

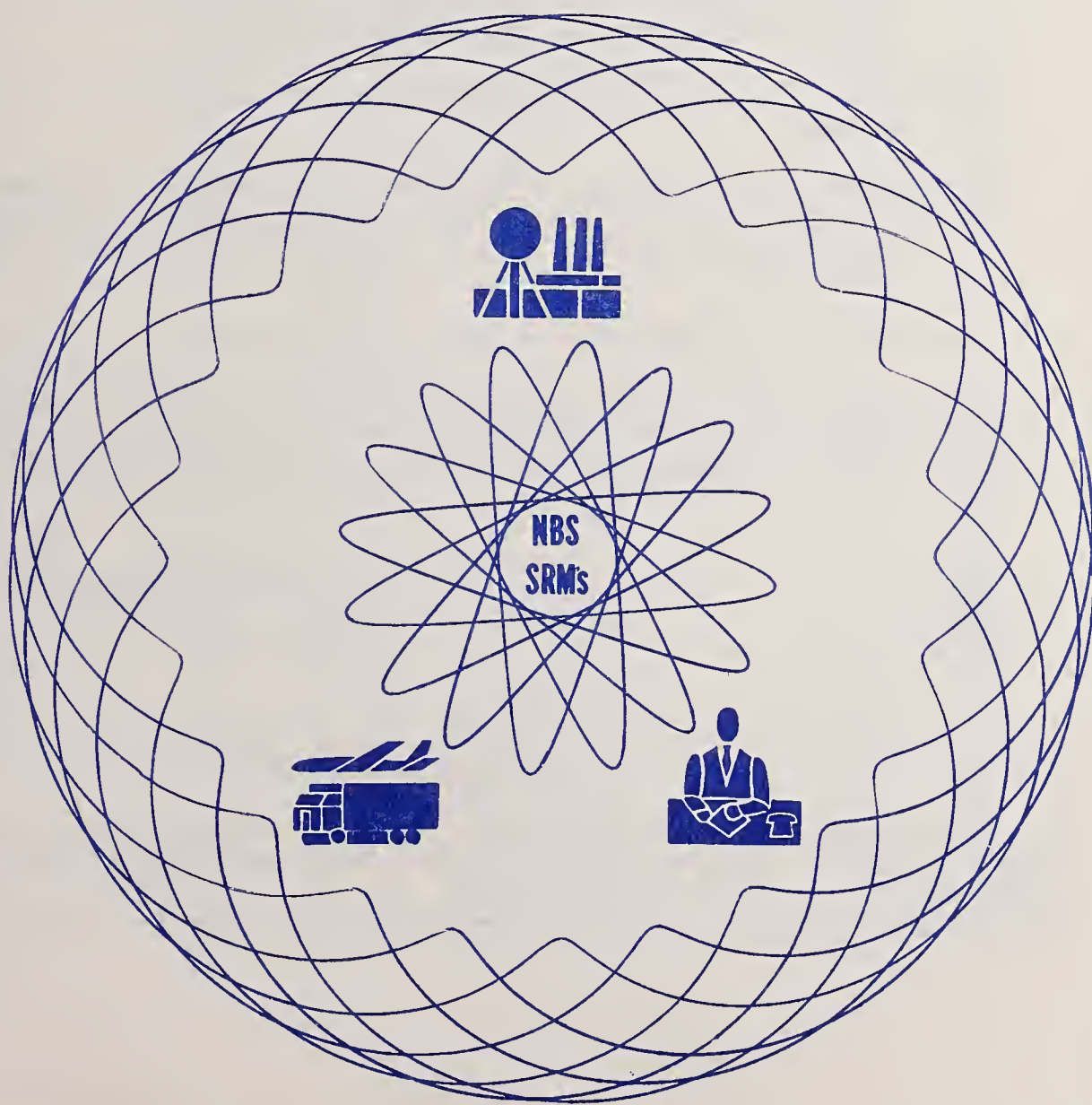
A UNITED STATES
DEPARTMENT OF
COMMERCE
PUBLICATION



NBS SPECIAL PUBLICATION **260**

**SUPPLEMENT
JANUARY, 1972**

Standard Reference Materials Price and Availability List



**U.S.
DEPARTMENT
OF
COMMERCE**

National
Bureau
of
Standards

IMPORTANT NOTICE TO PURCHASERS AND USERS OF NBS STANDARD REFERENCE MATERIALS

The Office of Standard Reference Materials no longer issues the Quarterly Insert Sheets to update the current issue of the SRM Catalog. Instead a Standard Reference Material Availability and Price List is issued semiannually. The format has been changed to improve readability and the List is organized as follows:

Section I — A list of all classes of materials currently available arranged by Standard Reference Material (SRM), Research Material (RM), and General Material (GM) numbers, together with type, unit of issue, and current price.

Section IIa — A list of all classes of materials that have been issued since the Catalog (July 1970) was published, arranged by SRM, RM, and GM numbers together with catalog category.

Section IIb — A short description, arranged by catalog category, of all SRM's issued since the Catalog (July 1970) was published and therefore not contained therein. For ease of reproduction, tables have been condensed and are, in general, not in the same format used in the catalog. (Please note that the values shown are nominal values. The actual values certified are given on the Certificate which accompanies the material.) The unit of issue and price are given after the description of each SRM.

Section IIIa — A list, arranged by SRM numbers, of recently issued certificates (final or revised versions).

Section IIIb — A list, arranged by SRM, RM, and GM numbers, of all items that have gone out of stock since the effective date of the current catalog. A remarks column gives information concerning alternate SRM's, when the renewal SRM is expected, and similar information.

Section IV — Changes in policy, ordering, shipping, and information of a general nature.

Catalogs are printed without prices to eliminate the need for an annual catalog. New issues of Standard Reference Materials Availability and Price List are mailed automatically to all current customers and those who have completed our Technical Point of Contact Questionnaire.



J. Paul Cali, Chief
Office of Standard Reference Materials

January 1972

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, D.C. 20234. Telephone (301) 921-2045.

SECTION I

AVAILABILITY* AND PRICE LIST

A. STANDARD REFERENCE MATERIALS

*SRM's listed in italics are expected to be available before July 1972.

