
SRM 77a These materials are renewals of SRM's 76, 77, and 78, and are  
SRM 78a certified for SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, TiO<sub>2</sub>, MgO, CaO,  
K<sub>2</sub>O, Na<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub> and LiO<sub>2</sub>. Price \$52 per 75-g unit.

## Nuclear Materials

- SRM 949e Plutonium Metal. This material is a renewal of SRM 949d. Price: \$192 per 0.5-g unit.

SRM 993 Uranium-235 Spike, Assay and Isotopic Solution Standard. This SRM is certified for an assay of  $28.270 \pm 0.051$  micromoles U-235 per gram and an isotopic composition of  $99.8195 \pm 0.0013$  atom percent of U-235. Price: \$138 per ampoule.

#### Isotopic Reference Standards,

SRM 990 Assay-Isotopic Standard For Silicon. This SRM is certified as both an assay standard and an isotopic reference standard for silicon. Issued as a wafer 3 cm in diameter and 0.2 cm thick, the purity is certified to be greater than 99.999 percent. Price: \$92 per wafer.

SRM 991 Lead-206 Spike, Assay and Isotopic Solution Standard. This SRM is certified for an assay of 0.32 micromoles lead-206 per gram and an isotopic composition of 99.98 atom percent lead-206. Price: \$122 per 15-g unit in a quartz break-seal ampoule.

#### Ion Activity Standards

SRM 2203 Potassium Fluoride. This SRM is intended for the calibration of fluoride ion-selective electrodes. Chemical analysis of this material indicates a minimum assay of 99.5 percent KF after drying. Price: \$80 per 125-g unit.

#### Glass Standards

SRM 622 Soda-Lime-Silica Glass (622) and Borosilicate Glass (623). These two SRM's are certified and designed to check test methods, and to calibrate equipment for the determination of the resistance of glass containers to chemical attack. These SRM's are issued in 2.2-kg cullets. Price: \$77 per unit.  
SRM 623

#### Polymer Standards

SRM 1482 Linear Polyethylene (Narrow Molecular Weight Distribution).  
SRM 1483 These SRM's are certified for molecular weight, limiting viscosity number, meltflow rate, and density. The nominal molecular weights for SRM's 1482, 1483, and 1484 are 10,000; 30,000; and 100,000; respectively. Price: \$206 per unit.  
SRM 1484

#### Freezing Point standards

SRM 743 Mercury Freezing Point. This material is certified as a pyrometric standard with a freezing point on the International Practical Temperature Scale (1968) of  $-38.841^{\circ}\text{C}$ . This SRM is issued in argon-filled soft-glass ampoules weighing approximately 680 g (50 ml). Price: \$138 per unit.

## Thermal Conductivity Standards

- SRM 730 Tungsten, Thermal Conductivity. This SRM is certified for thermal conductivity as a function of temperature in the range 4-3000K. It is available in sintered or arc-cast rods of 0.32 cm or 0.64 cm diameter, and 5, 10, or 20 cm lengths. Price: See section 1 for list of prices.

## Thermal Expansion Standards

- SRM 737 Tungsten, Thermal Expansion. This SRM is certified for thermal expansion ( $\Delta L/L$ ) as a function of temperature in the range 80-1800 K. It is part of a series covering the temperature range of 20 to 1900 K, and is available as a rod 6.4 mm in diameter and 51 mm in length. Price: \$81 per unit.

## Resistivity Standards

- SRM 799 Tungsten, Electrical Resistivity. This SRM is certified for electrical resistivity ( $\rho$ ) as a function of temperature in the range 4-3000 K. This material is available in sintered or arc-cast rods of 0.32 cm or 0.64 cm diameter, and 5, 10, or 20 cm lengths. Price: See section 1 for list of prices

## Standard Rubbers

- SRM 386h Styrene Butadiene Rubber. This SRM is a renewal of SRM 386g. Price: \$72 per 34-kg unit.

