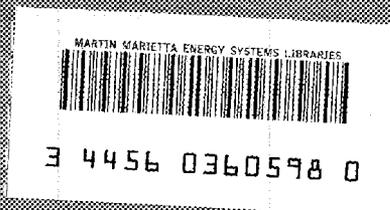


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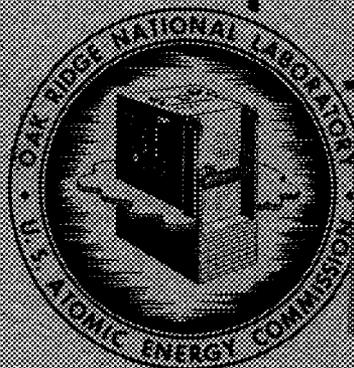
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ELECTROMAGNETICALLY

ENRICHED ISOTOPES

INVENTORY, APRIL 30, 1952



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ELECTROMAGNETICALLY ENRICHED ISOTOPES

Inventory, April 30, 1952

C. P. Keim
C. E. Normand
Boyd Weaver

April 30, 1952

ISOTOPE RESEARCH AND PRODUCTION DIVISION
C. P. Keim, Director

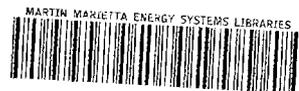
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ABSTRACT

This inventory lists the isotopes which have been concentrated electromagnetically, along with the completed information on their enriched abundances, and the element weights and product forms available in milligram quantities to users on Atomic Energy Commission projects and in university and industrial laboratories.

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74	Tungsten-----	64
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UNCLASSIFIEDINTRODUCTION

This report of electromagnetically enriched isotopes is revised frequently to include all isotopes which are available for use, or are in the process of chemical refinement. The most recent information on the isotopic abundance of each enriched sample and the amount of each isotope in the inventory is also listed. The list also includes those isotopes which have been concentrated but are not available at present.

All weights reported are element weights converted from compound weights by standard gravimetric factors.

On all shipments material will be shipped in the product form shown unless special arrangements are made for further chemical processing.

Isotopic abundance data not in this report, such as concentrations of other isotopes in the sample, will be submitted upon request. Spectrographic analyses and complete isotopic abundance data will be forwarded with all shipments or as soon as available.

Any users of isotopes who need mass analysis services should check with the Isotopes Division of the A. E. C. regarding their specific needs.

Isotopes produced by the electromagnetic process are available in milligram quantities for distribution on loan within and outside of the Atomic Energy Commission and may be requested by using A. E. C. form 100. Copies of this form may be obtained from the Isotopes Division, U. S. Atomic Energy Commission, P. O. Box "E", Oak Ridge, Tennessee.

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Users of Stable Isotopes who need extensions of their loan periods should write The Isotopes Division, Atomic Energy Commission, Oak Ridge, Tennessee.

All purchase orders are to be sent to Dr. C. P. Keim, Oak Ridge National Laboratory, Y-12 Area, Oak Ridge, Tennessee.

SUMMARY OF PRODUCTION AND SHIPMENTS

<u>Atomic No.</u>	<u>Element</u>	<u>Production Completed</u>	<u>No. of Samples Now Available For Shipment</u>	<u>No. of Individual Shipments Made</u>
3	Lithium	24	10	68
4	Beryllium	2	0	2
5	Boron	3	3	2
6	Carbon	3	2	2
8	Oxygen	2	0	0
12	Magnesium	17	15	33
14	Silicon	9	8	21
16	Sulfur	9	6	14
17	Chlorine	3	2	5
19	Potassium	31	22	44
20	Calcium	39	19	31
22	Titanium	14	10	37
23	Vanadium	3	2	2
24	Chromium	14	9	45
26	Iron	79	64	54
28	Nickel	24	14	53
29	Copper	13	11	21
30	Zinc	16	11	32
31	Gallium	2	2	8
32	Germanium	6	4	16
34	Selenium	47	43	46
35	Bromine	2	2	0
37	Rubidium	2	2	3
38	Strontium	14	8	27
40	Zirconium	27	24	47
42	Molybdenum	29	25	71
47	Silver	8	8	15
48	Cadmium	19	18	61
49	Indium	12	8	22
50	Tin	53	34	103
51	Antimony	4	2	18
52	Tellurium	42	34	77
56	Barium	7	4	25
57	Lanthanum	2	2	3
58	Cerium	13	8	17
60	Neodymium	7	5	35
62	Samarium	14	13	44
72	Hafnium	6	6	28
74	Tungsten	18	17	33
75	Rhenium	2	2	11
80	Mercury	40	35	61
81	Thallium	16	16	19
82	Lead	29	25	54
	TOTAL	726	519	1,310

Natural Isotopic Abundance:

Li 6 - 7.43%

Li 7 - 92.57%

Lithium
Atomic No. 3

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Li 6	H	23(a)	93.91	0	
Li 6	I	25(a)	87.76	0	
Li 6	AR	139(a)	95.5	0	
Li 6	BQ	264(a)	95.4	0	
Li 6	CT	376(a)	99.4	0	
Li 6	CU	378(a)	98.8	0	
Li 6	DV	499(a)	98.32	0	
Li 6	ED	537(a)	95.2	173	Li ₂ SO ₄
Li 6	ED	537(b)	95.5	130	Li ₂ SO ₄
Li 6	EZ	627(e)	88.22	12	Li ₂ SO ₄
Li 6	FI	667(a)	94.07	25	Li ₂ SO ₄
Li 6	FI	667(b)	94.29	0	LiF
Li 6	FI	667(c)	91.75	0	
Li 6	FI	667(d)	93.39	585	Li ₂ SO ₄
Li 7	H	24(a)	99.89	0	
Li 7	I	26(a)	99.91	10	Li ₂ SO ₄
Li 7	AR	140(a)	99.5	711	Li ₂ SO ₄
Li 7	BQ	265(a)	99.8	0	

Natural Isotopic Abundance:

Li 6 - 7.43%

Li 7 - 92.57%

Lithium (cont'd)
Atomic No. 3

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Li 7	BQ	265(ar)	99.8	216	Li ₂ SO ₄
Li 7	CT	377(a)	99.6	0	LiF
Li 7	CU	379(a)	98.4	2,545	Li ₂ SO ₄
Li 7	DV	500(a)	99.58	0	
Li 7	ED	538(a)	99.87	0	
Li 7	EZ	628(e)	99.86	8,168	Li ₂ SO ₄

Natural Isotopic Abundance:

B 10 - 18.83%

B 11 - 81.17%

Boron
Atomic No. 5

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
B 10	DP	481(a)	Analysis Incomplete	25	H ₃ BO ₃
B 11	EM	250(a)	Analysis Incomplete	10	H ₃ BO ₃
B 11	DP	482(a)	Analysis Incomplete	200	H ₃ BO ₃

Natural Isotopic Abundance:

C 12 - 98.91%

C 13 - 1.09%

Carbon
Atomic No. 6

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
C 12	FD	638(ah)	99.963	0	
C 12	FD	638(ai)	Analysis Incomplete	8,400	C
C 12	FD	638(aj)	99.945	9,900	C

Natural Isotopic Abundance:				Magnesium Atomic No. 12	
Mg 24 - 78.98%					
Mg 25 - 10.03%					
Mg 26 - 10.99%					
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Mg 24	P	47(a)	99.5	1,570	MgO
Mg 24	Q	50(a)	98.36	192	MgO
Mg 24	BZ	288(a)	99.52	2,527	MgO
Mg 24	BZ	288(b)	99.2	132	MgO
Mg 24	BZ	288(c)	99.5	2,251	MgO
Mg 24	BZ	288(d)	99.4	1,786	MgO
Mg 24	DZ	519(a)	99.59	3,478	MgO
Mg 25	P	48(a)	83.22	0	
Mg 25	P	48(ar)	83.22	515	MgO
Mg 25	Q	51(a)	62.59	20	MgO
Mg 25	Q	51(b)	65.67	14	MgO
Mg 25	BZ	289(a)	86.8	195	MgO
Mg 25	DZ	520(a)	92.33	1,490	MgO
Mg 26	P	49(a)	96.16	416	MgO
Mg 26	Q	52(a)	97.00	0	
Mg 26	BZ	290(a)	95.91	213	MgO
Mg 26	DZ	521(a)	98.12	804	MgO

Natural Isotopic Abundance:

Silicon
Atomic No. 14

Si 28 - 92.17%

Si 29 - 4.71%

Si 30 - 3.12%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Si 28	AI-AJ	103-106(a)	99.4	1,796	SiO ₂
Si 28	BW	280(a)	98.1	7,510	SiO ₂
Si 28	EB	524(a)	99.16	9,041	SiO ₂
Si 29	AI-AJ	104-107(a)	68.6	13	SiO ₂
Si 29	BW	281(a)	63.6	0	
Si 29	EB	525(a)	68.62	90	SiO ₂
Si 30	AI-AJ	105-108(a)	63.9	100	SiO ₂
Si 30	BW	282(a)	49.6	550	SiO ₂
Si 30	EB	526(a)	64.04	48	SiO ₂

Natural Isotopic Abundance:			Sulfur Atomic No. 16		
S 32	-	94.89%			
S 33	-	0.80%			
S 34	-	4.29%			
S 36	-	0.02%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
S 32	CX	391(a)	97.90	215	S
S 32	ES	596(a)	98.45	7,463	CaS
S 33	CX	392(a)	5.54	0	
S 33	CX	392(b)	5.54	30	S
S 33	ES	597(a)	9.8	0	
S 34	CX	393(a)	20.65	0	
S 34	CX	393(b)	5.38	59	S
S 34	ES	598(a)	14.92	1,099	CaS
S 36	ES	599(a)	0.88	27	CaS

Natural Isotopic Abundance:

Chlorine
Atomic No. 17

Cl 35 - 75.4%

Cl 37 - 24.6%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	SHIPMENT Product Form
Cl 35	AV	161(c1)	79.5	18	AgCl
Cl 35	DH	436(a)	92.4	0	
Cl 37	DH	438(a)	65.6	248	AgCl

Natural Isotopic Abundance:

Potassium
Atomic No. 19

K 39 - 93.25%
 *K 40 - 0.011%
 K 41 - 6.71%

Electromagnetically Concentrated Isotopes

*Radioactive

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT	
				Element Weight (milligrams)	Product Form
K 39	W	67(a)	99.93	0	
K 39	BJ	237(a)	99.5	1,592	KClO ₄
K 39	CM	346(a)	99.9	35	KCl
K 39	CM	346(ar)	99.9	9,920	KCl
K 39	DA	407(a)	99.94	19,428	K ₂ SO ₄
K 39	DB	410(a)	99.74	5,659	KCl
K 39	DT	494(a)	99.89	9,384	KCl
K 39	EX	621(g)	99.96	18,470	KCl
K 39	EY	624(i)	99.94	24,977	KCl
K 39	FA	629(a)	99.83	10,473	KCl
K 40	W	68(a)	0.16	0	
K 40	BJ	238(a)	0.40	0	
K 40	CM	347(a)	0.14	0	
K 40	CM	347(ar)	0.14	0	
K 40	DA	408(a)	13.1	10	KCl
K 40	DB	411(a)	0.40	150	KCl
K 40	DB	411(ar)	0.40	318	KCl

Natural Isotopic Abundance:

Potassium (cont'd)
Atomic No. 19

K 39 - 93.25%

*K 40 - 0.011%

K 41 - 6.74%

Electromagnetically Concentrated Isotopes

*Radioactive

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT	
				Element Weight (milligrams)	Product Form
K 40	DT	495(a)	7.13	0	
K 40	EX	622(u)	3.64	7	KCl
K 40	EY	625(t)	7.75	10	K ₂ SO ₄
K 40	FA	630(a)	0.978	33	KCl
K 41	W	69(a)	88.36	0	
K 41	BJ	239(a)	92.9	65	KClO ₄
K 41	CM	348(a)	86.8	37	KCl
K 41	DA	409(a)	95.45	0	
K 41	DB	412(a)	91.61	0	
K 41	DT	492(a)	98.94	705	KCl
K 41	DT	496(ar)	98.94	65	KCl
K 41	EX	623(e)	99.20	69	KCl
K 41	EY	626(e)	99.21	750	KCl
K 41	FA	631(a)	87.75	540	KCl

Natural Isotopic Abundance:				Calcium Atomic No. 20	
Ca 40 - 96.96%		Ca 46 - 0.0033%			
Ca 42 - 0.64%		Ca 48 - 0.185%			
Ca 43 - 0.145%					
Ca 44 - 2.06%					
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ca 40	V	61(a)	99.95	0	
Ca 40	V	61(b)	98.6	114	CaO
Ca 40	X	70(a)	99.97	1,048	CaO
Ca 40	BN	251(a)	98.9	5,825	CaCO ₃
Ca 40	DI	441(d)	99.83	35,259	CaCO ₃
Ca 40	EV	613(a)	Analysis Incomplete	28,720	CaCO ₃
Ca 40	FF	648(a)	99.98	44,756	CaCO ₃
Ca 40	FO	689(a)	Refinement Incomplete		
Ca 42	BN	252(a)	56.1	0	
Ca 42	DI	442(b)	28.3	393	CaCO ₃
Ca 42	EV	614(a)	Analysis Incomplete	210	CaCO ₃
Ca 42	FF	649(a)	Analysis Incomplete	439	CaCO ₃
Ca 42	FO	690(a)	Refinement Incomplete		
Ca 43	V-X	63-72(a)	34.4	0	
Ca 43	BN	253(a)	59.9	0	
Ca 43	DI	443(b)	37.56	0	
Ca 43	EV	615(a)	Analysis Incomplete	0	
Ca 43	FF	650(a)	Analysis Incomplete	78	CaCO ₃

Natural Isotopic Abundance:

Ca 40 - 96.96%	Ca 46 - 0.003%
Ca 42 - 0.64%	Ca 48 - 0.185%
Ca 43 - 0.154%	
Ca 44 - 2.06%	

Calcium
Atomic No. 20

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ca 43	FO	691(a)	Refinement Incomplete		
Ca 44	V	64(a)	95.8	0	
Ca 44	X	73(a)	21.1	0	
Ca 44	BN	254(a)	85.4	40	CaCO ₃
Ca 44	CS	373(a)	96.2	85	CaCO ₃
Ca 44	DI	444(a)	91.9	134	CaCO ₃
Ca 44	EV	616(a)	Analysis Incomplete	723	CaCO ₃
Ca 44	FF	651(a)	Analysis Incomplete	1,143	CaCO ₃
Ca 44	FO	692(a)	Refinement Incomplete		
Ca 46	V-X	65-74(a)	7.3	0	
Ca 46	CS	374(a)	4.8	0	
Ca 46	DI	445(a)	1.45	0	
Ca 46	EV	617(a)	Analysis Incomplete	0	
Ca 46	FF	652(a)	10.16	0	
Ca 46	FO	693(a)	Refinement Incomplete		
Ca 48	V-X	66-75(a)	13.1	0	
Ca 48	BW	256(a)	83.9	0	
Ca 48	CS	375(a)	62.2	0	

Natural Isotopic Abundance:				Calcium Atomic No. 20	
Ca 40 - 96.96%		Ca 46 - 0.0033%			
Ca 42 - 0.64%		Ca 48 - 0.185%			
Ca 43 - 0.145%					
Ca 44 - 2.06%					
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ca 48	DI	446(a)	42.32	0	
Ca 48	EV	618(a)	Analysis Incomplete	0	
Ca 48	FO	694(a)	Refinement Incomplete		
Ca 48	FF	653(a)	7.49	58	CaCO ₃

Natural Isotopic Abundance:			Titanium Atomic No. 22		
Ti 46	-	7.97%			
Ti 47	-	7.41%			
Ti 48	-	73.50%			
Ti 49	-	5.64%			
Ti 50	-	5.48%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ti 46	BF	215(a)	84.26	0	
Ti 46	BF	215(ar)	84.26	83	TiO ₂
Ti 46	EN	576(a)	82.68	309	TiO ₂
Ti 47	BF	216(a)	82.05	8	TiO ₂
Ti 47	BF	216(ar)	82.05	99	TiO ₂
Ti 47	EN	577(a)	63.11	944	TiO ₂
Ti 48	BF	217(a)	99.23	50	TiO ₂
Ti 48	EN	578(a)	98.90	22,908	TiO ₂
Ti 49	BF	218(a)	77.62	37	TiO ₂
Ti 49	BF	218(ar)	77.62	55	TiO ₂
Ti 49	EN	579(a)	77.27	0	
Ti 50	BF	219(a)	84.69	0	
Ti 50	BF	219(ar)	84.69	0	
Ti 50	EN	580(a)	81.44	395	TiO ₂

Natural Isotopic Abundance:

Vanadium
Atomic No. 23

V 50 - 0.28%

V 51 - 99.72%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
V 50	FM	683(b)	Analysis Incomplete	0	
V 51	FB	633(a)	Analysis Incomplete	2,500	V ₂ O ₅
V 51	FM	685(a)	Analysis Incomplete	26,250	V ₂ O ₅