SRM	Type	Unit	Price	SRM	Type	Unit	Price
1b	Limestone, argillaceous	50 g	\$ 32.00	101f	Steel, stainless, Cr18-Ni9 (SAE 304)	100 g	\$ 33.00
3b	Iron, white	110 g	33.00	103a	Chrome refractory	60 g	27.00
4j	Iron, cast	150 g	33.00	104	Magnesite, burned	60 g	27.00
5L	Iron, cast	150 g	40.50	105	Steel, high-sulfur 0.2C carbon only	150 g	25.00
6g	Iron, cast	150 g	36.00	106b	Steel, Cr-Mo-Al (Nitalloy G)	150 g	33.00
7g	Iron, cast (high phosphorus)	150 g	33.00	107b	Iron, cast, Ni-Cr-Mo	150 g	33.00
8j	Steel, bessemer (simulated), 0.1C	150 g	33.00	111b	Steel, Ni-Mo (SAE 4620)	150 g	33.00
10g	Steel, bessemer, 0.2C	150 g	33.00	112	Silicon carbide	83 g	27.00
11h	Steel, B.O.H. 0.2C	150 g	33.00	113a	<i>Zinc Concentrate</i>		
12h	Steel, B.O.H. 0.4C	150 g	33.00	114L	Cement, turbidimetric and fineness std.	set(20)	53.00
13g	Steel, B.O.H. 0.6C	150 g	33.00	115a	Iron, cast, Cu-Ni-Cr	150 g	33.00
14e	Steel, B.O.H. 0.8C	150 g	33.00	120b	<i>Phosphate Rock (Florida)</i>		
15g	Steel, B.O.H. 0.1C	150 g	33.00	121d	Steel, Cr17-Ni11-Ti0.3, AISI 321	150 g	33.00
16e	Steel, B.O.H. 1.1C	150 g	33.00	122e	Iron, cast, (car-wheel)	150 g	33.00
17	Sucrose (cane sugar)	60 g	26.00	123c	Steel, Cr17-Ni11-Nb0.7, AISI 348	150 g	33.00
19g	Steel, A.O.H. 0.2C	150 g	33.00	124d	Bronze (Cu85-Pb5-Sn5-Zn5) ounce metal	150 g	33.00
20g	Steel, AISI 1045	150 g	33.00	125b	Steel, high silicon	150 g	33.00
25c	Ore, manganese	100 g	27.00	126c	<i>INVAR</i>		
27e	Ore, iron, Sibley	100 g	28.00	127b	Solder (Sn40-Pb60)	150 g	33.00
30f	Steel, Cr-V (SAE 6150)	150 g	33.00	131b	Steel, low-carbon silicon	100 g	27.00
32e	Steel, Ni-Cr (SAE 3140)	150 g	33.00	132b	<i>Steel, tool</i>		
33d	Steel, Ni-Mo (SAE 4820)	150 g	33.00	133a	Steel, stainless (Cr13-Mo0.3-S0.3)	150 g	33.00
36b	Steel, Cr2-Mo1	150 g	33.00	134a	Steel, Mo8-W2-Cr4-V1	150 g	33.00
37e	Brass, sheet	150 g	33.00	136c	Potassium dichromate, oxidimetric	60 g	32.00
39i	Benzoic acid, calorimetric	30 g	32.00	138	Ore, tin, (N.E.I. concentrate)	50 g	27.00
40h	Sodium oxalate, oxidimetric	60 g	32.00	139a	Steel, Cr-Ni-Mo (AISI 8640)	150 g	33.00
41a	Dextrose (glucose)	70 g	26.00	140b	Benzoic acid	2 g	27.50
42f	Tin, freezing-point std.	350 g	27.00	141b	Acetanilide	2 g	27.50
44e	Aluminum, freezing-point std.	200 g	27.00	142	Anisic acid	2 g	26.00
45d	Copper, freezing-point std.	450 g	28.00	143b	Cystine	2 g	29.00
49e	Lead, freezing-point std.	600 g	28.00	147	Triphenyl phosphate	2 g	27.50
50c	Steel, W18-Cr4-V1	150 g	33.00	148	Nicotinic acid	2 g	23.50
51b	Steel, electric furnace 1.2C	150 g	33.00	152a	Steel, B.O.H. 0.5C, 0.03 Sn	150 g	33.00
53e	Bearing metal, lead-base	150 g	33.00	153a	Steel, Co8-Mo9-W2-Cr4-V2	150 g	33.00
54d	Bearing metal, tin-base	170 g	33.00	154b	<i>Titanium Dioxide</i>		
55e	Iron, ingot	150 g	33.00	155	Steel, CrO.5-W0.5	150 g	33.00
57	Silicon, refined	60 g	29.00	157a	Nickel silver (Cu58-Ni12-Zn29)	135 g	33.00
58a	<i>Ferrosilicon (Si 75%)</i>			158a	Bronze, silicon	150 g	33.00
59a	<i>Ferrosilicon (Si 50%)</i>	50 g	40.00	160b	Steel, stainless, Cr19-Ni14-Mo3 (SAE 316)	150 g	33.00
64b	Ferrocromium (high carbon)	100 g	30.50	162a	Monel-type (Ni64-Cu3l)	150 g	33.00
65d	Steel, basic electric, 0.3C	150 g	33.00	163	Steel, 0.9C, 0.9Mn, 1.0Cr	100 g	40.00
68b	<i>Ferromanganese, high carbon</i>			166c	Steel, stainless, low carbon	100 g	25.00
69a	Bauxite	50 g	27.00	168	Cobalt-base alloy, Co41-Mo4-Nb3-Ta1-W4	150 g	33.00
70a	Feldspar, potash	40 g	32.00	171	Magnesium-base alloy	100 g	33.00
71	Calcium molybdate	60 g	29.00	173a	Titanium alloy 6Al-4V	100 g	33.00
72f	Steel, Cr-Mo (SAE X4130)	150 g	33.00	174	Titanium alloy 4Al-4Mn	100 g	33.00
73c	Steel, stainless Cr13 (SAE 420)	150 g	33.00	176	Titanium alloy 5Al-2.5Sn	100 g	33.00
76a	<i>Burned Refractory (Al₂O₃ 40%)</i>			178	Steel, basic oxygen 0.4C	150 g	33.00
77a	<i>Burned Refractory (Al₂O₃ 60%)</i>			180	Fluorspar, high-grade	120 g	40.00
78a	<i>Burned Refractory (Al₂O₃ 70%)</i>			181	Ore, lithium (Spodumene)	45 g	27.00
79a	Fluorspar	120 g	40.00	182	Ore, lithium (Petalite)	45 g	27.00
82b	Iron, nickel-chromium cast	150 g	33.00	183	Ore, lithium (Lepidolite)	45 g	27.00
83c	Arsenic trioxide, oxidimetric	75 g	32.00	184	Bronze, leaded-tin	150 g	33.00
84h	Potassium phthalate, acid, acidimetric	60 g	26.00	185d	Acid potassium phthalate, pH	60 g	35.00
85b	Aluminum alloy, wrought	75 g	33.00	1861c	Potassium dihydrogen phosphate, pH	30 g	35.00
86e	Aluminum alloy, casting	75 g	33.00	18611c	Disodium hydrogen phosphate, pH	30 g	30.00
87a	Aluminum-silicon alloy	75 g	33.00	187b	Borax	30 g	30.00
88a	Limestone, dolomitic	50 g	32.00	188	Potassium hydrogen tartrate, pH	60 g	30.00
89	Glass, lead-barium	45 g	27.00	189	Potassium tetroxalate, pH	65 g	30.00
90	Ferrophosphorus	75 g	29.00	191	Sodium bicarbonate, pH	30 g	33.00
91	Glass, opal	45 g	27.00	192	Sodium carbonate, pH	30 g	33.00
92	Glass, low boron	45 g	27.00	193	<i>Potassium Nitrate, Fertilizer</i>		
93	Glass, high boron	45 g	27.00	194	<i>Ammonium dihydrogen phosphate, Fertilizer</i>		
94b	Zinc-base die-casting alloy	150 g	33.00	195	<i>Ferrosilicon</i>		
97a	Clay, flint	60 g	82.00	196	Ferrocromium (low carbon)	100 g	45.00
98a	Clay, plastic	60 g	82.00	198	Silica refractory (0.2% Al ₂ O ₃)	45 g	27.00
99a	Feldspar, soda	40 g	32.00				
100b	Steel, manganese (SAE T1340)	150 g	33.00				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
199	Silica refractory (0.5% Al ₂ O ₃)	45 g	\$ 27.00	381	Calcium silicate	4 kg	\$ 25.25
217b-5	2,2,4-Trimethylpentane	5 ml	40.00	382a	Gas furnace black (Set of 4)	32 kg	52.00
217b-8S	2,2,4-Trimethylpentane	8 ml	65.00	383	Mercaptobenzothiazole (Set of 4)	3.2 kg	33.00
217b-25	2,2,4-Trimethylpentane	25 ml	180.00	384	N-tertiary-Butyl-2-benzo-		
217b-50	2,2,4-Trimethylpentane	50 ml	330.00		thiazolesulfenamide (Set of 4)	3.2 kg	37.00
300	Toluidine red toner	40 g	26.00	385b	Natural rubber	31.4 kg	105.00
301	Yellow ochre	45 g	26.00	386g	Styrene-butadiene type 1500	34 kg	67.00
302	Raw sienna	45 g	26.00	388e	Butyl rubber	37 kg	105.00
303	Burnt sienna	50 g	26.00	389	Styrene-butadiene, type 1503	34 kg	54.00
304	Raw umber	45 g	26.00	391	Acrylonitrile-butadiene rubber	25 kg	105.00
305	Burnt umber	50 g	26.00	404a	Steel, basic electric	ea	30.00
306	Venetian red	60 g	26.00	405a	Steel, medium manganese	ea	30.00
307	Metallic brown	60 g	26.00	407a	Steel, chromium-vanadium	ea	30.00
308	Indian red	50 g	26.00	408a	Steel, chromium-nickel	ea	30.00
309	Mineral red	65 g	26.00	409b	Steel, nickel	ea	30.00
310	Bright red oxide	50 g	26.00	413	Steel, A.O.H. 0.4C	ea	30.00
311	Carbon black (high color)	10 g	26.00	414	Steel, Cr-Mo (SAE 4140)	ea	30.00
312	Carbon black (all purpose)	20 g	26.00	417a	Steel, B.O.H. 0.4C	ea	30.00
313	Black iron oxide	42 g	26.00	418	Steel, Cr-Mo (SAE X4130)	ea	30.00
314	Yellow iron oxide, light lemon	20 g	26.00	420a	Iron, ingot	ea	30.00
315	Yellow iron oxide, lemon	20 g	26.00	427	Steel, Cr-Mo (boron only) (SAE 4150)	ea	30.00
316	Yellow iron oxide, orange	25 g	26.00	431	Tin A	ea	35.00
317	Yellow iron oxide, dark orange	40 g	26.00	432	Tin B	ea	35.00
318	Lampblack	15 g	26.00	433	Tin C	ea	35.00
319	Prinrose chrome yellow	65 g	26.00	434	Tin D	ea	35.00
320	Lemon chrome yellow	60 g	26.00	435	Tin E	ea	35.00
321	Medium chrome yellow	65 g	26.00	436	Steel, special Cr6-Mo3-W10	ea	35.00
322	Light chrome orange	100 g	26.00	437	Steel, special Cr8-Mo2-W3-Co3	ea	35.00
323	Dark chrome orange	100 g	26.00	438	Steel, Mo high speed (AISI-SAE-M30)	ea	35.00
324	Ultramarine blue	37 g	26.00	439	Steel, Mo high speed (AISI-SAE-M36)	ea	35.00
325	Iron blue	25 g	26.00	440	Steel, special W high speed		
326	Light chrome green	60 g	26.00		Cr2-W13-Co12	ea	35.00
327	Medium chrome green	50 g	26.00	441	Steel, W high speed (AISI-SAE-T1)	ea	35.00
328	Dark chrome green	45 g	26.00	442	Steel, stainless, Cr16-Ni10	ea	35.00
330	Copper, millheads			443	Steel, stainless, Cr18.5-Ni9.5	ea	35.00
331	Copper, milltails			444	Steel, stainless, Cr20.5-Ni10	ea	35.00
332	Copper, concentrate			445	Steel, stainless, Cr13-Mo0.9		
333	Molybdenum, concentrate				(Modified AISI 410)	ea	35.00
335	Steel, B.O.H. 0.1C (carbon only)	300 g	27.00	446	Steel, stainless, Cr18-Ni9		
337	Steel, B.O.H. 1.1C (carbon only)	300 g	27.00		(Modified AISI 321)	ea	35.00
339	Steel, stainless, Cr17-Ni9-0.2Se			447	Steel, stainless, Cr24-Ni13		
	(SAE 303Se)	150 g	40.00		(Modified AISI 309)	ea	35.00
340	Ferroniobium	100 g	45.00	448	Steel, stainless, Cr9-Mo0.3		
341	Iron, ductile	150 g	33.00		(Modified AISI 403)	ea	35.00
342	Iron, nodular	150 g	33.00	449	Steel, stainless, Cr5.5-Ni6.5	ea	35.00
342a	Iron, nodular	150 g	35.00	450	Steel, stainless, Cr3-Ni25	ea	35.00
343	Steel, stainless, Cr16-Ni2 (SAE 431)	150 g	33.00	461	Steel, low-alloy A	ea	35.00
344	Steel, stainless, Cr15-Ni7-Mo2-Al1	150 g	33.00	462	Steel, low-alloy B	ea	35.00
345	Steel, stainless, Cr16-Ni4-Cu3	150 g	33.00	463	Steel, low-alloy C	ea	35.00
346	Steel, valve (Cr22-Ni4-Mn9)	150 g	40.00	464	Steel, low-alloy D	ea	35.00
348	Steel, Ni26-Cr15 (A286)	150 g	33.00	465	Iron, ingot E	ea	35.00
349	Nickel-base alloy (Ni57-Co14-Cr20)	150 g	33.00	466	Iron, ingot F	ea	35.00
350	Benzoic acid, acidimetric	30 g	26.00	467	Steel, low-alloy G	ea	35.00
352	Titanium, unalloyed, for hydrogen	20 g	35.00	468	Steel, low-alloy H	ea	35.00
353	Titanium, unalloyed, for hydrogen	20 g	35.00	480	Microprobe, Tungsten - 20% Molybdenum alloy	set	125.00
354	Titanium, unalloyed, for hydrogen	20 g	35.00	481	Microprobe, Gold-silver wires	set	130.00
355	Titanium, unalloyed, for oxygen	20 g	40.00	482	Microprobe, Gold-copper wires	set	130.00
356	Titanium alloy, 6Al-4V	20 g	40.00	483	Microprobe, Iron-3% silicon	ea	50.00
360a	Zircaloy-2	100 g	55.00	485	Austenite in ferrite	ea	85.00
361	Steel, AISI 4340, chip	150 g	33.00	493	Iron carbide in ferrite	ea	85.00
362	Steel, AISI 94B17 (modified), chip	150 g	33.00	592	Hydrocarbon blends - Blend No. 1	set	32.00
363	Steel, Cr-V (modified), chip	150 g	33.00	593	Hydrocarbon blends - Blend No. 2	set	32.00
364	Steel, high carbon (modified), chip	150 g	33.00	594	Hydrocarbon blends - Blend No. 3	set	32.00
365	Iron, electrolytic, chip	150 g	33.00	595	Hydrocarbon blends - Blend No. 4	set	32.00
366	Set I ea of 361, 362, 363, 364 and 365	set	100.00	596	Hydrocarbon blends - Blend No. 5	set	32.00
369	Ferromanganese, low carbon			597	Hydrocarbon blends - Blend No. 6	set	32.00
370d	Zinc oxide (Set of 4)	8 kg	33.80	598	Hydrocarbon blends - Blend No. 7	set	32.00
371f	Sulfur (Set of 4)	6 kg	38.00	599	Hydrocarbon blends - Blend No. 8	set	32.00
372g	Stearic acid (Set of 4)	3.2 kg	31.00	610	Glass, trace elements 500 ppm, 3 mm	ea	50.00
373f	Benzothiazyl disulfide (Set of 4)	2 kg	40.00	611	Glass, trace elements 500 ppm, 1 mm	ea	50.00
374c	Tetramethylthiuram disulfide	2 kg	40.00	612	Glass, trace elements 50 ppm, 3 mm	ea	50.00
375f	Channel black (Set of 4)	28 kg	67.00	613	Glass, trace elements 50 ppm, 1 mm	ea	50.00
376a	Light magnesia	450 g	25.25	614	Glass, trace elements 1 ppm, 3 mm	ea	50.00
377	Phenyl-beta-naphthylamine	600 g	26.75	615	Glass, trace elements 1 ppm, 1 mm	ea	50.00
378a	Oil furnace black (Set of 4)	28 kg	36.00	616	Glass, trace elements .02 ppm, 3 mm	ea	50.00
379	Conducting black	5.5 kg	26.25	617	Glass, trace elements .02 ppm, 1 mm	ea	50.00
380	Calcium carbonate	6 kg	25.25				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
618	Glass, trace elements, 3 mm	set	\$ 150.00	735L1	Stainless steel, thermal conductivity, rod 3.5 cm dia., 5 cm long	ea	\$ 125.00
619	Glass, trace elements, 1 mm	set	150.00	735L2	Stainless steel, thermal conductivity, rod 3.5 cm dia., 10 cm long	ea	175.00
620	Glass plate, soda lime	pkg(3)	45.00	736L1	Copper, thermal expansion, 2 in.	ea	71.00
621	Glass container, soda lime			736L2	Copper, thermal expansion, 4 in.	ea	119.00
622	Glass, optical quality			736L3	Copper, thermal expansion, 6 in.	ea	167.00
625	Zinc-base A	ea	50.00	737	Tungsten, thermal expansion		
626	Zinc-base B	ea	50.00	739L1	Fused-silica, thermal expansion, 2 in.	ea	71.00
627	Zinc-base C	ea	50.00	739L2	Fused-silica, thermal expansion, 4 in.	ea	119.00
628	Zinc-base D	ea	50.00	739L3	Fused-silica, thermal expansion, 6 in.	ea	167.00
629	Zinc-base E	ea	50.00	740	Zinc, primary freezing-point std.	350 g	70.00
630	Zinc-base F	ea	50.00	741	Tin, primary freezing-point std.		
631	Zinc spelter (Modified)	ea	50.00	742	Alumina, high temperature melting point	10 g	62.50
641	Titanium alloy 8Mn(A)	ea	50.00	745	Gold, vapor pressure std.	ea	85.00
642	Titanium alloy 8Mn(B)	ea	50.00	746	Cadmium, vapor pressure std.	ea	65.00
643	Titanium alloy 8Mn(C)	ea	50.00	747	Platinum, vapor pressure std.		
644	Titanium alloy 2Cr-2Fe-2Mo(A)	ea	50.00	748	Silver, vapor pressure std.	ea	75.00
645	Titanium alloy 2Cr-2Fe-2Mo(B)	ea	50.00	755	Quartz, SiO ₂	2 g	35.00
646	Titanium alloy 2Cr-2Fe-2Mo(C)	ea	50.00	756	Potassium nitrate	5 g	35.00
654a	Titanium alloy, 6Al-4V	ea	35.00	758	DTA temperature std. (125-435 °C)	set(5)	45.00
661	Steel, AISI 4340, rod	ea	25.00	759	DTA temperature std. (295-675 °C)	set(5)	45.00
662	Steel, AISI 94B17 (modified), rod	ea	25.00	760	DTA temperature std. (570-940 °C)	set(5)	45.00
663	Steel, Cr-V (modified), rod	ea	25.00	763	Palladium, magnetic susceptibility		
664	Steel, high carbon (modified), rod	ea	25.00	764	Aluminum, magnetic susceptibility		
665	Iron, electrolytic, rod	ea	25.00	767	Superconducting fixed point		
666	Set of one each (661 & 665)	set	40.00	803a	Steel, A.O.H. 0.6C	ea	30.00
667	Set of one each (662 & 663)	set	40.00	D803a	Steel, A.O.H. 0.6C	ea	35.00
668	Set of one each (661, 662, 663, 664 and 665)	set	75.00	804a	Steel, basic electric	ea	30.00
671	Nickel oxide 1	25 g	35.00	805a	Steel, medium manganese	ea	30.00
672	Nickel oxide 2	25 g	35.00	D805a	Steel, medium manganese	ea	35.00
673	Nickel oxide 3	25 g	35.00	807a	Steel, chromium-vanadium	ea	30.00
680 L-1	Platinum, high-purity	ea	40.00	D807a	Steel, chromium-vanadium	ea	35.00
680 L-2	Platinum, high-purity	ea	190.00	808a	Steel, chromium-nickel	ea	30.00
681 L-1	Platinum, doped	ea	40.00	809b	Steel, nickel	ea	30.00
681 L-2	Platinum, doped	ea	190.00	D809b	Steel, nickel	ea	35.00
682	Zinc, high-purity	ea	90.00	810a	Steel, Cr2-Mo1	ea	30.00
683	Zinc metal	ea	55.00	817a	Steel, B.O.H. 0.4C	ea	30.00
685-R	Gold, high-purity (rod)	ea	55.00	820a	Iron, ingot	ea	30.00
685-W	Gold, high-purity (wire)	ea	55.00	D820a	Iron, ingot	ea	35.00
700c	Paper, light-sensitive	pkg	40.00	821	Steel, Cr-W, 0.9C	ea	30.00
701c	Paper, standard faded strips	bkt	155.00	827	Steel, Cr-Mo (boron only) (SAE 4150)	ea	30.00
702	Plastic chips, light-sensitive	pkg	40.00	D836	Steel, special (Cr6-Mo3-W10)	ea	50.00
703	Plastic chips, light-sensitive	pkg	40.00	837	Steel, special (Cr8-Mo2-W3-Co3)	ea	42.50
704a	Paper, internal tearing resistance	set(4)	56.20	D837	Steel, special (Cr8-Mo2-W3-Co3)	ea	50.00
705	Polystyrene, narrow molecular weight	2 g	33.00	838	Steel, Mo high speed (AISI-SAE-M30)	ea	42.50
706	Polystyrene, broad molecular weight	18 g	33.00	D838	Steel, Mo high speed (AISI-SAE-M30)	ea	50.00
707	Water vapor permeance			839	Steel, Mo high speed (AISI-SAE-M36)	ea	42.50
710	Glass, soda-lime silica	2 lb	52.00	D839	Steel, Mo high speed (AISI-SAE-M36)	ea	50.00
711	Glass, lead-silica	3 lb	75.00	840	Steel, special W high speed (Cr2-W13-Co12)	ea	42.50
712	Glass, mixed alkali lead silicate	0.5 lb	38.00	D840	Steel, special W high speed (Cr2-W13-Co12)	ea	50.00
713	Glass, dense barium crown	0.5 lb	38.00	841	Steel, W high speed (AISI-SAE-T1)	ea	42.50
714	Glass, alkaline earth alumina silicate	0.5 lb	38.00	D841	Steel, W high speed (AISI-SAE-T1)	ea	50.00
715	Glass, alkali-free aluminosilicate	200 g	38.00	845	Steel, Cr13-Mo0.9 (Modified AISI 410)	ea	42.50
716	Glass, neutral (borosilicate)	250 g	38.00	D845	Steel, Cr13-Mo0.9 (Modified AISI 410)	ea	50.00
717	Glass, standard, borosilicate	1 lb	71.00	846	Steel, Cr18-Ni9 (Modified AISI 321)	ea	42.50
718	Polycrystalline alumina, Elasticity			D846	Steel, Cr18-Ni9 (Modified AISI 321)	ea	50.00
720	Sapphire, synthetic (Al ₂ O ₃)	15 g	56.00	D847	Steel, Cr24-Ni13 (Modified AISI 309)	ea	50.00
723	Tris(hydroxymethyl)aminomethane, basimetric	50 g	50.75	D848	Steel, Cr9-Mo0.3 (Modified AISI 403)	ea	50.00
724	Tris(hydroxymethyl)aminomethane, calorimetric	50 g	40.00	849	Steel, Cr5.5-Ni6.5	ea	42.50
725	Mossbauer Differential Chemical Shift	ea	155.00	D849	Steel, Cr5.5-Ni6.5	ea	50.00
726	Selenium	1 lb	45.00	850	Steel, Cr3-Ni25	ea	42.50
728	Zinc	450 g	43.00	D850	Steel, Cr3-Ni25	ea	50.00
731	Borosilicate glass, thermal expansion			911	Cholesterol, clinical	0.5 g	30.00
733	Thermocouple wire, Silver - 28% Gold, 32 AWG (0.2019 mm dia.) and 3 meters long	ea	85.00	912	Urea, clinical	25 g	36.00
734S	Iron, electrolytic, thermal conductivity, rod 6.4 mm dia., 305 mm long	ea	75.00	913	Uric acid, clinical	10 g	30.00
734L1	Iron, electrolytic, thermal conductivity, rod, 31.8 mm dia., 152 mm long	ea	85.00	914	Creatinine, clinical	10 g	36.00
734L2	Iron, electrolytic, thermal conductivity, rod 31.8 mm dia., 305 mm long	ea	150.00	915	Calcium carbonate, clinical	20 g	30.00
735S	Stainless steel, thermal conductivity, rod 0.65 cm dia., 30 cm long	ea	75.00	916	Bilirubin, clinical	100 mg	92.00
735M1	Stainless steel, thermal conductivity, rod 1.25 cm dia., 15 cm long	ea	100.00	917	D-Glucose, clinical	25 g	43.00
735M2	Stainless steel, thermal conductivity, rod 1.25 cm dia., 30 cm long	ea	150.00	918	Potassium chloride, clinical	30 g	40.00
				919	Sodium chloride, clinical		
				920	D-Mannitol, clinical	50 g	57.00
				922	Tris(hydroxymethyl)aminomethane clinical	25 g	40.00