## Rubber-Compounding Materials

- SRM 370e Zinc oxide. This SRM is a renewal of SRM 370d. Price: \$67 per 8-kg unit.
- SRM 375g Channel Black. This SRM is a renewal of SRM 375f. Price : \$141 per 28-kg unit.
- SRM 378b Oil Furnace Black. This SRM is a renewal of SRM 378a. Price: \$80 per 28-kg unit.

## Reference Magnetic Tapes

- SRM 3216 Secondary Standard Magnetic Tape Cartridge (Computer Amplitude Reference). This SRM is for use in calibrating the output signal amplitude from computer magnetic tape cartridge recording and reproducing systems. It consists of approximately 91.4 m of 6.35 mm wide unrecorded magnetic tape wound on two coplanar hubs. Price: \$167 per unit.

## Optical Character Recognition

SRM 1901-1904 Centerline Drawings for Optical Character Recognition B Characters. These SRM's are intended for standardization of character styles used in OCR applications. Four groups of OCR-B character centerline drawings are available:

SRM 1901	118, Size I, characters	\$560.
SRM 1902	93, Size I, characters	\$449.
SRM 1903	21, Size I, characters	\$124.
SRM 1904	21, Size III, characters	\$124.

## Smoke Density Chamber Standards

SRM 1007a Smoke Density Chamber Standard (Flaming Exposure Condition). This SRM is a renewal of SRM 1007 and consists of three sheets of ABS plastic 31 × 32 cm (12 × 12 in). Price: \$47 per unit.

## Research Materials

RM 30 Glasses for Microanalysis (RM 30) and Glass Fibers for Microanalysis (RM 31). Homogenous vitreous solid containing known, low-concentration additions of several elements were developed for electron probe microanalysis (EMPA) and secondary ion mass spectrometry (SIMS). Each RM contains ten compositions of various oxides: RM 30, rods; RM 31, fibers. Price: \$150 per unit.

RM 45 Homogenous River Sediment, this Research Material should be particularly useful for testing radio-chemical procedures for the assay of radioactivity in sediments and soils. Price: \$45 per 100-g unit.

## SECTION IIIa CERTIFICATES

New or revised Certificates have been issued for the SRM's listed below. SRM purchasers whose Certificates show an earlier date may obtain copies of these Certificates from: Office of Standard Reference Materials, Room B31, Chemistry Building, National Bureau of Standards, Washington, D.C. 20234.

SRM	Type	Date
58a	Ferrosilicon (Si 73%)	1-7-76
94c	Zinc-base die-casting alloy	8-15-73
113a	Zinc concentrate	5-6-74
132b	Steel, tool	8-16-73
154b	Titanium dioxide	5-16-73
184	Bronze, leaded-tin	1-26-73
185e	Potassium hydrogen phthalate, pH	5-21-73
193	Potassium nitrate	11-14-74
195	Ferrosilicon (75% Si, high purity)	1-7-76
200	Potassium dihydrogen phosphate	8-7-74
276	Tungsten carbide	4-25-74
329	Zinc concentrate	5-6-74
350	Benzoic acid, acidimetric	4-15-73
388i	Butyl rubber	8-16-74
391	Acrylonitrile-butadiene rubber	9-15-72
633 to 639	Cement, Portland	6-12-74
640	X-Ray diffraction standard	8-7-74
644 to 646	Titanium alloys	4-16-76
661 to 663	Low allow steels (rods)	1-8-76
709	Glass, extra dense lead	6-5-74
712	Glass, mixed alkali lead silicate	10-19-66
734	Iron, electrolytic, thermal conductivity	4-29-75
735	Stainless steel, thermal conductivity	3-5-75
736	Copper, thermal expansion	8-5-75
740	Zinc, primary freezing point	2-19-70
767	Superconducting fixed point device	6-5-74
797	Electrolytic iron	4-29-75
798	Austenitic stainless steel	4-29-75
911a	Cholesterol, clinical	11-1-74
912	Urea, clinical	11-21-73
913	Uric acid, clinical	11-23-73
914	Creatinine, clinical	11-23-73
915	Calcium carbonate, clinical	11-23-73
917	D-Glucose, clinical	9-20-73
918	Potassium chloride, clinical	11-23-73
919	Sodium chloride, clinical	11-23-73
920	D-Mannitol, clinical	11-23-73
921	Cortisol	12-16-73
933	Clinical laboratory thermometers	10-1-74
934	Clinical laboratory thermometer	10-23-74
945	Plutonium metal, std. matrix	1-29-73
961 to 964	Fission track glasses	6-11-74
988	Strontium-84 spike, isotopic	5-21-73
989	Rhenium, assay and isotopic	2-19-74
1001	X-ray step tablet	3-27-74
1197 to 1201	High temperature alloys	8-17-74
1206-2 to 1208-2	High temperature alloys	1-16-73
1212a	Zirconium metal C	5-6-74
1261 to 1263	Low alloy steels (disks)	1-8-76
1600	Tape, magnetic, cassette	3-27-74