Natural Isotopic Abundance:				Chromium Atomic No. 24	
Cr 50	-	4.40%			
Cr 52	-	83.73%			
Cr 53	-	9.49%			
Cr 54	-	2.38%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Cr 50	D	10(a)	73.76	0	
Cr 50	CD	309(a)	41.2	0	
Cr 50	CD	309(ar)	41.2	0	
Cr 50	EU	609(a)	88.3	594	Cr ₂ O ₃
Cr 52	D	11(a)	99.14	510	Cr ₂ O ₃
Cr 52	D	11(ar)	99.14	140	Cr ₂ O ₃
Cr 52	CD	310(a)	99.1	3,259	Cr ₂ O ₃
Cr 52	EU	610(a)	97.1	23,140	Cr ₂ O ₃
Cr 53	D	12(a)	88.59	113	Cr ₂ O ₃
Cr 53	CD	311(a)	92.1	115	Cr ₂ O ₃
Cr 53	EU	611(a)	90.06	447	Cr ₂ O ₃
Cr 54	D	13(a)	61.0	0	
Cr 54	CD	312(a)	83.1	0	
Cr 54	EU	612(a)	88.95	105	Cr ₂ O ₃

Natural Isotopic Abundance:

Fe 54 - 5.90%

Fe 56 - 91.52%

Fe 57 - 2.24%

Fe 58 - 0.34%

Iron
Atomic No. 26

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Fe 54	B	3(a)	55.47	57	Fe ₂ O ₃
Fe 54	B	3(f)	39.0	268	Fe ₂ O ₃
Fe 54	C	6-I(a)	42.85	195	Fe ₂ O ₃
Fe 54	C	6-II(a)	38.99	0	
Fe 54	E	14(a)	81.06	17	Fe ₂ O ₃
Fe 54	F	18(a)	83.03	32	Fe ₂ O ₃
Fe 54	AM	122(a)	49.2	343	Fe ₂ O ₃
Fe 54	AZ	183(a)	93.27	16	Fe ₂ O ₃
Fe 54	BA	187(a)	87.9	10	Fe ₂ O ₃
Fe 54	BA	187(ar)	87.9	10	Fe ₂ O ₃
Fe 54	BB	194(a)	87.4	69	Fe ₂ O ₃
Fe 54	CI	328(a)	84.3	62	Fe ₂ O ₃
Fe 54	DO	477(a)	34.47	67,272	Fe ₂ O ₃
Fe 54	FC	634(a)	93.06	540	Fe ₂ O ₃
Fe 54	FN	685(a)	Refinement Incomplete		
Fe 54	FN	685(b)	Refinement Incomplete		
Fe 56	B	4(a)	98.41	3,235	Fe ₂ O ₃
Fe 56	B	4(e)	98.5	901	Fe ₂ O ₃

Natural Isotopic Abundance:

Iron
Atomic No. 26

Fe 54 - 5.90%

Fe 56 - 91.52%

Fe 57 - 2.24%

Fe 58 0 0.34%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Fe 56	C	9(a)	98.7	2,683	Fe ₂ O ₃
Fe 56	C	9(c)	96.89	462	Fe ₂ O ₃
Fe 56	E	15(a)	98.62	10,403	Fe ₂ O ₃
Fe 56	F	19(a)	97.42	1,120	Fe ₂ O ₃
Fe 56	AM	123(a)	98.9	2,627	Fe ₂ O ₃
Fe 56	AZ	184(a)	99.0	12,451	Fe ₂ O ₃
Fe 56	EA	188(a)	98.5	35,474	Fe ₂ O ₃
Fe 56	EB	192(a)	98.3	9,818	Fe ₂ O ₃
Fe 56	CI	329(a)	96.5	51,056	Fe ₂ O ₃
Fe 56	CZ	404(f)	99.84	10,690	Fe ₂ O ₃
Fe 56	DO	478(a)	99.70	242,643	Fe ₂ O ₃
Fe 56	DO	478(as)	99.70	27,594	Fe
Fe 56	DO	478(ar)	99.70	76,218	Fe ₂ O ₃
Fe 56	FC	635(a)	Analysis Incomplete	18,171	Fe ₂ O ₃
Fe 56	FN	686(a)	Analysis Incomplete	304,226	Fe ₂ O ₃
Fe 56	FN	686(b)	Refinement Incomplete		
Fe 57	B	5(a)	21.10	62	Fe ₂ O ₃
Fe 57	B	5(f)	30.5	81	Fe ₂ O ₃

Natural Isotopic Abundance:			Iron Atomic No. 26		
Fe 54	-	5.90%			
Fe 56	-	91.52%			
Fe 57	-	2.24%			
Fe 58	-	0.34%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Fe 57	C	7(b)	56.13	0	
Fe 57	E	16(a)	73.01	0	
Fe 57	F	20(a)	69.63	15	Fe ₂ O ₃
Fe 57	AM	124(a)	33.2	69	Fe ₂ O ₃
Fe 57	AZ	185(a)	67.7	0	
Fe 57	BA	189(a)	75.8	0	
Fe 57	BB	193(a)	77.6	24	Fe ₂ O ₃
Fe 57	CI	330(a)	50.7	0	
Fe 57	CZ	405(f)	51.91	509	Fe ₂ O ₃
Fe 57	DK	449(a)	79.43	232	Fe ₂ O ₃
Fe 57	DL	453(a)	62.38	830	Fe ₂ O ₃
Fe 57	DL	453(d)	59.31	1,381	Fe ₂ O ₃
Fe 57	DL	453(a)	31.9	1,245	Fe ₂ O ₃
Fe 57	DL	453(f)	59.3	1,122	Fe ₂ O ₃
Fe 57	DL	453(j)	43.45	2,571	Fe ₂ O ₃
Fe 57	DM	459(a)	74.6	190	Fe ₂ O ₃
Fe 57	DL	463(a)	40.61	1,687	Fe ₂ O ₃
Fe 57	DL	463(b)	45.43	1,018	Fe ₂ O ₃

Natural Isotopic Abundance:				Iron Atomic No. 26	
Fe 54	-	5.90%			
Fe 56	-	91.52%			
Fe 57	-	2.24%			
Fe 58	-	0.34%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Fe 57	DL	463(e)	67.3	278	Fe ₂ O ₃
Fe 57	DL	463(j)	53.53	184	Fe ₂ O ₃
Fe 57	DL	463(k)	54.23	1,766	Fe ₂ O ₃
Fe 57	DL	467(c)	63.1	165	Fe ₂ O ₃
Fe 57	DN	471(a)	84.78	0	
Fe 57	DN	475(a)	87.29	0	
Fe 57	FN	687(a)	Refinement Incomplete		
Fe 57	FN	687(b)	Refinement Incomplete		
Fe 57	FC	636(a)	83.44	1,244	Fe ₂ O ₃
Fe 58	C	8(b)	22.0	15	Fe ₂ O ₃
Fe 58	E	17(b)	40.7	0	
Fe 58	AM	125(a)	10.3	44	Fe ₂ O ₃
Fe 58	CI	331(a)	46.0	0	
Fe 58	DL	454(f)	23.4	39	Fe ₂ O ₃
Fe 58	DL	454(m)	71.7	92	Fe ₂ O ₃
Fe 58	DL	464(l)	79.8	0	
Fe 58	DL	464(p)	71.8	0	
Fe 58	DO	480(a)	75.7	117	Fe ₂ O ₃

Natural Isotopic Abundance:

Fe 54 - 5.90%

Fe 56 - 91.52%

Fe 57 - 2.24%

Fe 58 - 0.34%

Iron (cont'd)
Atomic No. 26

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Fe 58	DO	480(b)	42.0	484	Fe ₂ O ₃
Fe 58	DO	480(c)	34.8	37	Fe ₂ O ₃
Fe 58	FC	637(i)	60.62	0	
Fe 58	FC	637(j)	76.13	0	
Fe 58	FC	637(l)	79.39	0	
Fe 58	FN	688(b)	74.20	37	Fe ₂ O ₃
Fe 58	FN	688(c)	59.65	104	Fe ₂ O ₃
Fe 58	FN	688(d)	55.74	372	Fe ₂ O ₃
Fe 58	FN	688(f)	57.31	197	Fe ₂ O ₃
Fe 58	FN	688(g)	65.85	82	Fe ₂ O ₃
Fe 58	FN	688(i)	78.66	115	Fe ₂ O ₃
Fe 58	FN	688(j)	78.02	86	Fe ₂ O ₃