SRM	Type	Unit	Price	SRM	Type	Unit	Price
923	Tris(hydroxymethyl)aminomethane hydrochloride, clinical	35 g	\$ 40.00	1069b	Sodium cyclohexanebutyrate	5 g	\$ 31.00
924	Lithium carbonate, clinical	30 g	50.00	1070a	Strontium cyclohexanebutyrate	5 g	31.00
925	VMA, clinical			1071a	Triphenyl phosphate	5 g	31.00
930	Glass filters for spectrophotometry, clinical	set(3)	300.00	1073b	Zinc cyclohexanebutyrate	5 g	31.00
931	Liquid filters for spectrophotometry, clinical	set(12)	75.00	1074a	Calcium 2-ethylhexanoate	5 g	31.00
944	Plutonium sulfate tetrahydrate assay	0.5 g	76.00	1075a	Aluminum 2-ethylhexanoate	5 g	31.00
945	Plutonium metal, std matrix	5 g	500.00	1076	Potassium erucate	5 g	31.00
946	Plutonium, 12% isotopic			1077a	Silver 2-ethylhexanoate	5 g	31.00
947	Plutonium, 18% isotopic			1078a	Tris(1-phenyl-1,3-butanediono) chromium (III)	5 g	31.00
948	Plutonium sulfate hydrate	0.25 g	66.50	1079b	Tris(1-phenyl-1,3-butanediono) iron (III)	5 g	31.00
949c	Plutonium metal assay	0.5 g	123.00	1080	Bis(1-phenyl-1,3-butanediono) copper (II)	5 g	31.00
950a	Uranium oxide (U ₃ O ₈)	25 g	28.25	1089	Set: 1 ea of 1095, 1096, 1097, 1098, and 1099		
951	Boric acid	100 g	55.00	1090	Iron, ingot	ea	55.00
952	Boric acid, 95% enriched ¹⁰ B	0.25 g	40.00	1091	Steel, stainless (AISI 431)	ea	55.00
953	Neutron density monitor wire, 1 meter long	ea	39.00	1092	Steel, vacuum-melted	ea	55.00
953-L1	Neutron density monitor wire, 5 meters long	ea	96.00	1093	Steel, valve	ea	55.00
953-L2	Neutron density monitor wire, 10 meters long	ea	167.00	1094	Steel, maraging	ea	55.00
953-L3	Neutron density monitor wire, 25 meters long	ea	381.00	1095	Steel, AISI 4340, rod	ea	33.00
960	Uranium metal, assay			1096	Steel, AISI 94B17 (modified), rod	ea	33.00
975	Sodium chloride - isotopic	0.25 g	40.00	1097	Steel, Cr-V (modified), rod	ea	33.00
976	Copper metal - isotopic	0.25 g	40.00	1098	Steel, high-carbon (modified), rod		
977	Sodium bromide - isotopic	0.25 g	40.00	1099	Iron, electrolytic, rod	ea	33.00
978	Silver nitrate - isotopic	0.25 g	40.00	1101	Brass, cartridge B	ea	65.00
979	Chromium nitrate - isotopic	0.25 g	40.00	C1101	Brass, cartridge B	ea	65.00
980	Magnesium metal - isotopic	0.25 g	40.00	1102	Brass, cartridge C	ea	65.00
981-3	Lead - isotopic	set	105.00	C1102	Brass, cartridge C	ea	65.00
984	Rubidium chloride, isotopic	1 g	43.00	1103	Brass, free-cutting A	ea	65.00
987	Strontium carbonate	1 g	40.00	C1103	Brass, free-cutting A	ea	65.00
999	Potassium chloride, primary			1104	Brass, free-cutting B	ea	65.00
1000	Enameled iron plaques	set(3)	25.00	C1104	Brass, free-cutting B	ea	65.00
1002b	Hardboard sheet, 4 specimens	set	35.00	1105	Brass, free-cutting C	ea	65.00
1003	Glass spheres (5-30 µm)	40 g	32.50	C1105	Brass, free-cutting C	ea	65.00
1004	Glass beads			1106	Brass, naval A	ea	65.00
1006	Smoke density std., non-flaming	pkg(3)	32.00	C1106	Brass, naval A	ea	65.00
1007	Smoke density std., flaming	pkg(3)	30.00	1107	Brass, naval B	ea	65.00
1008	Photographic step tablet, 0-4			C1107	Brass, naval B	ea	65.00
1009	Photographic step tablet 0-3	set	54.00	1108	Brass, naval C	ea	65.00
1010a	Microcopy test chart	set	10.00	C1108	Brass, naval C	ea	65.00
1011	Cement, Portland	set	27.50	1109	Brass, red A	ea	65.00
1013	Cement, Portland	set	27.50	C1109	Brass, red A	ea	65.00
1014	Cement, Portland	set	27.50	1110	Brass, red B	ea	65.00
1015	Cement, Portland	set	27.50	C1110	Brass, red B	ea	65.00
1016	Cement, Portland	set	27.50	1111	Brass, red C	ea	65.00
1017a	Glass beads (sieve nos. 50-140)	84 g	40.00	C1111	Brass, red C	ea	65.00
1019	Glass spheres (sieves No.8-18)	100 g	30.50	1112	Gilding metal A	ea	65.00
1020	Zinc sulfide phosphor	14 g	23.50	C1112	Gilding metal A	ea	65.00
1021	Zinc silicate phosphor	28 g	23.50	1113	Gilding metal B	ea	65.00
1022	Zinc sulfide phosphor	14 g	23.50	C1113	Gilding metal B	ea	65.00
1023	Zinc-cadmium sulfide phosphor (Ag activator)	14 g	23.50	1114	Gilding metal C	ea	65.00
1024	Zinc-cadmium sulfide phosphor (Cu activator)	14 g	23.50	C1114	Gilding metal C	ea	65.00
1025	Zinc phosphate phosphor	28 g	23.50	1115	Bronze, commercial A	ea	65.00
1026	Calcium tungstate phosphor	28 g	23.50	C1115	Bronze, commercial A	ea	65.00
1027	Magnesium tungstate phosphor	28 g	23.50	1116	Bronze, commercial B	ea	65.00
1028	Zinc silicate phosphor	28 g	23.50	C1116	Bronze, commercial B	ea	65.00
1029	Calcium silicate phosphor	14 g	23.50	1117	Bronze, commercial C	ea	65.00
1030	Magnesium arsenate phosphor	28 g	23.50	C1117	Bronze, commercial C	ea	65.00
1031	Calcium halophosphate phosphor	28 g	23.50	1118	Brass, aluminum A	ea	65.00
1032	Barium silicate phosphor	28 g	23.50	C1118	Brass, aluminum A	ea	65.00
1033	Calcium phosphate phosphor	28 g	23.50	1119	Brass, aluminum B	ea	65.00
1051b	Barium cyclohexanebutyrate	5 g	31.00	C1119	Brass, aluminum B	ea	65.00
1052b	Bis(1-phenyl-1,3-butanediono) oxovanadium (IV)	5 g	31.00	1120	Brass, aluminum C	ea	65.00
1053a	Cadmium cyclohexanebutyrate	5 g	31.00	C1120	Brass, aluminum C	ea	65.00
1055b	Cobalt cyclohexanebutyrate	5 g	31.00	1121	Beryllium copper CABRA alloy 165-170	ea	65.00
1057b	Dibutyltin bis(2-ethylhexanoate)	5 g	31.00	C1121	Beryllium copper CABRA alloy 165-170	ea	65.00
1059b	Lead cyclohexanebutyrate	5 g	31.00	1122	Beryllium copper CABRA alloy 25-172	ea	65.00
1060a	Lithium cyclohexanebutyrate	5 g	31.00	C1122	Beryllium copper CABRA alloy 25-172	ea	65.00
1061c	Magnesium cyclohexanebutyrate	5 g	31.00	1123	Beryllium copper CABRA alloy 10-175	ea	65.00
1062a	Manganous cyclohexanebutyrate	5 g	31.00	C1123	Beryllium copper CABRA alloy 10-175	ea	65.00
1063a	Methyl borate	5 g	31.00	1131	Solder (Sn40-Pb60)	ea	50.00
1064	Mercuric cyclohexanebutyrate	5 g	31.00	1132	Bearing metal, lead-base	ea	50.00
1065b	Nickel cyclohexanebutyrate	5 g	31.00	1134	Steel, high silicon	ea	50.00
1066a	Octaphenylcyclotetrasiloxane	5 g	31.00	1135	Steel, high-silicon	ea	50.00
				1138	Steel, cast 1	ea	65.00
				1139	Steel, cast 2	ea	65.00

