

Periodic Table of Elements

Their Abundances, Prices, Global Sources

1 1500000 H N/A N/A \$4.34/L																	2 5.5 He US,QA \$7.57/m ³ N/A				
3 17000 Li CL,CN,RU \$13.00 \$5320 ^{2N8}	4 1900 Be US \$660 \$54400 ^{2N5}	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Z Abundance in crust by weight, ppb Symbol Major Source Countries Price, low purity (market value), /kg Price, high purity², /kg </div>														5 8700 B TR,US \$0.38 \$257600	6 1800000 C CN \$1.30 \$115 ^{3N+}	7 20000 N CN \$0.25 N/A	8 46000000 O N/A \$0.13/m ³ N/A	9 540000 F CN \$0.30 N/A	10 3 Ne
11 23000000 Na US \$0.15 \$31800 ^{3N5}	12 29000000 Mg CN \$5.18 \$542	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> red = US Depends 80%+ on imports pink = US Depends 50-80% on imports gray = synthetics, noble gases not typically found in crust bold frame = critical to U.S. national security and the economy³ </div>														13 82000000 Al CN \$2.20 \$828	14 270000000 Si CN \$2.43 \$780	15 1000000 P CN,US \$0.07 \$10280(red)	16 420000 S US,CN \$0.05 \$1536	17 170000 Cl CN \$0.01 N/A	18 1500 Ar
19 15000000 K CA,BY \$0.80 \$29400 ^{3N5}	20 50000000 Ca CN \$0.14 \$29240 ^{3N8}	21 26000 Sc CN \$300 \$134400 ^{3N}	22 6600000 Ti ZA,AU \$9.20 \$7040	23 190000 V CN,RU \$26.01 \$3260 ^{2N7}	24 140000 Cr ZA \$11.00 \$2110	25 1100000 Mn GA,ZA \$0.66 \$2910 ^{3N5}	26 63000000 Fe AU,BR,CN \$0.27 \$16140	27 30000 Co CD,CN \$33.07 \$11240	28 90000 Ni CA,PH \$13.89 \$1242	29 68000 Cu CL,PE,CN \$5.95 \$8470 ^{5N}	30 79000 Zn CN,PE,US \$2.58 \$915 ^{5N}	31 19000 Ga CN,DE,GB \$150 \$5860 ^{6N}	32 1400 Ge CN,RU,CA \$920 \$12670 ^{5N}	33 2100 As CN,MA,JP \$4.63 \$3039	34 50 Se JP,DE,CN \$44.09 \$1612 ^{5N}	35 3000 Br IL,CN,JO \$2.19 \$1103 ^{4N+}	36 0.15 Kr				
37 60000 Rb CA N/A \$33800 ^{2N75}	38 360000 Sr CN,MX \$0.08 \$277600 ^{3N5}	39 29000 Y CN,EE,JP \$34 \$13680 ^{2N6}	40 130000 Zr ZA,AU \$16 \$8560 ^{3N}	41 17000 Nb BR,CA \$23 \$1630 ^{3N5}	42 1100 Mo CN,CL,US \$26.00 \$4070	43 0 Tc	44 1 Ru ZA \$15920 \$65320*	45 0.7 Rh ZA \$106097.38 \$490000*	46 6.3 Pd ZA,RU \$48226.08 \$88080*	47 80 Ag MX,PE,CN \$520.84 \$7290*	48 150 Cd CN,KR,CA \$2.60 \$2404	49 160 In CA,CN,KR \$210 \$5016	50 2200 Sn CN,ID,BR \$18.52 \$6700	51 200 Sb CN,MA,JP \$8.60 \$3192	52 1 Te RU,SE,JP \$70 \$2140	53 490 I CL,JP \$26.00 \$2512	54 0.02 Xe				
55 1900 Cs CA N/A \$24160 ^{3N8}	56 340000 Ba CN,IN \$0.18 \$37200 ^{3N}	57-71 Lanthanide	72 3300 Hf DE,FR,GB \$830 \$8440 ^{3N}	73 1700 Ta CN,KZ,DE \$162 \$2714	74 1100 W CN,VN,CA \$0.14 \$4580	75 2.6 Re CL,US,PL \$1300 \$59400	76 1.8 Os ZA,RU N/A \$116000 ^{3N5}	77 0.4 Ir ZA \$48226.08 \$127200*	78 37 Pt ZA,DE,GB \$27328.11 \$229600*	79 3.1 Au CN,AU,US \$45011.01 \$148000*	80 1850 Hg CN,MX,AR \$73.91 \$454 ^{SA,5N5}	81 530 Tl DE,RU \$7600 \$8420 ^{4N}	82 10000 Pb CN,CA,MX \$2.01 \$1774 ^{5N}	83 25 Bi CN,VN,BE \$7.50 \$211.50	84 0 Po	85 0 At	86 0 Rn				
87 0 Fr	88 0.0001 Ra	89-103 Actinide	104 0 Rf	105 0 Db	106 0 Sg	107 0 Bh	108 0 Hs	109 0 Mt	110 0 Ds	111 0 Rg	112 0 Cn	113 0 Nh	114 0 Fl	115 0 Mc	116 0 Lv	117 0 Ts	118 0 Og				