Natural Isotopic Abundance:			Nickel Atomic No. 28		
Ni 58	-	67.4%			
Ni 60	-	26.7%			
Ni 61	-	1.2%			
Ni 62	-	3.8%			
Ni 64	-	0.88%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ni 58	J	27(a)	98.05	0	
Ni 58	K	33(a)	98.51	12	N10
Ni 58	AS-AT	141-147(a)	99.3	34	N10
Ni 58	DF	422(a)	98.36	5,485	N10
Ni 58	FJ	669(a)	Refinement Incomplete		
Ni 60	J	28(a)	94.4	18	N10
Ni 60	J	28(ar)	94.4	190	N10
Ni 60	K	34(a)	87.10	680	N10
Ni 60	AS-AT	142-148(a)	97.7	0	
Ni 60	DF	423(a)	95.0	0	
Ni 60	FJ	670(a)	Refinement Incomplete		
Ni 61	J	29(a)	78.83	0	
Ni 61	K	35(a)	34.42	28	N10
Ni 61	AS-AT	143-149(a)	80.9	0	
Ni 61	DF	424(a)	72.2	40	N10
Ni 61	FJ	671(a)	Analysis Incomplete	352	N10
Ni 62	J	30(a)	94.25	0	
Ni 62	AS-AT	141-150(a)	94.7	20	N10

Natural Isotopic Abundance:

Nickel
Atomic No. 28

Ni 58 - 67.4%

Ni 60 - 26.7%

Ni 61 - 1.2%

Ni 62 - 3.8%

Ni 64 - 0.88%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ni 62	K	36(a)	67.99	50	NiO
Ni 62	DF	425(a)	91.2	0	
Ni 62	FJ	672(a)	Analysis Incomplete	1,953	NiO
Ni 64	J	32(a)	85.10	10	NiO
Ni 64	K	38(a)	64.2	0	
Ni 64	AS-AT	146-152(a)	97.4	0	
Ni 64	DF	427(a)	80.6	0	
Ni 64	FJ	674(a)	Analysis Incomplete	742	NiO

Natural Isotopic Abundance:

Copper
Atomic No. 29

Cu 63 - 69.09%

Cu 65 - 30.91%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Cu 63	A	1(a)	97.0	650	CuO
Cu 63	A	1(ar)	97.0	960	CuO
Cu 63	J-K	31-37(a)	99.35	730	CuO
Cu 63	AS-AT	145-151(a)	99.77	0	
Cu 63	AV	161(cu)	98.2	203	CuO
Cu 63	DF	426(a)	99.11	3,351	CuO
Cu 63	DL	455(a)	96.12	578	CuO
Cu 63	DU	497(a)	99.40	17,750	CuO
Cu 63	FJ	673(a)	Analysis Incomplete	9,426	CuO
Cu 65	A	2(a)	93.81	0	
Cu 65	A	2(ar)	93.81	461	CuO
Cu 65	AV	162(cu)	90.6	14	CuO
Cu 65	DU	498(a)	98.16	13,866	CuO

Natural Isotopic Abundance:			Zinc Atomic No. 30		
Zn 64	-	49.18%			
Zn 66	-	27.76%			
Zn 67	-	4.05%			
Zn 68	-	18.40%			
Zn 70	-	0.61%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Zn 64	AG	97(a)	83.8	394	ZnO
Zn 64	BK	240(a)	93.4	0	
Zn 64	EK	556(a)	93.12	7,927	ZnO
Zn 66	AH	100(a)	78.4	712	ZnO
Zn 66	BK	241(a)	76.1	0	
Zn 66	EK	557(a)	93.79	7,700	ZnO
Zn 67	AG	98(a)	62.6	0	
Zn 67	BK	242(a)	56.0	102	ZnO
Zn 67	EK	558(a)	60.46	1,303	ZnO
Zn 68	AH	101(a)	72.6	0	
Zn 68	BK	243(a)	93.9	18	ZnO
Zn 68	EK	559(a)	95.47	6,430	ZnO
Zn 70	AH	102(a)	32.9	20	ZnO
Zn 70	BK	244(a)	32.0	39	ZnO
Zn 70	BK	244(ar)	32.0	0	
Zn 70	EK	560(a)	48.40	231	ZnO

Natural Isotopic Abundance:

Ga 69 - 60.00%

Ga 71 - 40.00%

Gallium
Atomic No. 31

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ga 69	EI	554(a)	98.42	11,827	Ga ₂ O ₃
Ga 71	EI	555(a)	98.08	2,231	Ga ₂ O ₃

Natural Isotopic Abundance:			Germanium Atomic No. 32		
Ge 70	-	20.63%			
Ge 72	-	27.41%			
Ge 73	-	7.84%			
Ge 74	-	36.37%			
Ge 76	-	7.75%	Electromagnetically Concentrated Isotopes		
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ge 70	BD-BE	205-210(a)	88.1	259	GeO ₂
Ge 72	BD-BE	206-211(a)	89.2	962	GeO ₂
Ge 73	BD-BE	207-212(a)	68.9	0	
Ge 73	BD-BE	207-212(ar)	68.9	186	GeO ₂
Ge 74	BD-BE	208-213(a)	95.2	1,562	GeO ₂
Ge 76	BD-BE	209-214(a)	79.3	0	

Natural Isotopic Abundance:		Selenium Atomic No. 34
Se 74 - 0.84%	Se 80 - 49.97%	
Se 76 - 9.15%	Se 82 - 8.89%	
Se 77 - 7.53%		
Se 78 - 23.62%		
Electromagnetically Concentrated Isotopes		

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Se 74	AK	109(a)	6.5	10	Se
Se 74	BS	268(a)	14.1	0	
Se 74	CY	397(a)	12.3	0	
Se 74	CY	397(ar)	12.3	255	Se
Se 74	DY	513(a)	12.08	143	Se
Se 74	FG	654(a)	18.02	90	Se
Se 74	FG	654(b)	33.06	0	
Se 76	AN	126(a)	43.5	10	Se
Se 76	BS	269(a)	41.5	600	Se
Se 76	CY	398(a)	54.8	542	Se
Se 76	CY	398(ar)	54.8	390	Se
Se 76	DY	514(a)	57.40	89	Se
Se 76	FG	655(a)	74.20	374	Se
Se 76	FG	655(b)	88.51	148	Se
Se 77	AK	110(a)	50.1	99	Se
Se 77	BS	270(a)	53.6	143	Se
Se 77	BS	270(ar)	53.6	500	Se
Se 77	CY	399(a)	49.4	408	Se

Natural Isotopic Abundance:		Selenium (cont'd) Atomic No. 34
Se 74 - 0.84%	Se 80 - 49.97%	
Se 76 - 9.15%	Se 82 - 8.89%	
Se 77 - 7.53%		
Se 78 - 23.62%		

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Se 80	CY	401(a)	91.7	1,136	Se
Se 80	DY	517(a)	93.76	41	Se
Se 80	FG	658(a)	96.94	1,506	Se
Se 80	FG	658(b)	98.39	851	Se
Se 82	BS	273(a)	44.4	0	
Se 82	AN	128(a)	49.6	96	Se
Se 82	BS	273(ar)	44.4	1,087	Se
Se 82	CY	402(a)	51.6	314	Se
Se 82	CY	402(ar)	51.6	260	Se
Se 82	CY	518(a)	52.36	1,081	Se
Se 82	FG	659(a)	75.74	460	Se
Se 82	FG	659(b)	89.87	140	Se

Natural Isotopic Abundance:				Selenium (cont'd) Atomic No. 34	
Se 74 -	0.84%	Se 80 -	49.97%		
Se 76 -	9.15%	Se 82 -	8.89%		
Se 77 -	7.53%				
Se 78 -	23.62%				
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Se 77	DY	515(a)	58.40	52	Se
Se 77	FG	656(c)	74.22	203	Se
Se 77	FG	656(d)	83.16	10	Se
Se 77	FG	656(e)	86.58	10	Se
Se 77	FG	656(f)	91.73	25	Se
Se 77	FG	656(g)	86.00	8	Se
Se 78	AN	127(a)	79.3	68	Se
Se 78	AN	127(ar)	79.3	104	Se
Se 78	BS	271(a)	72.7	1,853	Se
Se 78	CY	400(a)	81.7	707	Se
Se 78	CY	400(ar)	81.7	1,026	Se
Se 78	DY	516(a)	82.56	52	Se
Se 78	FG	657(b)	90.24	376	Se
Se 78	FG	657(d)	96.55	145	Se
Se 80	AK	111(a)	86.7	281	Se
Se 80	BS	272(a)	94.6	1,120	Se
Se 80	BS	272(ar)	94.6	257	Se

Natural Isotopic Abundance:

Bromine
Atomic No. 35

Br 79 - 50.57%

Br 81 - 49.43%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Br 79	EJ	552(a)	96.98	342	AgBr
Br 81	EJ	553(a)	96.81	318	AgBr

Natural Isotopic Abundance:

Rubidium
Atomic No. 37

- Rb 85 - 72.27%
- *Rb 87 - 27.73%

Electromagnetically Concentrated Isotopes

*Radioactive

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	SHIPMENT Product Form
Rb 85	EW	619(a)	95.97	3,109	RbCl
Rb 87	EW	620(a)	89.62	2,025	RbCl

Natural Isotopic Abundance:				Strontium Atomic No. 38	
Sr 84	-	0.56%			
Sr 86	-	9.86%			
Sr 87	-	7.02%			
Sr 88	-	82.6%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Sr 84	Z	77(a)	27.2	0	
Sr 84	BL	245(a)	61.6	0	
Sr 84	EH	548(a)	63.68	0	
Sr 84	FL	679(a)	45.95	377	SrCO ₃
Sr 86	Z	78(a)	69.9	0	
Sr 86	Z	78(ar)	69.9	290	SrO
Sr 86	BL	246(a)	88.2	0	
Sr 86	EH	549(a)	89.02	23	Sr(NO ₃) ₂
Sr 86	FL	680(a)	Analysis Incomplete	1,480	SrCO ₃
Sr 87	EH	550(a)	60.03	0	
Sr 87	FL	681(a)	Refinement Incomplete		
Sr 88	Z	79(a)	98.9	1,049	SrO
Sr 88	BL	248(a)	99.5	322	SrSO ₄
Sr 88	EH	551(a)	99.67	39	Sr(NO ₃) ₂
Sr 88	FL	682(a)	99.63	13,480	SrCO ₃

Natural Isotopic Abundance:

Zirconium
Atomic No. 40

- Zr 90 - 50.83%
- Zr 91 - 11.21%
- Sr 92 - 17.18%
- Sr 94 - 17.79%
- Sr 96 - 2.99%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Zr 90	AA	80(a)	91.7	18	ZrO ₂
Zr 90	AA	80(ar)	91.7	460	ZrO ₂
Zr 90	CK	334(a)	98.0	7,045	ZrO ₂
Zr 90	CK	334(ar)	98.0	1,878	ZrO ₂
Zr 90	CV	381(a)	95.6	3,612	ZrO ₂
Zr 90	EE	439(a)	98.66	11,487	ZrO ₂
Zr 91	AA	81(a)	54.4	50	ZrO ₂
Zr 91	AA	81(ar)	54.4	100	ZrO ₂
Zr 91	CK	335(a)	86.6	33	ZrO ₂
Zr 91	CK	335(ar)	86.6	1,856	ZrO ₂
Zr 91	CV	382(a)	75.1	839	ZrO ₂
Zr 91	EE	540(a)	86.89	0	
Zr 92	CK	336(a)	92.7	287	ZrO ₂
Zr 92	CK	336(ar)	92.7	1,951	ZrO ₂
Zr 92	CV	383(a)	89.8	1,099	ZrO ₂
Zr 92	EE	541(a)	95.38	5,577	ZrO ₂
Zr 94	AA	83(a)	82.1	94	ZrO ₂

Natural Isotopic Abundance:

Zirconium
Atomic No. 40

Zr 90 - 50.83%

Zr 91 - 11.21%

Zr 92 - 17.18%

Zr 94 - 17.79%

Zr 96 - 2.99%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Zr 94	AA	83(ar)	82.1	40	ZrO ₂
Zr 94	CK	337(a)	92.8	68	ZrO ₂
Zr 94	CK	337(ar)	92.8	1,694	ZrO ₂
Zr 94	CV	384(a)	80.9	861	ZrO ₂
Zr 94	EE	542(a)	97.92	5,269	ZrO ₂
Zr 96	ZZ	84(a)	40.6	22	ZrO ₂
Zr 96	CK	338(a)	74.6	0	
Zr 96	CK	338(ar)	74.6	20	ZrO ₂
Zr 96	CV	385(a)	43.6	0	
Zr 96	EE	543(a)	89.48	140	ZrO ₂

Natural Isotopic Abundance:				Molybdenum Atomic No. 42	
Mo 92 - 15.04%		Mo 98 - 24.00%			
Mo 94 - 9.35%		Mo 100- 9.67%			
Mo 95 - 15.78%					
Mo 96 - 16.56%					
Mo 97 - 9.60%					
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Mo 92	R-T	53(a)	92.07	24	MoO ₃
Mo 92	R-T	53(ar)	92.07	0	
Mo 92	AW	163(a)	95.5	0	
Mo 92	AW	163(ar)	95.5	225	MoO ₃
Mo 92	FP	695(a)	87.57	194	MoO ₃
Mo 94	R-T	54(a)	74.68	0	
Mo 94	AW	164(a)	79.1	120	MoO ₃
Mo 94	FP	696(a)	Analysis Incomplete	128	MoO ₃
Mo 95	R-T	55(a)	80.75	804	MoO ₃
Mo 95	AW	165(a)	88.0	121	MoO ₃
Mo 95	AW	165(ar)	88.0	182	MoO ₃
Mo 95	FP	697(a)	Analysis Incomplete	156	MoO ₃
Mo 95	FP	697(b)	91.27	94	MoO ₃
Mo 96	R-T	56(a)	85.94	2,797	MoO ₃
Mo 96	AW	166(a)	90.6	81	MoO ₃
Mo 96	FP	698(a)	Refinement Incomplete		
Mo 97	R-T	57(a)	77.97	474	MoO ₃

Natural Isotopic Abundance:

Molybdenum
Atomic No. 42

- Mo 92 - 15.04%
- Mo 94 - 9.35%
- Mo 95 - 15.78%
- Mo 96 - 16.56%
- Mo 97 - 9.60%
- Mo 98 - 24.00%
- Mo 100 - 9.67%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Mo 97	R-T	57(ar)	77.97	284	MoO ₃
Mo 97	AW	167(a)	75.4	510	MoO ₃
Mo 97	FP	699(a)	Analysis Incomplete	74	MoO ₃
Mo 97	FP	699(b)	89.63	103	MoO ₃
Mo 98	R-T	58(a)	95.0	637	MoO ₃
Mo 98	R-T	58(b)	89.9	493	MoO ₃
Mo 98	AW	168(a)	96.3	509	MoO ₃
Mo 98	FP	700(a)	Analysis Incomplete	536	MoO ₃
Mo 100	R-T	59(a)	90.24	0	
Mo 100	R-T	59(ar)	90.24	200	MoO ₃
Mo 100	R-T	59(b)	90.20	240	MoO ₃
Mo 100	AW	169(a)	93.0	25	MoO ₃
Mo 100	FP	701(a)	Analysis Incomplete	193	MoO ₃

Natural Isotopic Abundance:

Silver
Atomic No. 47

Ag 107 - 51.86%

Ag 109 - 48.14%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ag 107	N	41(a)	98.96	39	AgCl
Ag 107	S-U	41(b)	90.26	115	AgCl
Ag 107	S-U	41(br)	90.26	2,143	Ag
Ag 107	EA	522(a)	96.10	2,131	AgCl
Ag 109	N	42(a)	95.88	31	AgCl
Ag 109	S-U	42(b)	92.16	22	AgCl
Ag 109	S-U	42(br)	92.16	1,644	Ag
Ag 109	EA	523(a)	99.54	1,736	AgCl

Natural Isotopic Abundance:				Cadmium Atomic No. 48	
Cd 106 - 1.22%		Cd 112 - 23.79%			
Cd 108 - 0.89%		Cd 113 - 12.34%			
Cd 110 - 12.43%		Cd 114 - 28.81%			
Cd 111 - 12.86%		Cd 116 - 7.66%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Cd 106	AC	88(a)	19.94	44	CdO
Cd 106	CD	314(a)	32.9	0	
Cd 108	AX	170(a)	14.2	438	CdO
Cd 108	AX	170(ar)	14.2	60	CdO
Cd 108	CD	315(a)	24.8	16	CdO
Cd 110	AX	171(a)	55.8	2,027	CdO
Cd 110	CE	316(a)	70.0	2,518	CdO
Cd 111	AC	89(a)	53.3	295	CdO
Cd 111	CE	317(a)	64.5	3,541	CdO
Cd 112	AX	172(a)	79.3	1,890	CdO
Cd 112	CE	318(a)	83.5	4,013	CdO
Cd 113	AB	86(a)	25.5	376	CdO
Cd 113	CE	319(a)	54.1	2,418	CdO
Cd 114	AC	90(a)	79.52	772	CdO
Cd 114	CE	320(a)	94.2	3,418	CdO
Cd 114	CE	320(ar)	94.2	316	CdO
Cd 116	AB	87(a)	24.01	401	CdO

Natural Isotopic Abundance:

Cadmium (cont'd)
Atomic No. 48

Cd 106 - 1.22%	Cd 112 - 23.79%
Cd 108 - 0.89%	Cd 113 - 12.34%
Cd 110 - 12.43%	Cd 114 - 28.81%
Cd 111 - 12.86%	Cd 116 - 7.66%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	SHIPMENT Product Form
Cd 116	CE	321(a)	71.2	31	CaO
Cd 116	CE	321(ar)	71.2	10	CaO

Natural Isotopic Abundance:

Indium
Atomic No. 49

*In 113 - 4.22%

*In 115 - 95.78%

Electromagnetically Concentrated Isotopes

*Radioactive					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
In 113	BH	225(a)	22.8	0	
In 113	CO	354(a)	16.8	415	In ₂ O ₃
In 113	CQ	358(a)	65.4	0	
In 113	DE	419(a)	14.2	1,735	In ₂ O ₃
In 113	ER	594(a)	59.58	30	In ₂ O ₃
In 115	AD	92(a)	99.56	964	In ₂ O ₃
In 115	BH	226(a)	99.6	856	In ₂ O ₃
In 115	BH	226(ar)	99.6	470	In ₂ O ₃
In 115	CO	355(a)	99.9	14,563	In ₂ O ₃
In 115	CQ	359(a)	99.8	0	
In 115	DE	420(a)	99.92	0	
In 115	ER	595(a)	99.94	31,900	In ₂ O ₃

Natural Isotopic Abundance:				Tin Atomic No. 50	
Sn 112 - 1.00%	Sn 118 - 24.07%				
Sn 114 - 0.68%	Sn 119 - 8.63%				
Sn 115 - 0.44%	Sn 120 - 32.53%				
Sn 116 - 14.40%	Sn 122 - 4.68%				
Sn 117 - 7.68%	*Sn 124 - 5.89%				
Electromagnetically Concentrated Isotopes					
*Radioactive					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Sn 112	BI	227(a)	30.8	0	
Sn 112	CR	360(a)	45.5	0	
Sn 112	EC	527(a)	72.49	0	
Sn 112	FS	710(a)	Refinement Incomplete		
Sn 114	AL	113(a)	32.7	0	
Sn 114	BI	228(a)	19.2	0	
Sn 114	CR	361(a)	24.1	0	
Sn 114	EC	528(a)	50.03	160	SnO ₂
Sn 114	FS	711(a)	Refinement Incomplete		
Sn 115	BI	229(a)	4.5	28	SnO ₂
Sn 115	CR	362(a)	12.1	0	
Sn 115	EC	529(a)	14.0	535	SnO ₂
Sn 115	FS	712(a)	Refinement Incomplete		
Sn 116	AL	115(a)	76.3	0	
Sn 116	AY	176(a)	74.5	116	SnO ₂
Sn 116	BC	198(a)	58.4	388	SnO ₂
Sn 116	BI	230(a)	43.2	304	SnO ₂
Sn 116	CR	363(a)	89.57	4,144	SnO ₂

Natural Isotopic Abundance:				Tin Atomic No. 50	
Sn 112 - 1.00%		Sn 118 - 24.07%			
Sn 114 - 0.68%		Sn 119 - 8.63%			
Sn 115 - 0.44%		Sn 120 - 32.53%			
Sn 116 - 14.40%		Sn 122 - 4.68%			
Sn 117 - 7.68%		*Sn 124 - 5.80%			
Electromagnetically Concentrated Isotopes					
*Radioactive					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Sn 116	EC	530(a)	92.64	7,284	SnO ₂
Sn 116	FS	713(a)	Refinement Incomplete		
Sn 117	AL	116(a)	69.8	0	
Sn 117	BI	231(b)	75.3	288	SnO ₂
Sn 117	CR	364(a)	73.93	4,748	SnO ₂
Sn 117	EC	531(a)	77.07	4,482	SnO ₂
Sn 117	FS	714(a)	Refinement Incomplete		
Sn 118	AL	117(a)	69.3	918	SnO ₂
Sn 118	AY	178(a)	90.1	1,014	SnO ₂
Sn 118	EC	200(a)	91.8	63	SnO ₂
Sn 118	BI	232(a)	84.6	1,020	SnO ₂
Sn 118	CR	365(a)	93.26	8,510	SnO ₂
Sn 118	EC	532(a)	94.91	13,126	SnO ₂
Sn 118	FS	715(a)	Refinement Incomplete		
Sn 119	AL	118(a)	68.3	0	
Sn 119	AY	179(a)	77.1	93	SnO ₂
Sn 119	EC	201(a)	64.4	382	SnO ₂
Sn 119	BI	233(a)	78.5	166	SnO ₂

Natural Isotopic Abundance:

Sn 112 - 1.00%	Sn 118 - 24.07%
Sn 114 - 0.68%	Sn 119 - 8.63%
Sn 115 - 0.44%	Sn 120 - 32.53%
Sn 116 - 14.40%	Sn 122 - 4.68%
Sn 117 - 7.68%	*Sn 124 - 5.89%

Tin (cont'd)
Atomic No. 50

Electromagnetically Concentrated Isotopes

*Radioactive

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Sn 119	CR	366(a)	78.25	5,024	SnO ₂
Sn 119	EC	533(a)	79.82	18,057	SnO ₂
Sn 119	FS	716(a)	Refinement Incomplete		
Sn 120	AL	119(a)	93.5	420	SnO ₂
Sn 120	AY	180(a)	95.4	1,588	SnO ₂
Sn 120	BC	202(a)	72.6	3,155	SnO ₂
Sn 120	BI	234(a)	53.6	1,760	SnO ₂
Sn 120	CR	367(a)	97.01	18,120	SnO ₂
Sn 120	EC	534(a)	98.14	18,026	SnO ₂
Sn 120	FS	717(a)	Refinement Incomplete		
Sn 122	AL	120(a)	61.0	0	
Sn 122	AY	181(a)	70.7	0	
Sn 122	BC	203(a)	42.9	0	
Sn 122	BI	235(a)	45.8	13	SnO ₂
Sn 122	CR	368(a)	83.66	2,545	SnO ₂
Sn 122	EC	535(a)	88.92	2,235	SnO ₂
Sn 122	FS	718(a)	Refinement Incomplete		

Natural Isotopic Abundance:			Tin (cont'd) Atomic No. 50		
Sn 112 - 1.00%		Sn 118 - 24.07%			
Sn 114 - 0.68%		Sn 119 - 8.63%			
Sn 115 - 0.44%		Sn 120 - 32.53%			
Sn 116 - 14.40%		Sn 122 - 4.68%			
Sn 117 - 7.68%		*Sn 124 - 5.89%			
Electromagnetically Concentrated Isotopes					
*Radioactive					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Sn 124	AL	121(a)	64.5	0	
Sn 124	BC	204(a)	52.0	0	
Sn 124	BI	236(a)	71.0	0	
Sn 124	BI	236(ar)	71.0	125	SnO ₂
Sn 124	CR	369(a)	83.1	0	
Sn 124	CR	369(au)	83.1	0	Sn
Sn 124	CR	369(ar)	83.1	0	
Sn 124	EC	536(a)	95.04	30	SnO ₂
Sn 124	EC	536(as)	95.04	498	Sn
Sn 124	FS	719(a)	Refinement Incomplete		

Natural Isotopic Abundance:

Antimony
Atomic No. 51

Sb 121 - 57.25%

Sb 123 - 42.75%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Sb 121	AE	93(a)	99.4	0	
Sb 121	BT	274(a)	97.7	75	Sb
Sb 123	AE	94(a)	96.7	0	
Sb 123	BT	275(a)	95.6	1,379	Sb

Natural Isotopic Abundance:

Tellurium
Atomic No. 52

Te 120 - 0.094%	Te 125 - 6.97%
Te 122 - 2.46%	Te 126 - 18.69%
Te 123 - 0.86%	Te 128 - 31.81%
Te 124 - 4.67%	*Te 130 - 34.44%

Electromagnetically Concentrated Isotopes

*Radioactive					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Te 120	AU	153(a)	18.0	0	
Te 120	CA	292(a)	13.7	0	
Te 120	DX	505(a)	22.3	0	
Te 120	FE	640(a)	19.90	12	Te
Te 122	AU	154(a)	77.8	19	Te
Te 122	CA	293(a)	79.4	0	
Te 122	DX	506(a)	86.24	39	Te
Te 122	FE	641(a)	81.72	240	Te
Te 123	AU	155(a)	34.9	7	Te
Te 123	CA	294(a)	45.8	0	
Te 123	DX	507(a)	60.91	67	Te
Te 123	FE	642(a)	48.58	114	Te
Te 124	AU	156(a)	72.5	56	Te
Te 124	CA	295(a)	83.9	198	Te
Te 124	CA	295(b)	21.8	225	Te
Te 124	DX	508(a)	76.47	555	Te
Te 124	FE	643(a)	81.34	650	Te