SRM	Type	Unit	Price	SRM	Type	Unit	Price
1140	Iron, ductile 1	ea	\$ 65.00	1363	Set of one each 1313, 1314, 1315, and 1316	set(4)	\$ 71.00
1141	Iron, ductile 2	ea	65.00	1364	Set of one each 1317, 1318, 1319, and 1320	set(4)	71.00
1142	Iron, ductile 3	ea	65.00	1365	Set of one each 1331, 1332, 1333, and 1334	set(4)	71.00
1143	Iron, blast furnace 1	ea	65.00	1366	Set of one each 1335, 1336, 1337, and 1338	set(4)	71.00
1144	Iron, blast furnace 2	ea	65.00	1367	Set of one each 1341, 1342, 1343, and 1344	set(4)	71.00
1147	Iron, white cast	ea	65.00	1371	Gold coating (Fe-Ni-Co) 30 microinches	ea	66.00
1148	Iron, white	ea	65.00	1372	Gold coating (Fe-Ni-Co) 60 microinches	ea	66.00
1149	Iron, white	ea	65.00	1373	Gold coating (Fe-Ni-Co) 120 microinches	ea	66.00
1152	Steel, stainless B (Cr18-Ni10)	ea	65.00	1374	Gold coating (Fe-Ni-Co) 280 microinches	ea	66.00
1154	Steel, stainless D (Cr19-Ni10)	ea	65.00	1375	Gold coating (Nickel) 30 microinches	ea	66.00
1155	Steel, stainless, Cr18-Ni12-Mo2	ea	65.00	1376	Gold coating (Nickel) 60 microinches	ea	66.00
1156	Steel, maraging (disk form)	ea	65.00	1377	Gold coating (Nickel) 120 microinches	ea	66.00
1159	Nickel-base alloy, 49% Ni, balance Fe	ea	65.00	1378	Gold coating (Nickel) 350 microinches	ea	66.00
1160	Nickel-base alloy, 80% Ni, 4% Mo, balance Fe	ea	65.00	1381	Set of one each 1371 and 1372	set(2)	109.00
1165	Iron, ingot E	ea	65.00	1382	Set of one each 1372 and 1373	set(2)	109.00
1166	Iron, ingot F	ea	65.00	1383	Set of one each 1373 and 1374	set(2)	109.00
1167	Steel, low-alloy G	ea	65.00	1384	Set of one each 1375 and 1376	set(2)	109.00
1169a	Steel, leaded			1385	Set of one each 1376 and 1377	set(2)	109.00
1171	Steel, Cr17-Ni11-Ti0.3, AISI 321, disk	ea	50.00	1386	Set of one each 1377 and 1378	set(2)	109.00
1172	Steel, Cr17-Ni11-Nb0.7, AISI 348, disk	ea	50.00	1398	Set of one each 1371, 1372, 1373, and 1374	set(4)	182.00
1185	Steel, stainless, AMS 5360A, AISI 316 alloy	ea	65.00	1399	Set of one each 1375, 1376, 1377, and 1378	set(4)	182.00
1206-2	High temperature alloy, Rene 41	ea	50.00	1402	Emittance std., 1/2 in. disk	ea	180.00
1207-1	High temperature alloy, Waspaloy (No. 1)	ea	50.00	1403	Emittance std., 7/8 in. disk	ea	190.00
1207-2	High temperature alloy, Waspaloy (No. 2)	ea	50.00	1404	Emittance std., 1 in. disk	ea	205.00
1208-1	High temperature alloy, Inco 718 (No. 1)	ea	50.00	1405	Emittance std., 1 1/8 in. disk	ea	240.00
1208-2	High temperature alloy, Inco 718 (No. 2)	ea	50.00	1406	Emittance std., 1 1/4 in. disk	ea	255.00
1209	High temperature alloy, Set, 1 ea of 1206-2, 1207-1, 1207-2, 1208-1, and 1208-2	set	185.00	1407	Emittance std., 2 in. x 2 in.	ea	390.00
1210	Zirconium metal A	ea	90.00	1408	Emittance std., 1 in. x 10 in.	ea	755.00
1261	Steel, AISI 4340, disk	ea	45.00	1409	Emittance std., 3/4 in. x 10 in.	ea	605.00
1262	Steel, AISI 94B17 (modified), disk	ea	45.00	1420	Emittance std., 1/2 in. disk	ea	180.00
1263	Steel, Cr-V (modified), disk	ea	45.00	1421	Emittance std., 7/8 in. disk	ea	180.00
1264	Steel, high carbon (modified), disk	ea	45.00	1422	Emittance std., 1 in. disk	ea	180.00
1265	Iron, electrolytic, disk	ea	45.00	1423	Emittance std., 1 1/8 in. disk	ea	180.00
1266	Set, 1 ea of 1261, 1262, 1263, 1264, and 1265	set	175.00	1424	Emittance std., 1 1/4 in. disk	ea	180.00
1301	Metal coating, nonmagnetic, 0.00010 in thick	ea	35.00	1425	Emittance std., 2 in. x 2 in.	ea	180.00
1302	Metal coating, nonmagnetic, 0.00025 in thick	ea	35.00	1427	Emittance std., 3/4 in. x 10 in.	ea	180.00
1303	Metal coating, nonmagnetic, 0.00050 in thick	ea	35.00	1428	Emittance std., 1/4 in. x 8 in.	ea	180.00
1304	Metal coating, nonmagnetic, 0.00075 in thick	ea	35.00	1440	Emittance std., 1/2 in. disk	ea	180.00
1305	Metal coating, nonmagnetic, 0.0010 in thick	ea	35.00	1441	Emittance std., 7/8 in. disk	ea	180.00
1306	Metal coating, nonmagnetic, 0.0015 in thick	ea	35.00	1442	Emittance std., 1 in. disk	ea	180.00
1307	Metal coating, nonmagnetic, 0.0020 in thick	ea	35.00	1443	Emittance std., 1 1/8 in. disk	ea	180.00
1308	Metal coating, nonmagnetic, 0.0025 in thick	ea	35.00	1444	Emittance std., 1 1/4 in. disk	ea	180.00
1309	Metal coating, nonmagnetic, 0.0027 in thick	ea	35.00	1445	Emittance std., 2 in. x 2 in.	ea	180.00
1310	Metal coating, nonmagnetic, 0.0032 in thick	ea	35.00	1475	Polyethylene, linear	50 g	100.00
1311	Metal coating, nonmagnetic, 0.0055 in thick	ea	35.00	1476	Polyethylene, branched	50 g	75.00
1312	Metal coating, nonmagnetic, 0.0080 in thick	ea	35.00	1511	Cyclohexane- dielectric	400 ml	125.00
1313	Metal coating, nonmagnetic, 0.010 in thick	ea	35.00	1512	1,2 Dichloroethane dielectric	400 ml	120.00
1314	Metal coating, nonmagnetic, 0.015 in thick	ea	35.00	1513	Nitrobenzene dielectric	400 ml	120.00
1315	Metal coating, nonmagnetic, 0.020 in thick	ea	35.00	1516	Permittivity Std., 38 mm x 2.5 mm	ea	193.00
1316	Metal coating, nonmagnetic, 0.025 in thick	ea	35.00	1517	Permittivity Std., 38 mm x 5 mm	ea	193.00
1317	Metal coating, nonmagnetic, 0.03 in thick	ea	35.00	1518	Permittivity Std., 51 mm x 2.5 mm	ea	193.00
1318	Metal coating, nonmagnetic, 0.04 in thick	ea	35.00	1519	Permittivity Std., 51 mm x 5 mm	ea	193.00
1319	Metal coating, nonmagnetic, 0.06 in thick	ea	35.00	1541	Mossbauer, iron foil	ea	150.00
1320	Metal coating, nonmagnetic, 0.08 in thick	ea	35.00	1571	Botanical, orchard leaves, trace element	75 g	68.00
1331	Metal coating, magnetic, 0.00012 in thick	ea	35.00	1573	Botanical, tomato leaves		
1332	Metal coating, magnetic, 0.00035 in thick	ea	35.00	1577	Biological, Liver, bovine		
1333	Metal coating, magnetic, 0.00055 in thick	ea	35.00	1578	Biological, Tuna, albacore		
1334	Metal coating, magnetic, 0.00075 in thick	ea	35.00	1591	Organic, 2,2-0-Isopropylidene-β-L-idofuranose	15 mg	35.00
1335	Metal coating, magnetic, 0.0010 in thick	ea	35.00	1592	Organic, 2,3-0-Isopropylidene-β-D-threo-pentulose	50 mg	35.00
1336	Metal coating, magnetic, 0.0013 in thick	ea	35.00	1593	Organic, L-Inositol	250 mg	35.00
1337	Metal coating, magnetic, 0.0016 in thick	ea	35.00	1594	Organic, Quebrachitol	500 mg	35.00
1338	Metal coating, magnetic, 0.0020 in thick	ea	35.00	1601	Carbon dioxide in nitrogen, 308 ppm	cyl	150.00
1339	Metal coating, magnetic, 0.0025 in thick	ea	35.00	1602	Carbon dioxide in nitrogen, 346 ppm	cyl	150.00
1341	Metal coating, magnetic, 0.00012 in thick	ea	35.00	1603	Carbon dioxide in nitrogen, 384 ppm	cyl	150.00
1342	Metal coating, magnetic, 0.00035 in thick	ea	35.00	1604a	Oxygen in nitrogen, 1.5 ppm	cyl	110.00
1343	Metal coating, magnetic, 0.00065 in thick	ea	35.00	1605	Oxygen in nitrogen, 10 ppm	cyl	110.00
1344	Metal coating, magnetic, 0.0010 in thick	ea	35.00	1606	Oxygen in nitrogen, 112 ppm	cyl	110.00
1345	Metal coating, magnetic, 0.0015 in thick	ea	35.00	1607	Oxygen in nitrogen, 211 ppm	cyl	110.00
1346	Metal coating, magnetic, 0.0020 in thick	ea	35.00	1608	Oxygen in nitrogen, 978 ppm	cyl	110.00
1351	Set of one each 1307 and 1311	set(2)	47.00				
1352	Set of one each 1332 and 1334	set(2)	47.00				
1353	Set of one each 1335 and 1339	set(2)	47.00				
1361	Set of one each 1302, 1303, 1305, and 1307	set(4)	71.00				
1362	Set of one each 1306, 1310, 1311, and 1312	set(4)	71.00				

SRM	Type	Unit	Price	SRM	Type	Unit	Price
1609	Oxygen in nitrogen, 20.98 mole percent	cyl	\$ 110.00	2335	Tin coating 650 microinches	ea	\$ 66.00
1610	Hydrocarbon in air, 0.103 mole percent	cyl	174.00	2336	Tin coating 750 microinches	ea	66.00
1611	Hydrocarbon in air, 0.0107 mole percent	cyl	174.00	2338	Set of one each 2332 and 2335	set(2)	109.00
1612	Hydrocarbon in air, 0.00117 mole percent . . .	cyl	174.00	2339	Set of one each 2331, 2333, 2334, and 2336	set(4)	182.00
1613	Hydrocarbon in air, 0.000102 mole percent . .	cyl	174.00	2340	Set of one each 2331, 2332, 2333, 2334, 2335, and 2336	set(6)	261.00
1614	Carbon monoxide in air				Tape, magnetic, secondary std.	ea	695.00
1615	Carbon monoxide in air				Cesium-137, gamma-ray point source	ea	60.00
1616	Carbon monoxide in air				Niobium-94, gamma-ray point source	ea	151.50
1617	Carbon monoxide in air				Cadmium-109, gamma-ray point source	ea	93.00
1618	Carbon monoxide in air				Cobalt-60, gamma-ray point source	ea	70.00
1619	Carbon monoxide in air						
1621	Sulfur in residual fuel oil, 1.05 wt percent . .	100 ml	30.00	4202	Thorium-228, gamma-ray point source	ea	98.00
1622	Sulfur in residual fuel oil, 2.14 wt percent . .	100 ml	30.00	4203-B	Thorium-228, gamma-ray point source	ea	98.00
1623	Sulfur in residual fuel oil, 0.268 wt percent . .	100 ml	30.00	4205	Cesium-137, gamma-ray point source	ea	60.00
1624	Sulfur in distillate fuel oil, 0.211 wt percent .	100 ml	30.00	4206	Yttrium-88, gamma-ray point source	ea	77.00
1625	Sulfur dioxide permeation tube 10 cm	ea	50.00	4207	Cobalt-60, gamma-ray point source	ea	86.00
1626	Sulfur dioxide permeation tube 5 cm	ea	50.00	4209			
1627	Sulfur dioxide permeation tube 2 cm	ea	50.00	4210	Americium-241, gamma-ray point source	ea	127.50
1630	Trace mercury in coal	50 g	45.00	4211	Krypton-85, gamma-ray point source	ea	160.00
1651	Zirconium-barium chromate heat source powder (ca 350 cal/g)	50 g	55.00	4212	Americium-241, gamma-ray point source	ea	127.50
1652	Zirconium-barium chromate heat source powder (ca 390 cal/g)	50 g	55.00	4213	Carbon-14(n-hexadecane) soln std.	3 g	55.00
1653	Zirconium-barium chromate heat source powder (ca 425 cal/g)	50 g	55.00	4222	Carbon-14(n-hexadecane) soln std.	3 g	55.00
1654	α -Quartz for hydrofluoric acid solution calorimetry	25 g	175.00	4224	Carbon-14(n-hexadecane) soln std.	3 g	55.00
1800	Microstandard ion-exchange beads	slide	130.00	4226	Nickel-63, soln std.	4 g	148.50
1810	Linerboard for tape test			4228	Selenium-75, soln std.	4.6 g	118.00
2001	Aluminum on glass, specular spectral reflectance	ea	275.00	4229	Aluminum-26 soln. std.		
2002	Aluminum on glass, specular spectral reflectance	ea	275.00	4232	Silver-110m soln. std.		
2003	Aluminum on glass, specular spectral reflectance	ea	275.00	4235	Krypton-85, gamma-ray gas std.	ea	100.00
2004	Aluminum on glass, specular spectral reflectance	ea	275.00	4236	Xenon-133, gas std.		
2005	Gold on glass, specular spectral reflectance . .	ea	275.00	4240	Bismuth-207 gamma-ray point source		
2006	Gold on glass, specular spectral reflectance . .	ea	275.00	4245	Carbon-14 (Na_2CO_3 in H_2O)		
2007	Gold on glass, specular spectral reflectance . .	ea	275.00	4246	Carbon-14 (Na_2CO_3 in H_2O)		
2008	Gold on glass, specular spectral reflectance . .	ea	275.00	4247	Carbon-14 (Na_2CO_3 in H_2O)		
2101-5	Color std.	set	255.00	4900	Polonium-210 alpha-particle source On Request		
2106	ISCC-NBS color charts	set	5.00	4901	Polonium-210 alpha-particle source On Request		
2141	Urea	2 g	33.00	4902	Polonium-210 alpha-particle source On Request		
2142	o-Bromobenzoic acid	2 g	33.00	4904-D	Americium-241, alpha-particle source	ea	124.00
2143	p-fluorobenzoic acid			4906	Plutonium-238, alpha-particle source	ea	158.00
2144	m-chlorobenzoic acid			4921-C	Sodium-22, soln std.	3 g	42.00
2175	Organic, Ethane- d_6	5 cm^3	320.00	4922-E	Sodium-22, soln std.	5 g	61.00
2176	Organic, Propane-1,1,1- d_3	5 cm^3	1,155.00	4925	Carbon-14 (benzoic acid in toluene)	3 g	48.00
2186-I	Potassium dihydrogen phosphate, pD	30 g	41.00	4926	Hydrogen-3 (water)	25 g	48.00
2186-II	Disodium hydrogen phosphate, pD	30 g	41.00	4927	Hydrogen-3 (water)	3 g	48.00
2191	Sodium bicarbonate, pD	30 g	41.00	4929-C	Iron-55, soln std.	4 g	115.00
2192	Sodium carbonate, pD	30 g	41.00	4935-C	Krypton-85, beta-particle gas std.	10 ml	100.00
2201	Sodium chloride ion-selective electrode	125 g	34.00	4940-B	Promethium-147, soln std.	3 g	60.00
2202	Potassium chloride ion-selective electrode . . .	160 g	34.00	4941-C	Cobalt-57, soln std.	5 g	108.00
2301	Gold coating (epoxy) 30 microinches	ea	66.00	4943	Chlorine-36, soln std.	3 g	43.00
2302	Gold coating (epoxy) 60 microinches	ea	66.00	4947	Hydrogen-3 (tritiated toluene)	4 g	46.00
2303	Gold coating (epoxy) 120 microinches	ea	66.00	4948	Cerium-Praseodymium-144, soln std.	3.3 g	70.00
2304	Gold coating (epoxy) 280 microinches	ea	66.00	4950-B	Radium solution std., 10^{-9} g (Rd analysis)	20 g	81.00
2305	Set of one each 2301 and 2302	set(2)	109.00	4951	Radium solution std., 10^{-11} g (Rd analysis)	100 g	48.00
2306	Set of one each 2302 and 2303	set(2)	109.00	4952-A	Radium blank solution (Rd analysis)	100 g	30.00
2307	Set of one each 2303 and 2304	set(2)	109.00	4953	Radium solution std., 10^{-8} g (Rd analysis)	20 g	81.00
2308	Set of one each 2301, 2302, 2303, and 2304	set(4)	182.00	4955	Radium solution std., 0.1 μg Ra	5 g	63.00
2311	Gold coating (copper) 30 microinches	ea	66.00	4956	Radium solution std., 0.2 μg Ra	5 g	63.00
2312	Gold coating (copper) 60 microinches	ea	66.00	4957	Radium solution std., 0.5 μg Ra	5 g	63.00
2313	Gold coating (copper) 120 microinches	ea	66.00	4958	Radium solution std., 1 μg Ra	5 g	63.00
2314	Gold coating (copper) 280 microinches	ea	66.00	4959	Radium solution std., 2 μg Ra	5 g	63.00
2315	Set of one each 2311 and 2312	set(2)	109.00	4960	Radium solution std., 5 μg Ra	5 g	63.00
2316	Set of one each 2312 and 2313	set(2)	109.00	4961	Radium solution std., 10 μg Ra	5 g	63.00
2317	Set of one each 2313 and 2314	set(2)	109.00	4962	Radium solution std., 20 μg Ra	5 g	63.00
2318	Set of one each 2311, 2312, 2313, and 2314	set(4)	182.00	4963	Radium solution std., 50 μg Ra	5 g	63.00
2331	Tin coating 60 microinches	ea	66.00	4964-B	Radium solution std., 102 μg Ra	5 g	63.00
2332	Tin coating 110 microinches	ea	66.00	4990-B	Carbon-14, contemporary std. for dating	1 lb	26.50
2333	Tin coating 160 microinches	ea	66.00	4991-C	Sodium-22, gamma-ray point source	ea	79.00
2334	Tin coating 275 microinches	ea	66.00	4996-B	Sodium-22, gamma-ray point source	ea	79.00
				4998-E	Yttrium-88, gamma-ray point source	ea	77.00
				U-0002	Uranium oxide - depleted (U-235)	1 g	58.50
				U-005	Uranium oxide - depleted (U-235)	1 g	48.50
				U-010	Uranium oxide - enriched (U-235)	1 g	48.50
				U-015	Uranium oxide - enriched (U-235)	1 g	48.50
				U-020	Uranium oxide - enriched (U-235)	1 g	49.00

SRM	Type	Unit	Price	B. RESEARCH MATERIALS			
U-030	Uranium oxide - enriched (U-235)	1 g	\$ 49.00	RM	Type	Unit	Price
U-050	Uranium oxide - enriched (U-235)	1 g	49.00	RM-1C	Ultra-purity aluminum, single crystal cube ...	ea	\$ 90.00
U-100	Uranium oxide - enriched (U-235)	1 g	50.00	RM-1R	Ultra-purity aluminum, polycrystalline rod ...	ea	50.00
U-150	Uranium oxide - enriched (U-235)	1 g	51.00	RM-2S	Molybdenum, rod 3.2 mm dia., 50 mm long ..		
U-200	Uranium oxide - enriched (U-235)	1 g	51.50	RM-2L	Molybdenum, rod 6.4 mm dia., 50 mm long ..		
U-350	Uranium oxide - enriched (U-235)	1 g	54.50	RM-3S	Tungsten, rod 3.2 mm dia., 50 mm long		
U-500	Uranium oxide - enriched (U-235)	1 g	56.00	RM-3L	Tungsten, rod 6.4 mm dia., 50 mm long		
U-750	Uranium oxide - enriched (U-235)	1 g	61.50	RM-4	Tin, high purity (99.9999)		
U-800	Uranium oxide - enriched (U-235)	1 g	62.00	RM-5	Tin (99.999)		
U-850	Uranium oxide - enriched (U-235)	1 g	63.00				
U-900	Uranium oxide - enriched (U-235)	1 g	64.00				
U-930	Uranium oxide - enriched (U-235)	1 g	65.50				
U-970	Uranium oxide - enriched (U-235)	1 g	68.50				
				C. GENERAL MATERIALS			
				GM	Type	Unit	Price
				GM-1	Hydrogen in steel	set	\$ 86.00
				GM-2	Hydrogen in steel	set	86.00
				GM-2007	Clay, Attapulgis		
					Temporarily out of stock		

SECTION IIa

STANDARD REFERENCE MATERIALS
NEW – RENEWALS

Standard Reference Materials currently available, but not listed in the Catalog of Standard Reference Materials dated July 1970. Descriptions of these SRM's are given, by category, in Section IIb.