Country Codes

AR-Argentina; AU-Australia;
 BE-Belgium; BR- Brazil; BY- Belarus;
 CA-Canada; CD-Congo; CL-Chile;
 CN-China; DE-Germany; EE-Estonia;
 FR-France; GA- Gabon; GB-Great
 Britain; ID-Indonesia; IN-India; IL-Israel;
 JO-Jordan; JP-Japan; KR-S. Korea;
 KZ-Kazakhstan; MA-Morocco;
 MX-Mexico; PE-Peru; PH-Philippines;
 PL-Poland; RU-Russia; SE- Sweden; US-
 United States; VN- Vietnam; ZA-S.
 Africa

57 34000 La CN \$2 \$21640	58 60000 Ce CN \$2 \$30040	59 8700 Pr CN \$112 \$24840	60 33000 Nd CN \$45 \$20320	61 0 Pm	62 6000 Sm CN \$61 \$11400	63 1800 Eu CN \$35 \$90200	64 6200 Gd CN \$55 \$14880	65 940 Tb CN \$510 \$30960	66 6200 Dy CN \$240 \$55160	67 1200 Ho CN N/A \$22080	68 3000 Er CN N/A \$22000	69 450 Tm CN N/A \$169800	70 2800 Yb CN N/A \$24260	71 560 Lu CN N/A \$150200
89 0 Ac	90 6000 Th IN,FR,GB \$65 N/A	91 0.00001 Pa	92 1800 U KZ,CA,AU \$63.89 N/A	93 0 Np	94 0 Pu	95 0 Am	96 0 Cm	97 0 Bk	98 0 Cf	99 0 Es	100 0 Fm	101 0 Md	102 0 No	103 0 Lr

Sources: Abundances: webelements.com 06/2020

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Countries/Market Value/Import Reliance¹: USGS Mineral Commodity Summary 2020 (<https://pubs.usgs.gov/periodicals/mcs2020/mcs2020.pdf>) ; Pt group information: USGS 1802-N, 99% ; Pr, Sm, Gd Prices: USGS SIR 2012-5188, 99%

1. Import Reliance defined as net import reliance as a percentage of apparent consumption

2. High Purity Pricing: Alfa Aesar, unless ^{SA}: Sigma-Aldrich, Oxygen Pricing: Intratec, 2010,High purity pricing listed is Puratronic if available; * denotes Premion; otherwise purity noted next to price. La-Lu 99.9% purity.

3. <https://www.federalregister.gov/documents/2018/05/18/2018-10667/final-list-of-critical-minerals-2018> The list also includes barite, fluorspar, graphite, potash