Natural Isotopic Abundance:			Tellurium (cont'd) Atomic No. 52		
Te 120 - 0.094%		Te 125 - 6.97%			
Te 122 - 2.46%		Te 126 - 18.69%			
Te 123 - 0.86%		Te 128 - 31.81%			
Te 124 - 4.67%		*Te 130 - 34.44%			
Electromagnetically Concentrated Isotopes					
*Radioactive					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Te 125	AU	157(a)	81.1	38	Te
Te 125	CA	296(a)	87.9	0	
Te 125	CA	296(b)	40.5	264	Te
Te 125	CA	296(ar)	87.9	2,130	Te
Te 125	DX	509(a)	81.65	0	
Te 125	FE	644(a)	80.53	1,262	Te
Te 126	AU	158(a)	93.2	1,496	Te
Te 126	CA	297(a)	95.4	1,547	Te
Te 126	CA	297(ar)	95.4	943	Te
Te 126	CA	297(b)	79.0	914	Te
Te 126	DX	510(b)	89.68	4,411	Te
Te 126	FE	645(a)	93.46	3,261	Te
Te 128	AU	159(a)	93.5	1,156	Te
Te 128	CA	298(a)	94.4	8,795	Te
Te 128	CA	298(ar)	94.4	714	Te
Te 128	CA	298(b)	91.8	1,594	Te
Te 128	CA	298(c)	94.0	111	Te

Natural Isotopic Abundance:		Tellurium (cont'd) Atomic No. 52	
Te 120 - 0.094%	Te 125 - 6.97%		
Te 122 - 2.46%	Te 126 - 18.69%		
Te 123 - 0.86%	Te 128 - 31.81%		
Te 124 - 4.67%	*Te 130 - 34.44%		
Electromagnetically Concentrated Isotopes			

*Radioactive					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Te 128	DX	511(a)	82.32	5,760	Te
Te 128	FE	646(a)	96.47	4,881	Te
Te 130	AU	160(a)	93.0	530	Te
Te 130	Ca	299(a)	97.4	7,905	Te
Te 130	CA	299(b)	93.5	0	
Te 130	CA	299(br)	93.5	950	Te
Te 130	DX	512(a)	78.23	4,936	Te
Te 130	FE	647(a)	97.78	4,914	Te

Natural Isotopic Abundance:				Barium Atomic No. 56	
Ba 130 - 0.103%		Ba 136 - 7.79%			
Ba 132 - 0.096%		Ba 137 - 11.25%			
Ba 134 - 2.39%		Ba 138 - 71.83%			
Ba 135 - 6.55%					
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ba 130	DG	429(a)	16.0	0	
Ba 130	FT	720(a)	Refinement Incomplete		
Ba 132	DG	430(a)	7.43	0	
Ba 132	FT	721(a)	Refinement Incomplete		
Ba 134	DG	431(a)	51.39	0	
Ba 134	FT	722(a)	Refinement Incomplete		
Ba 135	DG	432(a)	67.32	751	BaCO ₃
Ba 135	FT	723(a)	Refinement Incomplete		
Ba 136	DG	433(a)	50.02	183	BaCO ₃
Ba 136	FT	724(a)	Refinement Incomplete		
Ba 137	DG	434(a)	38.98	1,100	BaCO ₃
Ba 137	FT	725(a)	Refinement Incomplete		
Ba 138	DG	435(a)	98.04	1,380	BaCO ₃
Ba 138	FT	726(a)	Refinement Incomplete		

Natural Isotopic Abundance:

La 138 - 0.087%

La 139 - 99.913%

Lanthanum
Atomic No. 57

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
La 138	EF	544(a)	0.597	351	La ₂ O ₃
La 139	EF	545(a)	99.96	17,643	La ₂ O ₃

Natural Isotopic Abundance:	Cerium Atomic No. 58
Ce 136 - 0.195%	
Ce 138 - 0.265%	
Ce 140 - 88.44%	
Ce 142 - 11.10%	
Electromagnetically Concentrated Isotopes	

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Ce 136	DD	415(a)	16.6	0	
Ce 136	DW	501(a)	8.94	0	
Ce 136	FK	675(a)	22.29	0	
Ce 136	FR	706(a)	Analysis Incomplete	342	CeO ₂
Ce 138	DD	416(a)	8.9	0	
Ce 138	DW	502(a)	4.42	290	CeO ₂
Ce 138	FK	676(a)	Analysis Incomplete	186	CeO ₂
Ce 140	FR	707(a)	Analysis Incomplete	1,072	CeO ₂
Ce 140	CW	389(a)	98.5	3,786	CeO ₂
Ce 140	DD	417(a)	98.7	8,397	CeO ₂
Ce 140	DW	503(a)	99.25	0	
Ce 140	FK	677(a)	Analysis Incomplete	7,680	CeO ₂
Ce 140	FR	708(a)	Refinement Incomplete		
Ce 142	DD	418(b)	87.4	29	CeO ₂
Ce 142	DW	504(a)	84.42	516	CeO ₂
Ce 142	FK	678(a)	Analysis Incomplete	906	CeO ₂
Ce 142	FR	709(a)	Analysis Incomplete	6,347	CeO ₂

Natural Isotopic Abundance:

Neodymium
Atomic No. 60

Nd 142 - 26.83%	Nd 146 - 17.29%
Nd 143 - 12.10%	Nd 148 - 5.80%
Nd 144 - 23.95%	Nd 150 - 5.67%
Nd 145 - 8.36%	

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Nd 142	EQ	587(a)	93.00	75	Nd ₂ O ₃
Nd 143	EQ	588(a)	83.93	102	Nd ₂ O ₃
Nd 144	EQ	589(a)	93.45	91	Nd ₂ O ₃
Nd 145	EQ	590(a)	78.60	187	Nd ₂ O ₃
Nd 146	EQ	591(a)	95.60	62	Nd ₂ O ₃
Nd 148	EQ	592(a)	89.85	0	
Nd 150	EQ	593(a)	94.76	0	

Natural Isotopic Abundance:				Samarium Atomic No. 62	
Sm 144	-	3.13%	Sm 150	-	7.38%
*Sm 147	-	15.12%	Sm 152	-	26.59%
Sm 148	-	11.29%	Sm 154	-	22.62%
Sm 149	-	13.87%			
Electromagnetically Concentrated Isotopes					
*Radioactive					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Sm 144	EM	567(a)	72.13	0	
Sm 144	FH	660(a)	58.93	14	Sm ₂ O ₃
Sm 147	EM	569(a)	81.63	14	Sm ₂ O ₃
Sm 147	FH	661(a)	78.35	296	Sm ₂ O ₃
Sm 148	EM	570(a)	76.01	679	Sm ₂ O ₃
Sm 148	FH	662(a)	62.40	649	Sm ₂ O ₃
Sm 149	EM	571(a)	71.53	34	Sm ₂ O ₃
Sm 149	FH	663(a)	73.01	22	Sm ₂ O ₃
Sm 150	EM	672(a)	74.09	298	Sm ₂ O ₃
Sm 150	FH	664(a)	68.04	907	Sm ₂ O ₃
Sm 152	EM	573(a)	89.90	3,261	Sm ₂ O ₃
Sm 152	FH	665(a)	93.92	138	Sm ₂ O ₃
Sm 154	EM	574(a)	92.10	2,579	Sm ₂ O ₃
Sm 154	FH	666(a)	96.05	30	Sm ₂ O ₃

Natural Isotopic Abundance:

Hafnium
Atomic No. 72

Hf 174 - 0.17%	Hf 179 - 13.67%
Hf 176 - 5.22%	Hf 180 - 35.16%
Hf 177 - 18.53%	
Hf 178 - 27.25%	

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Hf 174	ET	602(a)	7.85	73	HfO ₂
Hf 176	ET	603(a)	48.46	98	HfO ₂
Hf 177	ET	604(a)	61.71	788	HfO ₂
Hf 178	ET	605(a)	89.91	1,448	HfO ₂
Hf 179	ET	606(a)	46.57	578	HfO ₂
Hf 180	ET	607(a)	93.96	1,402	HfO ₂