SRM	Type	Category No.	SRM	Type	Category No.
8j	Steel, bessemer (simulated) 0.1C	3.1	735L1	Stainless steel, thermal conductivity, 3.5 cm dia., 5 cm long	4.25
20g	Steel, AISI 1045	3.1	735L2	Stainless steel, thermal conductivity, 3.5 cm dia., 10 cm long	4.25
53e	Bearing metal, lead-base	3.6	736L1	Copper, thermal expansion, 2 in. long	4.24
79a	Fluorspar	3.54	736L2	Copper, thermal expansion, 4 in. long	4.24
121d	Steel, Cr17-Ni11-Ti0.3	3.1	736L3	Copper, thermal expansion, 6 in. long	4.24
123c	Steel, Cr17-Ni11-Nb0.7	3.1	739L1	Fused silica, thermal expansion, 2 in. long	4.24
125b	Steel, high silicon	3.1	739L2	Fused silica, thermal expansion, 4 in. long	4.24
166c	Steel, stainless, low carbon	3.1	739L3	Fused silica, thermal expansion, 6 in. long	4.24
180	Fluorspar, high-grade	3.54	742	Alumina, high temp. melting point	4.21
186IIc	Disodium hydrogen phosphate, pH	3.66	746	Cadmium, vapor pressure	4.23
187b	Borax	3.66	748	Silver, vapor pressure	4.23
361	Steel, AISI 4340	3.1	755	Quartz (SiO ₂)	4.22
362	Steel, AISI 94B17 (modified)	3.1	756	Potassium nitrate	4.22
363	Steel, Cr-V (modified)	3.1	758	DTA temperature std (125-435 °C)	4.22
364	Steel, high carbon (modified)	3.1	759	DTA temperature std (295-675 °C)	4.22
365	Iron, electrolytic	3.1	760	DTA temperature std (570-940 °C)	4.22
366	Set, 1 ea 361, 362, 363, 364, and 365	3.1	916	Bilirubin, clinical	3.43
373f	Benzothiazyl disulfide (set of 4)	5.1	917	D-Glucose, clinical	3.43
374c	Tetramethylthiuram disulfide	5.1	918	Potassium chloride, clinical	3.43
431	Tin A	3.7	920	D-Mannitol, clinical	3.43
433	Tin C	3.7	922	Tris(hydroxymethyl)aminomethane, clinical	3.43
434	Tin D	3.7	923	Tris(hydroxymethyl)aminomethane hydrochloride, clinical	3.43
435	Tin E	3.7	924	Lithium carbonate, clinical	3.43
483	Microprobe, iron-3% silicon	3.8	930	Glass filters for spectrophotometry	3.43
485	Austenite in ferrite	4.61	931	Liquid filters for spectrophotometry	3.43
493	Iron carbide in ferrite	4.61	945	Plutonium metal, standard matrix material	3.61
610	Glass, trace elements, 500 ppm, 3 mm	3.56	949c	Plutonium metal, assay	3.61
611	Glass, trace elements, 500 ppm, 1 mm	3.56	953	Neutron density monitor wire 1 meter long	3.61
612	Glass, trace elements, 50 ppm, 3 mm	3.56	953-L1	Neutron density monitor wire 5 meters long	3.61
613	Glass, trace elements, 50 ppm, 1 mm	3.56	953-L2	Neutron density monitor wire 10 meters long	3.61
614	Glass, trace elements, 1 ppm, 3 mm	3.56	953-L3	Neutron density monitor wire 25 meters long	3.61
615	Glass, trace elements, 1 ppm, 1 mm	3.56	984	Rubidium chloride, isotopic and assay	3.62
616	Glass, trace elements, 0.2 ppm, 3 mm	3.56	987	Strontium carbonate, isotopic and assay	3.62
617	Glass, trace elements, 0.2 ppm, 1 mm	3.56	1006	Smoke density std., non-flaming	5.50
618	Glass, trace elements, set 3 mm	3.56	1007	Smoke density std., flaming	5.50
619	Glass, trace elements, set 1 mm	3.56	1009	Photographic step tablet 0-3	5.50
620	Glass plate, soda lime	3.56	1017a	Glass beads (Sieve nos. 50-140)	5.3
654a	Titanium alloy, 6Al-4V (B)	3.7	1061c	Magnesium cyclohexanecarboxylate	3.44
661	Steel, AISI 4340 rod	3.2	1079b	Tris(1-phenyl-1,3-butanediol)iron(III)	3.44
662	Steel, AISI 94B17 (modified) rod	3.2	1095	Steel, AISI 4340, rod	3.2
663	Steel, Cr-V (modified) rod	3.2	1096	Steel, AISI 94B17 (modified), rod	3.2
664	Steel, high carbon (modified) rod	3.2	1097	Steel, Cr-V (modified), rod	3.2
665	Iron, electrolytic, rod	3.2	1099	Iron, electrolytic, rod	3.2
666	Set, 1 ea 661 and 665	3.2	1132	Bearing metal, lead-based	3.7
667	Set, 1 ea 662 and 663	3.2	1134	Steel, high-silicon	3.2
668	Set, 1 ea 661, 662, 663, 664, and 665	3.2	1135	Steel, high-silicon	3.2
700c	Light-sensitive paper	5.4	1171	Steel, Cr17-Ni11-Ti0.3	3.2
701c	Standard faded strips	5.4	1172	Steel, Cr17-Ni11-Nb0.7	3.2
720	Sapphire, synthetic (Al ₂ O ₃)	4.22	1206-2	High temperature alloy, Rene 41, disk	3.2
723	Tris(hydroxymethyl)aminomethane, basimetric	3.41	1207-1	High temperature alloy, Waspaloy (No. 1), disk	3.2
733	Thermocouple wire, Silver - 28% Gold	4.26	1207-2	High temperature alloy, Waspaloy (No. 2), disk	3.2
734S	Iron, electrolytic, thermal conductivity, 6.4 mm dia., 305 mm long	4.25	1208-1	High temperature alloy, Inco 718 (No. 1), disk	3.2
734L1	Iron, electrolytic, thermal conductivity, 31.8 mm dia., 152 mm long	4.25	1208-2	High temperature alloy, Inco 718 (No. 2), disk	3.2
734L2	Iron, electrolytic, thermal conductivity, 31.8 mm dia., 305 mm long	4.25	1209	Set, 1 ea of 1206-2, 1207-1, 1207-2, 1208-1, and 1208-2	3.2
735S	Stainless steel, thermal conductivity, 0.65 cm dia., 30 cm long	4.25			
735M1	Stainless steel, thermal conductivity, 1.25 cm dia., 15 cm long	4.25			
735M2	Stainless steel, thermal conductivity, 1.25 cm dia., 30 cm long	4.25			

SRM	Type	Category No.	SRM	Type	Category No.
1261	Steel, AISI 4340, disk	3.2	2142	o-Bromobenzoic acid	3.42
1262	Steel, AISI 94B17 (modified), disk	3.2	2201	Sodium chloride ion-selective electrode	3.66
1263	Steel, Cr-V (modified), disk	3.2	2202	Potassium chloride ion-selective electrode	3.66
1264	Steel, high carbon (modified), disk	3.2	2301	Gold coating (epoxy) 30 microinches	4.1
1265	Iron, electrolytic, disk	3.2	2302	Gold coating (epoxy) 60 microinches	4.1
1266	Set, 1 ea of 1261, 1262, 1263, 1264, and 1265	3.2	2303	Gold coating (epoxy) 120 microinches	4.1
1475	Polyethylene, linear	4.5	2304	Gold coating (epoxy) 280 microinches	4.1
1476	Polyethylene, branched	4.5	2305	Set of one each 2301 and 2302	4.1
1511	Cyclohexane, dielectric	4.87	2306	Set of one each 2302 and 2303	4.1
1512	1,2 Dichloroethane, dielectric	4.87	2307	Set of one each 2303 and 2304	4.1
1513	Nitrobenzene, dielectric	4.87	2308	Set of one each 2301, 2302, 2303, and 2304	4.1
1516	Permittivity std., 38 mm x 2.5 mm	4.87	2311	Gold coating (copper) 30 microinches	4.1
1517	Permittivity std., 38 mm x 5 mm	4.87	2312	Gold coating (copper) 60 microinches	4.1
1518	Permittivity std., 51 mm x 2.5 mm	4.87	2313	Gold coating (copper) 120 microinches	4.1
1519	Permittivity std., 51 mm x 5 mm	4.87	2314	Gold coating (copper) 280 microinches	4.1
1541	Iron foil, mossbauer std	4.86	2315	Set of one each 2311 and 2312	4.1
1571	Botanical, orchard leaves	3.46	2316	Set of one each 2312 and 2313	4.1
1604a	Oxygen in nitrogen 1.5 ppm	3.51	2317	Set of one each 2313 and 1314	4.1
1610	Hydrocarbon in air 0.103 mole percent	3.51	2318	Set of one each 2311, 2312, 2313, and 2314	4.1
1611	Hydrocarbon in air 0.0107 mole percent	3.51	2331	Tin coating 60 microinches	4.1
1612	Hydrocarbon in air 0.00117 mole percent	3.51	2332	Tin coating 110 microinches	4.1
1613	Hydrocarbon in air 0.000102 mole percent	3.51	2333	Tin coating 160 microinches	4.1
1623	Sulfur in residual fuel oil 0.268 wt percent	3.52	2334	Tin coating 275 microinches	4.1
1624	Sulfur in distillate fuel oil 0.211 wt percent	3.52	2335	Tin coating 650 microinches	4.1
1625	Sulfur dioxide permeation tube 10 cm	3.51	2336	Tin coating 750 microinches	4.1
1626	Sulfur dioxide permeation tube 5 cm	3.51	2338	Set of one each 2332 and 2335	4.1
1627	Sulfur dioxide permeation tube 2 cm	3.51	2339	Set of one each 2331, 2333, 2334, and 2536	4.1
1630	Trace mercury in coal	3.50	2340	Set of one each 2331, 2332, 2333, 2334, 2335, and 2336	4.1
1654	α -Quartz for HF soln calorimetry	4.22	4201-B	Niobium-94, gamma-ray point source	4.51
2001	Aluminum on glass, specular spectral reflectance	4.45	4211	Americium-241, gamma-ray point source	4.51
2002	Aluminum on glass, specular spectral reflectance	4.45	4212	Krypton-85, gamma-ray point source	4.51
2003	Aluminum on glass, specular spectral reflectance	4.45	4213	Americium-241, gamma-ray point source	4.51
2004	Aluminum on glass, specular spectral reflectance	4.45	4228	Selenium-75, soln std	4.51
2005	Gold on glass, specular spectral reflectance	4.45	4904-D	Americium-241, alpha-particle source	4.51
2006	Gold on glass, specular spectral reflectance	4.45	4929-C	Iron-55, soln std	4.51
2007	Gold on glass, specular spectral reflectance	4.45	U-0002	Uranium oxide-depleted (U-235)	3.61
2008	Gold on glass, specular spectral reflectance	4.45	U-970	Uranium oxide-enriched (U-235)	3.61
2141	Urea	3.42	RM-1C	Ultra-purity aluminum, single crystal cube	6.0
			RM-1R	Ultra-purity aluminum, polycrystalline rod	6.0
			GM-1	Hydrogen in steel	7.0
			GM-2	Hydrogen in steel	7.0
			GM-2007	Attapulugus clay	7.0

SECTION IIb

SRM DESCRIPTIONS BY CATEGORY

Category 3.1. Steels (Chip Form)

SRM	8j	Steel, bessemer (simulated) 0.1C, in chip form has been issued with a Provisional Certificate of Analysis. The composition is: C 0.081, Mn 0.505, P 0.095, S 0.077, Si 0.05, Cu 0.020, Ni 0.113, Cr 0.047, V 0.017, and Mo 0.037. This material costs \$33 per 150 g unit.
SRM	20g	Steel, AISI 1045 in chip form has been issued with a Certificate of Analysis. The composition is: C 0.462, Mn 0.665, P 0.012, S 0.028, Si 0.305, Cu 0.034, Ni 0.034, Cr 0.036, V 0.002, Mo 0.008, and Al 0.040. This material costs \$33 per 150 g unit.
SRM	121d	Steel, stainless, Cr17-Ni11-Ti0.3, AISI 321, in chip form has been issued with a Certificate of Analysis. The nominal composition is: C 0.07, Mn 1.8, P 0.02, S 0.01, Si 0.5, Cu 0.1, Ni 11.2, Cr 17.4, Mo 0.2, Ti 0.3, and Co 0.1. This material is also available in disk form as SRM 1171, see Category 3.2. SRM 121d costs \$33 per 150 g unit.
SRM	123c	Steel, stainless, Cr17-Ni11-Nb0.7, AISI 348, in chip form has been issued with a Certificate of Analysis. The nominal composition is: C 0.05, Mn 1.7, P 0.01, S 0.01, Si 0.6, Cu 0.1, Ni 11.4, Cr 17.4, V 0.03, Mo 0.2, Nb 0.7, Ta 0.001, and Co 0.1. This material is also available in disk form as SRM 1172, see Category 3.2. SRM 123c costs \$33 per 150 g unit.
SRM	125b	High Silicon Steel in chip form has been issued with a Certificate of Analysis. The nominal composition is: C 0.028, Mn 0.278, P 0.029, S 0.008, Si 2.89, Cu 0.071, Ni 0.038, Cr 0.019, Mo 0.008, Sn 0.003 and Al 0.329. This material costs \$33 per 150 g unit. A high silicon steel of similar composition is also issued in solid disk form as SRM 1134 in Category 3.2.
SRM	166c	Low Carbon Stainless Steel (AISI 316L) in powder form has been issued with a Certificate of Analysis for carbon. The nominal value is 0.0078%. The material is available in 100 g units for \$25.
SRM	361 - 366	Low alloy steel and electrolytic iron standards in chip form for chemical analysis--companion SRM's to the "1200 series" (see Category 3.2)--have been issued with Provisional Certificates of Analysis. These SRM's are sold as follows:

SRM	Type	Unit	Price
361	Steel, AISI 4340	150 g	\$33.00
362	Steel, AISI 94B17 (modified)	150 g	33.00
363	Steel, Cr-V (modified)	150 g	33.00
364	Steel, High Carbon (modified)	150 g	33.00
365	Iron, Electrolytic	150 g	33.00
366	Set of one each 361, 362, 363, 364, and 365	set	100.00

Category 3.2 Steels (Solid Form)

SRM 661 - 668 Low alloy steel and electrolytic iron standards in rod form, 3.2 mm in diameter and 51 mm long, for microchemical methods of analysis such as electron probe, laser probe, and spark source mass spectrometry—from the same melts as the “1200 Series” (see below)—have been issued with Provisional Certificates of Analysis. These SRM’s are sold as follows:

SRM	Type	Unit	Price
661	Steel, AISI 4340	ea	\$25.00
662	Steel, AISI 94B17 (modified)	ea	25.00
663	Steel, Cr-V (modified)	ea	25.00
664	Steel, High Carbon (modified)	ea	25.00
665	Iron, Electrolytic	ea	25.00
666	Set of 2 rods: 661 and 665	sets	40.00
667	Set of 2 rods: 662 and 663	sets	40.00
668	Set of 5 rods: 661, 662, 663, 664, and 665	sets	75.00

SRM 1095 Steel, AISI 4340 in solid form for determination of oxygen in metal by vacuum or inert gas fusion and neutron activation methods of analysis—from the same melt as 1261 (see below)—has been issued with a Certificate of Analysis for oxygen at 9 ppm. This SRM is a rod 6.4 mm in diameter and 102 mm long, and costs \$33 per unit.

SRM 1096 Steel, AISI 94B17 (modified) in solid form for the determination of oxygen and nitrogen in metal by vacuum or inert gas fusion and neutron activation methods of analysis—from the same melt as 1262 (see below)—has been issued with a Certificate of Analysis. The values for oxygen and nitrogen are 10 ppm and 40 ppm, respectively. This SRM is a rod 6.4 mm in diameter and 102 mm long, and costs \$33 each.

SRM 1097 Steel, Cr-V (modified) in solid form for the determination of oxygen and nitrogen in metal by vacuum or inert gas fusion and neutron activation methods of analysis—from the same melt as 1263 (see below)—has been issued with a Certificate of Analysis for oxygen at 6.5 ppm and nitrogen at 41 ppm. This SRM is a rod 6.4 mm in diameter and 102 mm long, and costs \$33 each.

SRM 1099 Iron, electrolytic in solid form for the determination of oxygen in metals by vacuum or inert gas fusion and neutron activation methods of analysis—from the same melt as 1265 (see below)—has been issued with a Provisional Certificate of Analysis for oxygen at 61 ppm. This SRM is a rod 6.4 mm in diameter and 102 mm long, and costs \$33 per unit.

SRM 1134 Steel, high silicon in solid form has been issued with a Certificate of Analysis. The nominal composition is: C 0.026, Mn 0.277, P 0.028, S 0.009, Si 2.89, Cu 0.070, Ni 0.038, Cr 0.019, Mo 0.008, Sn 0.003 and Al 0.329. This material is issued in the form of a disk 31.8 mm in diameter and 19.1 mm thick, and costs \$50 each. A similar material is available in chip form as SRM 125b in Category 3.1.

SRM 1135 Steel, high silicon in solid form has been issued with a Certificate of Analysis. The nominal composition is: C 0.027, Mn 0.095, P 0.006, S 0.026, Si 3.19, Cu 0.055, Ni 0.050, Cr 0.022, V <0.001, Mo 0.013, Sn (0.00₅), and Al (0.00₅). SRM 1135 is available in the form of a disk 31.8 mm in diameter and 19.1 mm thick, and it costs \$50 each.

- SRM 1171 Steel, stainless, Cr17-Ni11-Ti0.3, AISI 321, in disk form, 31 mm in diameter and 19 mm thick, has been issued with a Certificate of Analysis. The nominal composition is: C 0.07, Mn 1.8, P 0.02, Si 0.5, Cu 0.1, Ni 11.2, Cr 17.4, Mo 0.2, Ti 0.3, and Co 0.1. This material is also available in chip form as SRM 121d, see Category 3.1. SRM 1171 costs \$50 each.
- SRM 1172 Steel, stainless, Cr17-Ni11-Nb0.7, AISI 348, in disk form, 31 mm in diameter and 19 mm thick, has been issued with a Certificate of Analysis. The nominal composition is: C 0.05, Mn 1.7, P 0.01, S 0.01, Si 0.6, Cu 0.1, Ni 11.4, Cr 17.4, V 0.03, Mo 0.2, Nb 0.7, Ta 0.001, and Co 0.1. This material is also available in chip form as SRM 123c. SRM 1172 costs \$50 each.
- SRM 1206 - 1209 Five SRM's for three important high-temperature alloys have been made available with Provisional Certificates of Analysis. One is for high-temperature alloy Rene 41 (1206-2), while two each are for the high-temperature alloys Waspaloy (1207-1 and 1207-2) and Inco 718 (1208-1 and 1208-2). Issued in the form of solid sections, approximately 31 mm square and 19 mm thick, the standards are designed primarily for application in x-ray spectrometric methods of analysis. However, they also may be used in optical emission spectrometric methods of analysis. These SRM's cost \$50 per unit, or may be purchased as a complete set (as SRM 1209) for \$185 per set.
- SRM 1261 - 1266 Low alloy steel and electrolytic iron—the "1200 Series" (replacements for the 1100 series)—have been issued with Provisional Certificates of Analysis for use in optical emission and x-ray spectrometric analysis. These SRM's are disks 31 mm in diameter and 19 mm thick. The initial certification is made for some 10 to 15 elements; however, chemical information is provided for the remaining 40 elements. They are sold as follows:

SRM	Type	Unit	Price
1261	Steel, AISI 4340	ea	\$ 45.00
1262	Steel, AISI 94B17 (modified)	ea	45.00
1263	Steel, Cr-V (modified)	ea	45.00
1264	Steel, High Carbon (modified)	ea	45.00
1265	Iron, Electrolytic	ea	45.00
1266	Set of one each 1261, 1262, 1263, 1264, and 1265	set	175.00

Category 3.6. Nonferrous Alloys (Chip Form)

- SRM 53e Lead base bearing metal in powder form has been issued with a Certificate of Analysis. The nominal composition is: (Pb 84, not certified), Sb 10.26, Sn 5.84, Cu 0.054, Bi 0.052, As 0.057 and Ni 0.003. This material is the same as SRM 1132 which is issued in the solid form in Category 3.7. and costs \$33 per 150 g unit.

Category 3.7. Nonferrous Alloys (Solid Form)

- SRM 431 - 435 Five tin SRM's: 431, Tin A; 432, Tin B; 433, Tin C; 434, Tin D; and 435, Tin E, are now available for use by the tin-plating industry. These SRM's are in the form of rods 1/4 in. in diameter and 4 in. long (for calibrating optical emission spectroscopic equipment). These SRM's cost \$35 each.
- SRM 654a Titanium Alloy, 6Al-4V has been issued with a Certificate of Analysis. The material is in the form of a disk 31 mm in diameter and 6.4 mm thick with a nominal composition of: Al 6.3 and V 3.9 (values for Fe, Cr, Mn, and Mo are not certified, but are given for information only). This material costs \$35 each.

SRM 1132 Lead base bearing metal in solid form has been issued with a Certificate of Analysis. The material is in the form of a disk 31.8 mm in diameter and 19.0 mm thick with a nominal composition of (Pb 84, not certified), Sb 10.26, Sn 5.84, Cu 0.054, Bi 0.052, As 0.057 and Ni 0.003. This material is the same as SRM 53e which is issued in a powder form and is listed in Category 3.6. SRM 1132 costs \$50 each.

Category 3.8. Miscellaneous Metals

SRM 483 Iron-3% Silicon Alloy Microprobe Standard has been issued with a Certificate of Analysis. The material is 3 mm by 3 mm by 0.28 mm with a nominal composition of: Silicon 3.2 wt. percent and Iron (by difference) 96.8 wt. percent. This material costs \$50 each.

Category 3.41. Primary, Working, and Secondary Standard Chemicals

SRM 723 *Tris* (hydroxymethyl)aminomethane, 2-amino-2-hydroxymethyl-1, 3-propanediol, is the first basimetric SRM issued by NBS. The basimetric value certified is 99.9690 ± 0.0030 weight percent. The uncertainty represents the 95 percent confidence interval of the mean for 30 determinations. The corresponding standard deviation of a single measurement is 0.0081 units. SRM 723 costs \$50.75 per 50 g unit.

Category 3.42. Microanalysis Standards

SRM 2141 Urea is a compound with a relatively high nitrogen content, 46.65 percent, issued to supplement the other micronitrogen SRM's--acetanilide (SRM 141b), which contains an open-chain nitrogen atom, and nicotinic acid (SRM 148), which contains a heterocyclic nitrogen atom. Both 141b and 148 have relatively low nitrogen contents of 10.36 and 11.38 percent, respectively. SRM 2141 costs \$33 per 2 g unit.

SRM 2142 o-Bromobenzoic acid is certified only for the weight percentage of bromine, but has been characterized for identity and purity by several organic and physical chemistry techniques. SRM 2142 is the first in a planned series of SRM's certified for halogens that are to be issued to augment the existing microchemical SRM's. SRM 2142 costs \$33 per 2 g unit.

Category 3.43. Clinical Laboratory Standards

SRM 916 Bilirubin has been issued with a Provisional Certificate of Analysis as a chemical of known purity for use as an analytical standard in clinical chemistry. The provisionally certified purity for bilirubin is 99.0 percent. This material costs \$92 per 100 mg unit.

SRM 917 D-glucose is certified for use as an analytical standard in clinical chemistry. The certified purity is 99.9 ± 0.1 percent and the relative amounts of α - and β -D-glucopyranose are given. SRM 917 costs \$43 per 25 g unit.

SRM 918 Potassium Chloride has been issued with a Certificate of Analysis as a chemical of known purity for use as an analytical standard for clinical chemistry. The certified purity is 99.9 percent. This material costs \$40 per 30 g unit.

SRM 920 D-Mannitol has been issued with a Certificate of Analysis as a chemical of known purity for use as an analytical standard for clinical chemistry. The certified purity is 99.8 percent. This SRM costs \$57 per 50 g unit.

- SRM 922 - 923 Tris(hydroxymethyl)aminomethane and Tris(hydroxymethyl)aminomethane hydrochloride have been issued with a Provisional Certificate of Analysis for use as a pH standard for clinical chemistry. The Certificate provides directions for preparing a solution of known pH value from the two SRM's, and provides a range of pH values as a function of solution temperature. SRM 922 costs \$40 per 25 g unit; SRM 923 costs \$40 per 35 g unit.
- SRM 924 Lithium carbonate has been issued with a Certificate of Analysis as a chemical of known purity for use as an analytical standard for clinical chemistry. The certified purity is 100.05 percent. The apparent purity in excess of 100 percent is probably caused by an anion impurity of lower molecular weight than the carbonate ion, e.g., hydroxyl. This SRM costs \$50 per 30 g unit.
- SRM 930 Glass Filters for Spectrophotometers have been issued with a Certificate. This SRM consists of three glass filters having transmittances of approximately 10, 20, and 30 percent. Each filter is individually calibrated and certified for absorbance and transmittance over a spectral wavelength range from 440 to 635 nanometers. These filters are intended to check the accuracy of the photometric scale of spectrophotometers, and to provide a means of interlaboratory comparisons of spectrophotometric data. It is probable that in the field of clinical chemistry a large amount of data are being obtained on precise instruments whose accuracy is unknown. To make these data more meaningful and universally applicable, the biases between instruments must be eliminated or at least determined. A major purpose of these filters will be to assure that systematic errors due to a particular characteristic or condition of an instrument can be recognized. This SRM costs \$300 per set of three filters.
- SRM 931 Liquid Filters for Spectrophotometry have been issued with a Certificate. This SRM consists of three sets of: three liquid filters and a blank, and have absorbances certified at 25 °C and at wavelengths 302, 395, 512, and 678 nm. These filters are intended to check the photometric scale of spectrophotometers and to provide a means of interlaboratory comparisons of spectrophotometric data. This SRM costs \$75 per set of 12 vials.

Category 3.44. Metallo-Organic Compounds

- SRM 1061c Magnesium cyclohexanebutyrate has been issued with a Provisional Certificate of Analysis. This SRM has a composition of 6.45 percent magnesium and costs \$31 per 5 g unit.
- SRM 1079b Tris(1-phenyl-1,3-butanediono)iron(III) has been issued with a Certificate of Analysis. It has a nominal composition of 10.45 percent iron and costs \$31 per 5 g unit.

Category 3.46. Botanical Standards

- SRM 1571 Orchard Leaves has been issued with a Provisional Certificate of Analysis. This SRM is the first of a series of botanical standards to be certified for chemical elements. This material is certified for the following elements: Ca, K, Fe, Na, Cd, Rb, Cu, Ni, Hg, Pb, N, Mg, P, As, B, Mn, Se, U, and Zn. This SRM costs \$68 per 75 g unit.

Category 3.50. Analyzed Solids

- SRM 1630 Trace Mercury in Coal has been issued with a Provisional Certificate of Analysis. This SRM provides a material of known mercury content which may be used to check the reproducibility and accuracy of methods used to determine mercury. The provisionally certified value of mercury content is 0.13 ppm. This SRM costs \$45 per 50 g unit.