1631	Sulfur in coal	12-6-74
1632	Trace elements in coal	3-7-75
1633	Trace elements in fly ash	3-7-75
1641	Mercury in water	3-5-75

## SECTION IV MATERIALS OUT OF STOCK

The materials listed below have gone out of stock since the latest catalog (1975-76 Edition) was printed. Because funds and facilities are limited, materials that go out of stock are not always renewed; rather, renewals are based on current needs and available funds. If the material you need is not available, please contact the Office of Standard Reference Materials.

SRM	Type	Comments
27e	Ore, iron, Sibley	To be renewed
41a	Dextrose (glucose)	Renewed with 41b
64b	Ferrochromium (high carbon)	To be renewed
122e	Iron, cast (car-wheel)	Renewed with 122f
131b	Steel, low-carbon silicon	Renewed with 131c
141b	Acetanilide	Renewed with 141c
157a	Nickel silver	To be renewed
162a	Monel type (Ni64-Cu31)	To be renewed
343	Steel, stainless, Cr-16 Ni-2 (SAE 481)	To be renewed
370d	Zinc oxide	Renewed with 370e
375f	Channel black	Renewed with 375g
384b	N-tertiary-Butyl-2-benzothiazolesulfenamide	To be renewed
386g	Styrene-butadiene type 1500	Renewed with 386h
431	Tin A	Discontinued
432	Tin B	Discontinued
433	Tin C	Discontinued
435	Tin E	Discontinued
485	Austenite in ferrite	Discontinued
594	Hydrocarbon blends-Blend No. 3	Out of Stock
D 805a	Steel, medium manganese	Discontinued
845	Steel, Cr13-Mo0.9 (Modified AISI 410)	Discontinued
D 845	Steel, Cr13-Mo0.9 (Modified AISI 410)	Discontinued
D 846	Steel, Cr18-Ni9 (Modified AISI 321)	Discontinued
D 847	Steel, Cr24-Ni13 (Modified AISI 309)	Discontinued
930b	Glass filters for spectrophotometry	Renewed with 930c
949d	Plutonium metal	Renewed with 949e
950a	Uranium oxide	To be renewed
1062a	Manganous Cyclohexanebutyrate	Renewed with 1062b
1071a	Triphenylphosphate	Renewed with 1071b
1120	Brass, aluminum C	Discontinued
1141a	Iron, ductile 2	To be replaced
1148	Iron, white	To be replaced
1149	Iron, white	To be replaced
1604a	Oxygen in nitrogen, 1.5 ppm	Out of stock
1607	Oxygen in nitrogen, 211 ppm	Out of stock
1622	Sulfur in residual fuel oil 2.14 wt percent	To be renewed
1631	Sulfur in coal	To be renewed
1642	Mercury in water, 1 ppb	To be renewed
2003	Aluminum on glass, specular spectral reflectance	Out of stock
2005	Gold on glass, specular spectral reflectance	Out of stock
2006	Gold on glass, specular spectral reflectance	Out of Stock
2007	Gold on glass, specular spectral reflectance	Out of Stock
2008	Gold on glass, specular spectral reflectance	Out of stock





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