Natural Isotopic Abundance:			Tungsten Atomic No. 74		
W 180	-	0.16%			
W 182	-	26.21%			
W 183	-	14.33%			
W 184	-	30.61%			
W 186	-	28.69%			
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
W 180	BG	220(a)	9.00	0	
W 180	CL	340(a)	4.95	41	WO ₃
W 180	CL	340(ar)	4.95	54	WO ₃
W 180	EL	561(a)	6.95	275	WO ₃
W 182	BG	221(a)	94.25	46	WO ₃
W 182	CL	341(a)	91.58	1,639	WO ₃
W 182	EL	562(a)	92.33	10,990	WO ₃
W 183	BG	222(a)	86.21	217	WO ₃
W 183	CL	342(a)	82.01	745	WO ₃
W 183	EL	563(a)	82.63	6,164	WO ₃
W 184	BG	223(a)	95.72	440	WO ₃
W 184	CL	343(a)	91.14	106	WO ₃
W 184	CL	343(ar)	91.14	2,980	WO ₃
W 184	EL	564(a)	95.06	10,974	WO ₃
W 186	BG	224(a)	97.94	92	WO ₃
W 186	CL	344(a)	97.17	616	WO ₃
W 186	CL	344(ar)	97.17	372	WO ₃
W 186	EL	565(a)	97.54	11,493	WO ₃

Natural Isotopic Abundance:

Rhenium
Atomic No. 75

Re 185 - 37.31%

Re 187 - 62.69%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Re 185	CP	356(a)	85.38	2,512	Re
Re 187	CP	357(a)	98.22	715	Re

Natural Isotopic Abundance:				Mercury Atomic No. 80	
Hg 196 - 0.16%		Hg 201 - 13.20%			
Hg 198 - 10.02%		Hg 202 - 29.76%			
Hg 199 - 16.90%		Hg 204 - 6.86%			
Hg 200 - 23.10%					
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Hg 196	DR	485(a)	8.44	0	
Hg 196	DR	485(b)	1.90	0	
Hg 196	DR	485(c)	1.46	347	Hg
Hg 198	DR	486(a)	79.11	366	Hg
Hg 198	DR	486(b)	66.11	375	Hg
Hg 198	DR	486(c)	53.37	853	Hg
Hg 198	DR	486(d)	54.35	2,930	Hg
Hg 199	DR	487(a)	73.9	45	Hg
Hg 199	DR	487(b)	72.1	28	Hg
Hg 199	DR	487(c)	68.0	0	
Hg 199	DR	487(d)	65.45	43	Hg
Hg 199	DR	487(e)	62.51	177	Hg
Hg 200	DR	488(a)	91.39	97	Hg
Hg 200	DR	488(b)	86.45	119	Hg
Hg 200	DR	488(c)	80.85	749	Hg
Hg 200	DR	488(d)	74.90	3,478	Hg
Hg 200	DR	488(e)	64.66	1,420	Hg

Natural Isotopic Abundance:

Hg 196 - 0.16%	Hg 202 - 29.76%
Hg 198 - 10.02%	Hg 204 - 6.86%
Hg 199 - 16.90%	
Hg 200 - 23.10%	

Mercury (cont'd)
Atomic No. 80

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Hg 200	DR	488(f)	76.28	1,492	Hg
Hg 201	DR	489(a)	71.8	26	Hg
Hg 201	DR	489(b)	62.48	90	Hg
Hg 201	DR	489(c)	57.90	230	Hg
Hg 201	DR	489(d)	57.3	178	Hg
Hg 201	DR	489(e)	51.48	121	Hg
Hg 202	DR	490(a)	98.3	46	Hg
Hg 202	DR	490(b)	98.06	20	Hg
Hg 202	DR	490(c)	97.33	55	Hg
Hg 202	DR	490(d)	96.45	122	Hg
Hg 202	DR	490(e)	95.13	379	Hg
Hg 202	DR	490(f)	91.46	1,032	Hg
Hg 202	DR	490(g)	87.87	354	Hg
Hg 202	DR	490(h)	80.27	4,334	Hg
Hg 202	DR	490(i)	75.75	825	Hg
Hg 204	DR	491(a)	89.17	0	Hg
Hg 204	DR	491(b)	77.61	201	Hg

Natural Isotopic Abundance:				Mercury (cont'd) Atomic No. 80	
Hg 196 - 0.16%		Hg 202 - 29.76%			
Hg 198 - 10.02%		Hg 204 - 6.86%			
Hg 199 - 16.90%					
Hg 200 - 23.10%					
Hg 201 - 13.20%					
Electromagnetically Concentrated Isotopes					
Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Hg 204	DR	491(c)	69.80	0	
Hg 204	DR	491(d)	62.78	129	Hg
Hg 204	DR	491(e)	49.66	1,346	Hg
Hg 204	DR	491(f)	42.91	662	Hg
Hg 204	DR	491(g)	30.07	363	Hg
Hg 204	DR	491(h)	72.34	93	Hg

Natural Isotopic Abundance:

Thallium
Atomic No. 81

Tl 203 - 29.51%

Tl 205 - 70.49%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	SHIPMENT Product Form
Tl 203	BV-3	278(a)	75.6	194	Tl ₂ O ₃
Tl 203	BX	284(a)	61.1	5,899	Tl ₂ O ₃
Tl 203	BY-3	286(a)	47.9	6,875	Tl ₂ O ₃
Tl 203	CC-3	307(a)	58.8	601	Tl ₂ O ₃
Tl 203	CF-3	322(a)	86.0	1,170	Tl ₂ O ₃
Tl 203	CG-3	324(a)	34.1	106	Tl ₂ O ₃
Tl 203	CH-3	326(a)	61.0	1,892	Tl ₂ O ₃
Tl 205	BR-3	267(a)	89.5	1,436	Tl ₂ O ₃
Tl 205	BU-3	277(a)	92.8	4,276	Tl ₂ O ₃
Tl 205	BV-3	279(a)	95.2	1,047	Tl ₂ O ₃
Tl 205	BX	285(a)	98.7	940	Tl ₂ O ₃
Tl 205	BY-3	287(a)	92.8	2,715	Tl ₂ O ₃
Tl 205	CC-3	308(a)	86.1	577	Tl ₂ O ₃
Tl 205	CF-3	323(a)	95.6	176	Tl ₂ O ₃
Tl 205	CH-3	327(a)	91.8	1,594	Tl ₂ O ₃
Tl 205	CJ-3	333(a)	90.5	3,818	Tl ₂ O ₃

Natural Isotopic Abundance:	Lead Atomic No. 82
Pb 204 - 1.37%	
Pb 206 - 26.26%	
Pb 207 - 20.82%	
Pb 208 - 51.51%	
Electromagnetically Concentrated Isotopes	

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	Product Form
Pb 204	O	43(a)	7.8	87	PbCrO ₄
Pb 204	AQ	135(a)	16.69	0	
Pb 204	AQ	135(ar)	16.69	38	PbCrO ₄
Pb 204	BO	257(a)	23.4	13	PbCrO ₄
Pb 204	CN	349(a)	27.0	0	
Pb 204	EO	581(a)	25.70	2,775	PbO
Pb 204	FQ	702(a)	5.30	3,170	PbO
Pb 206	O	44(a)	75.67	278	PbCrO ₄
Pb 206	AQ	136(a)	77.9	255	PbCrO ₄
Pb 206	BO	258(a)	71.3	238	PbCrO ₄
Pb 206	BO	258(ar)	71.3	1,018	PbCrO ₄
Pb 206	CN	350(a)	81.0	0	
Pb 206	EO	582(a)	64.93	4,157	PbO
Pb 206	FQ	703(a)	35.02	8,726	PbO
Pb 207	O	45(a)	61.55	181	PbCrO ₄
Pb 207	AQ	137(a)	48.2	553	PbCrO ₄
Pb 207	AQ	137(ar)	48.2	512	PbCrO ₄
Pb 207	BO	259(a)	66.8	1,299	PbCrO ₄

Natural Isotopic Abundance:

Lead
Atomic No. 82

Pb 204 - 1.37%

Pb 206 - 26.26%

Pb 207 - 20.82%

Pb 208 - 51.51%

Electromagnetically Concentrated Isotopes

Isotope	Series	Sample	Abundance of Enriched Isotope (per cent)	AVAILABLE FOR SHIPMENT Element Weight (milligrams)	SHIPMENT Product Form
Pb 207	BO	259(ar)	56.8	529	PbCrO ₄
Pb 207	CN	351(a)	61.6	0	
Pb 207	EO	583(a)	61.06	5,610	PbO
Pb 207	FQ	704(a)	26.81	8,802	PbO
Pb 208	O	46(a)	92.1	33	PbCrO ₄
Pb 208	O	46(ar)	92.1	160	PbCrO ₄
Pb 208	AQ	138(a)	82.10	846	PbCrO ₄
Pb 208	BO	260(a)	96.6	486	PbO
Pb 208	CN	352(ar)	95.8	166	PbSO ₄
Pb 208	EO	584(a)	87.97	23,395	PbO
Pb 208	FQ	705(a)	Analysis Incomplete	9,090	PbO