Category 3.51. Analyzed Gases

- SRM 1604a Oxygen in Nitrogen has been issued with a Certificate of Analysis. The nominal concentration of oxygen in nitrogen is 1.5 ppm. This SRM is sold in cylinders containing 68 liters at STP for \$110 per cylinder.
- SRM 1610 - 1613 Certified Gas Standards (Hydrocarbon in Air) have been issued with a Certificate of Analysis. The nominal hydrocarbon concentration calculated as methane is:
- | | | | |
|----------|---------------------|----------|-----------------------|
| SRM 1610 | 0.103 mole percent | SRM 1612 | 0.00117 mole percent |
| 1611 | 0.0107 mole percent | 1613 | 0.000102 mole percent |
- These SRM's are sold in cylinders containing 68 liters at STP, for \$174 per cylinder.
- SRM 1625 - 1627 Sulfur Dioxide Permeation Tubes are intended for calibrating air pollution monitoring apparatus, and may be used also for the verification of air pollution analytical methods and procedures. SRM's 1625, 1626, and 1627 have effective lengths of 10, 5, and 2 cm, respectively. The permeation rate per cm of length is approximately $0.28\mu\text{g}$ of SO_2 per minute at 25°C . Each tube is individually calibrated and its permeation rate is certified over the temperature range of 20 to 30°C . These SRM's cost \$50 per unit.

Category 3.52. Analyzed Liquids

- SRM 1623 Sulfur in Residual Fuel Oil has been issued with a Provisional Certificate of Analysis. The certified value for the sulfur content is 0.268 wt. percent. This material costs \$30 per 100 ml unit.
- SRM 1624 Sulfur in Distillate Fuel Oil has been issued with a Provisional Certificate of Analysis. The certified value for the sulfur content is 0.211 wt. percent. This material costs \$30 per 100 ml unit.

Category 3.54. Ores

- SRM 79a Fluorspar has been issued with a Certificate of Analysis primarily for use as an assay standard for the evaluation of fluorspar imported for industrial use. The certified value of CaF_2 is 97.39 wt. percent. SRM 79a costs \$40 per 120 g unit.
- SRM 180 High Grade Fluorspar has been issued with a Certificate of Analysis. The certified value of CaF_2 is 98.8 wt. percent. This material has been issued for use by the geological and geochemical scientific community. SRM 180 costs \$40 per 120 g units.

Category 3.56. Minerals, Refractories, Carbides, and Glasses

SRM 610 - 619 Trace Elements in Glass standards have been issued. These materials consist of a soda lime glass, doped with some 61 elements at 0.02 ppm, 1 ppm, 50 ppm and 500 ppm levels. All of these materials are in the form of wafers and are homogeneous when used as integral samples. They are sold as follows:

SRM	Concentration	wafer thickness	No. of wafers	Cost
610	500 ppm	3 mm	6	\$ 50.00
611	500	1	6	50.00
612	50	3	6	50.00
613	50	1	6	50.00
614	1	3	6	50.00
615	1	1	6	50.00
616	.02	3	6	50.00
617	.02	1	6	50.00
618	set	3	24	150.00
619	set	1	24	150.00

SRM 620 Soda Lime glass plate has been issued with a Certificate of Analysis. The nominal composition is: SiO_2 72.1, Al_2O_3 1.8, CaO 7.0, MgO 3.6, Na_2O 14.0, K_2O 0.40, Fe_2O_3 0.043, TiO_2 0.018, SO_3 0.28, and As_2O_3 0.06. This material is available as a package of three plates for \$45.

Category 3.61. Nuclear Materials

SRM 945 Plutonium Metal Standard Matrix Material has been issued with a Certificate of Analysis. This material has been issued as a matrix material for the preparation of spectroscopy standards. The material costs \$500 per 5 g units.*

SRM 949c Plutonium Metal has been issued. This material is intended as a chemical assay standard for Plutonium. It costs \$123 per 0.5 g unit.*

SRM 953 Neutron density monitor wire described on page 44 of the Catalog of Standard Reference Materials, SP260, is now available in four lengths.

SRM	Length	Price
953	1 meter	\$ 39.00
953-L1	5 meters	96.00
953-L2	10 meters	167.00
953-L3	25 meters	381.00

SRM U-0002 Uranium oxide--depleted (U-235) has been issued with a Provisional Certificate of Analysis. It is a uranium isotopic standard consisting of highly purified U_3O_8 , and has a U-238 content of 99.9825 and U-235 content of 0.01733 by weight percent. It is intended for the calibration of mass spectrometers and costs \$58.50 per 1 g unit.*

SRM U-970 Uranium oxide--enriched (U-235) has been issued with a Provisional Certificate of Analysis. It is a uranium isotopic standard consisting of highly purified U_3O_8 , and has a U-238 content of 0.5296 and a U-235 content of 97.663 by weight percent. It is intended for the calibration of mass spectrometers and costs \$68.50 per 1 g unit.*

*These materials are available only to Atomic Energy Commission contractors and licensees. Order forms and further information may be obtained from the Office of Standard Reference Materials, Room B314, Chemistry Building, National Bureau of Standards, Washington, D.C. 20234.

Category 3.62. Isotopic Reference Standards

- SRM 984 Rubidium Chloride has been issued with a Certificate of Analysis. It is intended as both an assay standard and as an isotopic reference standard. As an assay standard it has a value for RbCl of 99.9 weight percent; and as an isotopic reference is certified for rubidium with an absolute abundance ratio of $^{85}\text{Rb}/^{87}\text{Rb}$ of 2.593. This SRM costs \$43 per 1 g unit.
- SRM 987 Strontium Carbonate has been issued with a Certificate of Analysis. It is intended as both an assay standard and as an isotopic reference standard. As an assay standard it has a value for SrCO_3 of 99.98 weight percent; and has an isotopic composition of $^{87}\text{Sr}/^{86}\text{Sr}$ of 0.71014 (normalized to $^{86}\text{Sr}/^{88}\text{Sr}$ of 0.1194). This SRM costs \$40 per 1 g unit.

Category 3.66. Ion Activity Standards

- SRM 186IIc Disodium hydrogen phosphate has been issued with a Certificate. It is intended as a pH standard for use in an admixture only with SRM 186Ic. It costs \$30 per 30 g unit.
- SRM 187b Borax has been issued with a Certificate. It is intended as a pH standard with a pH(s) value of 9.183 at 25 °C. It costs \$30 per 30 g unit.
- SRM 2201 - 2202 Sodium Chloride and Potassium Chloride have been certified as Ion-Selective Electrode Standard Reference Materials. These SRM's are the first of a series of materials to be certified for conventional single ionic-activities based on the Stokes-Robinson hydratic theory, which is applicable to ionic strengths greater than 0.1 mole per liter. By means of these SRM's researchers can now standardize their instruments on a common, conventional ionic-activity scale. SRM 2201 costs \$34 per 125 g unit; SRM 2202 costs \$34 per 160 g unit.

Category 4.1. Coating Thickness Standards

- SRM 2301 - 2308 Gold Coating Thickness Standards (copper clad glass epoxy laminate) have been issued and are certified for weight per unit area (thickness). They are available singly for \$66, in sets of two for \$109, and in sets of four for \$182.

SRM Nos.	Nominal Coating Wt. (mg/cm ²)	Nominal Thickness (micro inches)
2301	1.5	30
2302	3.0	60
2303	6.0	120
2304	14.0	280
2305	1.5 and 3.0	
2306	3.0 and 6.0	
2307	6.0 and 14.0	
2308	1.5, 3.0, 6.0 and 14.0	

SRM 2311 - Gold Coating Thickness Standards (on copper) have been issued and are Certified for weight per unit area (thickness). They are available singly for \$66, in sets of two for \$109, and in sets of four for \$182.

SRM Nos.	Nominal Coating Wt. (mg/cm ²)	Nominal Thickness (micro inches)
2311	1.5	30
2312	3.0	60
2313	6.0	120
2314	14.0	280
2315	1.5 and 3.0	
2316	3.0 and 6.0	
2317	6.0 and 14.0	
2318	1.5, 3.0, 6.0 and 14.0	

SRM 2331 - Tin Coating Thickness Standards (on steel) have been issued and are certified for weight per unit area (thickness). They are available singly for \$66. SRM 2336

SRM 2338 - 2338 (one each of 2332, 2335) is available for \$109; SRM 2339 (one each of 2331, 2333, 2334, 2336) is available for \$182; and SRM 2340 (one each of 2331, 2332, 2333, 2334, 2335, 2336) is available for \$261.

SRM No.	Nominal Coating Weight (mg/cm ²)	Nominal Thickness (microinches)
2331	1.1	60
2332	2.0	110
2333	3.0	160
2334	5.0	275
2335	12	650
2336	14	750

Category 4.5. Molecular Weight Standards

SRM 1475 Linear Polyethylene (Whole Polymer) has been issued with a Certificate for molecular weight, limiting viscosity number, melt-flow rate and density. This material is sold in pellet form for \$100 per 50 g unit.

SRM 1476 Branched Polyethylene (Whole Polymer) has been issued with a Certificate for limiting viscosity number and melt-flow rate. The material is sold in pellet form for \$75 per 50 g unit.

Category 4.21. Freezing and Melting Point Standards

SRM 742 Aluminum Oxide has been issued with a Certificate as a pyrometric standard with a melting point on the International Practical Temperature Scale (1968) of 2053 °C. This SRM costs \$62.50 per 10 g unit.

Category 4.22. Calorimetric Standards

SRM 720 Synthetic Sapphire (Al₂O₃) has been issued as a Standard Reference Material for calorimetry. The enthalpy and heat capacity of 99.95+ percent α-alumina are certified over a temperature range from 273.15 to 2250 K. SRM 720 costs \$56 per 15 g unit.

- SRM 755 Quartz (SiO_2) powder, prepared from natural quartz, has been Provisionally Certified for use in thermal analysis. It has a phase transition at approximately 575 °C and is sold as a powder (100-325 mesh), for \$35 per 2 g unit.
- SRM 756 Potassium Nitrate has been Provisionally Certified for use in thermal analysis. It has a phase transition at approximately 130 °C and is sold as a powder for \$35 per 5 g unit.
- SRM 758 - 760 Three sets of Differential Thermal Analysis (DTA) Temperature Standards have been issued with Certificates in cooperation with the International Confederation for Thermal Analysis (ICTA). These SRM's comprise a total of eight inorganic substances and two metals. Each of these SRM's cost \$45 and consist of five materials.

SRM 758 (125-435 °C)	SRM 759 (295-675 °C)	SRM 760 (570-940 °C)
KNO_3	-----	-----
In (metal)	-----	-----
Sn (metal)	-----	-----
KClO_4	KClO_4	-----
Ag_2SO_4	Ag_2SO_4	-----
-----	SiO_2	SiO_2
-----	K_2SO_4	K_2SO_4
-----	K_2CrO_4	K_2CrO_4
-----	-----	BaCO_3
-----	-----	SrCO_3

- SRM 1654 α -Quartz for Hydrofluoric Acid Solution Calorimetry has been issued with a Certificate. The certified value for the enthalpy of solution is: ΔH_{SOLN} (353.15K) in HF (aq, 24.4 wt %) = $-2362.2 \pm 1.1 \text{ J} \cdot \text{g}^{-1}$. This SRM costs \$175 per 25 g unit.

Category 4.23. Vapor Pressure Standards

- SRM 746 Cadmium vapor pressure standard has been issued with a Certificate of Analysis. Vapor pressure values for cadmium, 99.999+ percent pure, are given for the temperature range of 350 to 594 K. This SRM costs \$65 per unit.
- SRM 748 Silver vapor pressure standard has been issued with a Certificate of Analysis. Vapor pressure values for silver, 99.999+ percent pure, are given for the temperature range of 800 to 1600 K. This SRM costs \$75 per unit.

Category 4.24. Thermal Expansion Standards

- SRM 736 Copper thermal expansion standard has been issued with a Certificate of Analysis for thermal expansion ($\Delta L/L$) as a function of temperature in the range 20-800 K. This material is the first of a series covering the temperature range of 20 to 1900 K. It is available as a 6.4 mm diameter rod in 51, 102, and 152 mm lengths. Designated 736-L1, 736-L2, and 736-L3, respectively, they cost \$71, \$119, and \$167.
- SRM 739 Fused Silica thermal expansion standard has been issued with a Certificate of Analysis for thermal expansion ($\Delta L/L$) as a function of temperature in the range 80 to 1000 K. This material is available as a 6.4 mm diameter rod in 51, 102, and 152 mm lengths. Designated 739-L1, 739-L2, and 739-L3, respectively, they cost \$71, \$119, and \$167.

Category 4.25. Thermal Conductivity Standards

- SRM 734 Electrolytic Iron has been issued with a Certificate for thermal conductivity (λ) as a function of temperature in the range 6 to 280 K. This material is the first of a series of thermal conductivity SRM's to be issued. The material is available in three sizes: 734-S is a rod 6.4 mm in diameter and 305 mm long, and costs \$75. 734-L1 is a rod 31.8 mm in diameter and 152 mm long, and costs \$85. 734-L2 is a rod 31.8 mm in diameter and 305 mm long, and costs \$150.
- SRM 735 Stainless Steel has been issued with a Certificate for thermal conductivity (λ) as a function of temperature in the range 5 to 280 K. This material is available in five sizes: SRM 735-S is a rod 0.65 cm in diameter and 30 cm long, and costs \$75; SRM's 735 M1 and M2 are rods 1.25 cm in diameter and 15 and 30 cm long, respectively, and cost \$100 and \$150; SRM's 735 L1 and L2 are rods 3.5 cm in diameter and 5 and 10 cm long, respectively, and cost \$125 and \$175.

Category 4.26. Thermocouple Materials

- SRM 733 Silver-28% Gold, thermocouple wire has been issued with a Certificate. This SRM is for use in comparing manufactured wire with standard reference tables. SRM 733 is sold as 32 AWG wire (0.2019 mm) three meters long for \$85.

Category 4.45. Reflectance Standards

- SRM 2001 - 2004 Aluminum on Glass have been issued with a Certificate for Specular Spectral Reflectance. Each mirror is certified for near-normal (5°) specular reflectance at wavelengths ranging from 0.2537 to 30 micrometers and corresponding resolved bandwidths from 1.0 to 1800 nanometers. These SRM's cost \$275 each.

SRM No.	Size of blank (cm)	Coated Area (cm)
2001	7.6 × 10.2 × 1.6	5.1 × 7.6
2002	3.8 × 3.8 × 1.3	2.5 × 2.5
2003	disk: 2.9 diameter × 1.0 thick	entire surface
2004	disk: 2.4 diameter × 0.6 thick	entire surface

- SRM 2005 - 2008 Gold on Glass have been issued with a Certificate for Specular Spectral Reflectance. Each mirror is certified for near-normal (5°) specular reflectance at wavelengths ranging from 0.2537 to 30 micrometers and corresponding resolved bandwidths from 1.0 to 1800 nanometers. These SRM's cost \$275 each.

SRM No.	Size of blank (cm)	Coated Area (cm)
2005	7.6 × 10.2 × 1.6	5.1 × 7.6
2006	3.8 × 3.8 × 1.3	2.5 × 2.5
2007	disk: 2.9 diameter × 1.0 thick	entire surface
2008	disk: 2.4 diameter × 0.6 thick	entire surface

Category 4.51. Radioactivity Standards

- SRM 4201-B Gamma-Ray "Point-Sources" — have been issued with Certificates. The materials, approximate activities and prices are listed below:

4201-B	Niobium 94	5×10^3 ntps	\$151.60
4211	Americium-241	1 to 6×10^4 ntps	127.50
*4212	Krypton-88	6.5 to 37×10^6 ntps	160.00
*4213	Americium-241	7 to 20×10^4 ntps	127.50

SRM 4228 Selenium-75 has been issued with a Certificate. The activity is 2.54×10^5 (3/71) nuclear transformations per second (ntps) per gram of solution. The material is issued in a flame sealed glass ampoule containing approximately 4.6 grams of solution and costs \$118.*

SRM 4929-C Iron-55 has been issued with a Certificate. The activity is 7.8×10^4 (4/70) nuclear transformations per second (ntps) per gram of solution. The material is issued in a flame sealed glass ampoule containing approximately 3.9 grams of solution and costs \$115.

SRM 4904-D Americium-241 Alpha activity standard has been issued with a Certificate. The standard consists of Americium-241, electroplated onto a 0.010 centimeter thick platinum foil, 1.6 cm in diameter, which is cemented to a monel disk, 2.5 cm in diameter, and 0.16 cm thick. The nominal activity level of this material is 2×10^3 to 5×10^4 nuclear transformations per second (ntps) (2/70) and costs \$124 per standard.

*These samples can be issued only to those persons who hold specific By-product Material License from the AEC. Please attach copy of current license to purchase order.

Category 4.61. Metallurgical Standards

SRM 485 Austenite in Ferrite primarily for use in calibrating x-ray diffraction equipment, is available in disk form, 21 mm in diameter and 2.5 mm thick. This SRM contains four percent austenite, nominally. The actual certified amount is given on each disk (to the nearest 0.1 percent), and is considered accurate to ± 0.2 percent. SRM 485 costs \$85 per disk.

SRM 493 Spheroidized Iron Carbide (Fe_3C) in Ferrite primarily used in calibrating x-ray diffraction equipment, is in wafer form, 29 mm square and 2.5 mm thick. The Certificate states that the probability is about 95 percent that the average iron carbide concentration in any wafer is 14.23 ± 0.30 percent by volume. SRM 493 costs \$85 per wafer.

Category 4.86. Mossbauer Standards

SRM 1541 Iron foil has been issued with a Certificate of Calibration for Mossbauer spectrometry. SRM 1541 costs \$150 each.

Category 4.87. Permittivity Standards

SRM 1511 - 1513 Cyclohexane (1511), 1,2-Dichloroethane (1512), and Nitrobenzene (1513) have been issued with Certificates for Dielectric constant at 20, 25, and 30 °C. These materials are sold as one pint (0.47 liter) units--1511 for \$125; 1512, \$120; and 1513, \$120.

SRM 1516 - 1519 Permittivity standards have been issued with Certificates. These SRM's are for use in calibrating systems for measuring permittivity and related dielectric quantities. Each SRM is individually identified and certified. They cost \$193 per unit. The sizes are:

1516, 38 mm in diameter and 2.5 mm thick
1517, 38 mm in diameter and 5 mm thick
1518, 51 mm in diameter and 2.5 mm thick
1519, 51 mm in diameter and 5 mm thick

Category 5.1. Standard Rubbers and Rubber Compounding Materials

- SRM 373f Benzothiazyl disulfide is now available as a rubber-compounding material. It is issued for use on testing rubber-compounding materials in connection with quality control of raw materials and for the standardization of rubber testing. This SRM costs \$40 per 2 kg unit.
- SRM 374c Tetramethylthiuram Disulfide is now available as a rubber-compounding material. It is issued for use in testing rubber-compounding materials in connection with quality control of raw materials and for the standardization of rubber testing. This SRM costs \$40 per 2 kg unit.

Category 5.3. Sizing Standards

- SRM 1017a Glass beads have been issued with a Certificate for particle size. This material is intended for calibrating Sieve Nos. 50-140. SRM 1017a costs \$40 per 84 g unit.

Category 5.4. Color Standards

- SRM 700c Light-Sensitive Paper (700c) and Standard Faded Strips (701c) have been issued as renewals of SRM's 700b and 701b. SRM 700c is a packet of 100 pieces of light sensitive paper, and is issued without a certificate. SRM 701c is a booklet of six faded strips of paper from the same lot as SRM 700c that have been faded by exposure to the NBS master lamp. SRM 701c is issued with a Certificate and an NBS Special Publication describing the preparation and use of these materials. SRM 700c costs \$40 per package; SRM 701c costs \$155 per booklet.

[NOTE: Because of variations in the paper from one lot to another, the "c" series cannot be used interchangeably with earlier series, i.e., 700c cannot be used with 701, 701a, or 701b, or vice versa.]

Category 5.50. Miscellaneous Standards

- SRM 1006 Smoke density standard, non-flaming, has been issued with a Certificate. This SRM consists of three sheets of cotton-linter paper (principally α -cellulose) for calibrating the Smoke-Density Chamber under non-flaming exposure conditions. SRM 1006 costs \$32 per unit.
- SRM 1007 Smoke density standard, flaming, has been issued with a Certificate. This SRM consists of three sheets of plastic for calibrating the Smoke-Density Chamber under flaming exposure conditions. SRM 1007 costs \$30 per unit.
- SRM 1009 Photographic step tablet has been certified for 21 steps that cover the density range of 0 to 3. SRM 1009 costs \$54 per step tablet.

Category 6.0. Research Materials

A new class of materials is now being issued to meet the needs of scientists engaged in materials research. Designated Research Materials (RM's), these are in addition to and distinct from the Standard Reference Materials issued by NBS. The distinctions between Research Materials and Standard Reference Materials are in the information supplied with them and purpose for which they are used. Unlike SRM's, the RM's are not issued with Certificates of Analysis; rather they are accompanied by a "Report of Investigation," the sole authority of which is the author of the report. A Research Material is intended primarily to further scientific or technical research on that particular material. One of the principal considerations in issuing an RM is to provide homogeneous material so that an investigator in one laboratory can be assured that the material he has is the same as that being investigated in a different laboratory.

- RM-1C Ultra-purity aluminum single crystal cubes (1 cm on a side) are intended for use in studies of a variety of solid state phenomena for which both extreme purity and knowledge of crystallographic orientation are required; e.g., in studies of electron spin resonance, De Haas-Van Alphen effect, cyclotron resonance, etc., and in a variety of studies relating to the Fermi surface and the transport properties of aluminum. RM-1C costs \$90 per unit.
- RM-1R Ultra-purity aluminum polycrystalline rods (4.2 mm in diameter and 25.4 mm long) are intended for use in research on the mechanical and physical properties of extremely pure aluminum: for example, in the determination of resistivity as a function of strain at cryogenic temperatures to facilitate the design of cryogenic magnets or superconductor stabilizing elements. RM-1R costs \$50 per unit.

Category 7.0. General Materials

Another new class of materials now being distributed by NBS to meet industry needs is General Materials (GM's). These materials have been standardized either by some Government agency other than NBS, or by some standards-making body such as the American Society for Testing and Materials (ASTM), the American National Standards Institute (ANSI), and the Organization for International Standardization (ISO). For this class of materials, NBS acts only as a distribution point and does not participate in the standardization of these materials.

- GM-1 Hydrogen in Steel Standards are distributed in the United States by NBS. These standards were produced and certified by The Welding Institute in Cambridge, England. GM-1 is a set of 15 cylinders, 5 each of H1, H2, and H3, containing nominally 0.05, 0.10, and 0.20 ml hydrogen, respectively. The cylinders are 6.35 mm in diameter and about 30 mm long, weighing approximately 6 grams. GM-1 costs \$86 per set.
- GM-2 Hydrogen in Steel Standards are distributed in the United States by NBS. The standards were produced and certified by The Welding Institute in Cambridge, England. GM-2 is a set of 15 cylinders, 5 each of H4, H5, and H6, containing nominally 0.20, 0.60, and 1.10 ml hydrogen, respectively. The cylinders are 12.7 mm in diameter and about 30 mm long, weighing approximately 22 grams. GM-2 costs \$86 per set.
- GM-2007 Attapulugus clay is distributed by NBS on request of the ASTM Committee D-2007. It is an adsorbant type clay, 30 to 60 mesh, having adsorptive characteristics as specified by ASTM D-2007. *(This material is temporarily out of stock.)*

SECTION IIIa

CERTIFICATES

In general, Provisional Certificates are issued for Standard Reference Materials before all of the values have been certified, but after a sufficient number of values are certified so that the material is a valuable standard for the intended purpose. As additional values are certified, the Provisional Certificate may be revised and when and if all of the values are certified, the final Certificate is issued.

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 B314, Chemistry Building, National Bureau of Standards, Washington, D. C. 20234.

SRM	Type	Certificate Date
4j	Iron, Cast	1-25-71
5L	Iron, Cast	11-9-70
6g	Iron, Cast	11-9-70
42f	Tin, freezing-point std.	12-6-71
44e	Aluminum, freezing-point std.	12-6-71
45d	Copper, freezing-point std.	12-6-71
49e	Lead, freezing-point std.	12-6-71
114L	Cement, turbidimetric and fineness std.	2-15-71
124d	Bronze (Cu85-Pb5-Sn5-Zn5) ounce metal	11-6-70
148	Nicotinic acid	12-22-70
196	Ferrochromium (low carbon)	11-9-70
340	Ferroniobium	11-9-70
682	Zinc, high-purity	2-1-71
725	Mossbauer differential chemical shift	3-1-71
948	Plutonium sulfate hydrate	12-11-70
1138	Steel, cast 1	7-13-70
1139	Steel, cast 2	7-13-70
1265	Iron, electrolytic, disk	8-6-71
1571	Orchard leaves	10-1-71
3200	Tape, magnetic, secondary std.	5-5-71

SECTION IIIb

MATERIALS OUT OF STOCK

The materials listed below have gone out of stock since the latest catalog (7/70) 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 Nos.	Type	Comments
8i	Steel, Bessemer 0.1C	Renewed with 8j
28a	Iron Ore, Norrie	
52c	Cast Bronze	To be renewed
113	Zinc Ore	To be renewed
121c	Steel, Cr18-Ni10(Ti bearing)(SAE 321)	Renewed with 121d
126b	Ni 36 (High Nickel)	To be renewed
132a	Steel, Mo5-W6-Cr4-V2	To be renewed
186IIb	Disodium Hydrogen Phosphate	Renewed with 186IIc
187a	Borax	Renewed with 187b
373e	Benzothiazyl disulfide	Renewed with 373f
654	Ti Alloy, 6Al-4V(B)	Renewed with 654a
700b	Light-Sensitive Paper	Renewed with 700c
701b	Standard Faded Strips	Renewed with 701c
727	Rubidium Chloride	Replaced by 984
836	Steel, Special (Cr6-Mo3-W10)	Discontinued, 436 and D836 have the same composition
847	Steel, Cr 24-Ni 13	Discontinued, 447 and D847 have the same composition
1061b	Magnesium Cyclohexanebutyrate	Renewed with 1061c
1079a	Tris(1-phenyl-1,3-butanediono)Iron III	Renewed with 1079b
C1100	Cartridge Brass A	Discontinued
1163	Low Alloy Steel C	Replaced by 1200 series
1168	Low Alloy Steel H	Replaced by 1200 series
1170	Selenium Steel	To be renewed
1174a	White Cast Iron (Special 1)	Discontinued, see 1140 to 1144 and 1147 to 1149
1175a	White Cast Iron (Special 2)	Discontinued, see 1140 to 1144 and 1147 to 1149
1194	A286 High Temperature Alloy	Discontinued, see 1206-2 to 1209
1604	Oxygen in Nitrogen	Renewed with 1604a
4203A	Cobalt 60, point source	
4208	Mercury 203, Gamma Std.	
4225	Tin 113-Indium 113	
4900	Polonium-210, alpha particle*	*Available on request to Radioactivity Section, Room C114, Radiation Physics Bldg., Washington, D. C. 20234
4901	Polonium-210, alpha particle*	
4902	Polonium-210, alpha particle*	
4924	Carbon 14 (water)	
4929B	Iron 55	Renewed with 4929C
4995C	Mercury 203, point source	
4997D	Manganese 54, point source	
4999D	Cerium 139, point source	

SECTION IV

CHANGES IN PURCHASE PROCEDURE

ORDERING

GENERAL

Orders should be addressed to the Office of Standard Reference Materials, National Bureau of Standards, Washington, D.C. 20234. Telephonic or telegraphic communications should be addressed to the attention of the Office of Standard Reference Materials, (Telephone 301-921-2045). Orders should give the amount (number of units), catalog number and name of the standard requested. For example: 150 g (1 unit) of No. 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, practice, or regulations of the National Bureau of Standards or the U.S. Government. Prices listed herein are subject to change without notice. Price changes when made are first announced in various NBS publications, especially the Technical News Bulletin, and in announcements mailed to users of these materials.

Prices in effect at time of shipment will be billed to the purchaser. No discounts are given on NBS Standard Reference Materials.

To provide better service to users of SRM's our name-label files are periodically updated and/or corrected. If your name and address are not correct, please return the name-label portion of the envelope and indicate the corrections. Send it and all other inquiries to:

Office of Standard Reference Materials
Room B314, Chemistry Building
National Bureau of Standards
Washington, D.C. 20234

FOREIGN ORDERS

A. Prepaid orders will be processed, subject to export-import regulations of the United States and the country from which the order originates, and shipped within 5 days provided export or import license is not required. (See mode of shipment-- Foreign Shipments.) Prepayment may be made by any of the following:

1. UNESCO coupons;
2. Bankers' draft against U.S. bank;
3. Bank to bank transfer on U.S. bank;
4. Letter of credit on a U.S. bank;
5. International Money Order.

All checks, coupons, etc., should be made payable to the National Bureau of Standards and must be in U.S. dollars.

B. Non-prepaid purchase orders from customers with established credit will be processed within 10 days. Variations in prices and quantities shipped will be noted on invoices. Upon receipt of goods, payment can be made by any of the methods listed under A.

C. Pro-forma service, subject to export-import regulations, may require 60 days or more for processing. Customers are urged to use method A or B whenever possible for fast service and to supply all necessary import documents and information with their order. Payment may be by any of the means shown under A above.

TERMS AND SHIPPING

DOMESTIC SHIPMENTS

Shipments of material (except for certain restricted categories, e.g., hydrocarbons, organic sulfur compounds, special nuclear materials, compressed gases and radioactive standards) intended for the United States, Mexico, and Canada are normally shipped prepaid air parcel post (providing that the parcel does not exceed the weight limits as prescribed by Postal Laws and Regulations) unless the purchaser requests a different mode of shipment, in which case the shipment will be sent collect. It is impractical for the Bureau to prepay shipping charges and add this cost to the billing invoice. Hydrocarbons, organic sulfur compounds, compressed gases, rubber compounding materials, radioactive standards and similar materials are shipped express collect.

FOREIGN SHIPMENTS

Both prepaid and non-prepaid orders will be shipped by prepaid International Air Parcel Post, subject to size, weight, and category of material limitations. Any other mode of shipment requested by customer must be paid for by the customer. Shipments excluded from International Air Parcel Post for any reason, 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 via express collect to the U.S. firm designated as agent. NOTE: Nuclear SRM's will not be shipped through an agent, they will be shipped direct.

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