The Periodic Table of the Stable Isotopes 1 - 83

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Abstract: In MHCE8S theory the stable isotopes are of special interest. Data from Wikipedia. 1st duplication is for sulfur.

1	hydrogen	1, 2	**duplications**	density	0.07
2	helium	3, 4		g/cm^3	0.14
3	lithium	6, 7			0.53
4	berylium	5, 9			1.85
5	boron	10, 11			2.08
6	carbon	12, 13			2.27
7	nitrogen	14, 15			0.80
8	oxygen	16, 17, 18			1.14
9	fluorine	19	abundances		1.70
10	neon	20, 21, 22	90.4%, 0.27, 9.25		1.21
11	sodium	23			0.96
12	magnesium	24, 25, 26	79.0%, 10.0, 11.0,		1.73
13	aluminium	27			2.70
14	silicon	28, 29, 30	92.2%, 4.7, 3.1		2.33
15	phosphorus	31			2.34
16	sulfur	32, 33, 34, **36**	94.99%, 0.75, 4.25, 0.01		1.84
17	chlorine	35, 37			1.56
18	argon	**36**, 38, **40**	0.33%, 0.06, 99.6		1.39
19	potassium	39,41			0.86
20	calcium	**40**,42,43,44,**46**	96.9%,0.65,0.135,209,0.004		1.55
21	scandium	45			2.98
22	titanium	**46**, 47, 48, 49, **50**	8.2%, 7.4, 73.7, 5.4, 5.18		4.51
23	vanadium	51			6.11
24	chromium	**50,** 52, 53, **54**	4.34**%**, 83.7, 9.50, 2.36		7.19
25	manganese	55			7.21
26	iron	**54,** 56, 57,**58**	5.85%, 91.75, 2.12, 0.28		7.87
27	cobalt	59			8.90

28 nickel **58**, 60, 61, 62, **64** 68.08%, 26.2,1.14,3.63,0.93 8.90

The first duplicated stable isotope is for sulfur - argon. Now sulfur has the most allotropes of any element (30) and our bodies contain several pounds of it. Argon gas **40** is a very useful refrigerant and a much - used display agent. Calcium **40** is abundant and important for growing plants and bones. Titanium 48 is a light but strong metal of growing importance. Chromium 52 is anti-corrosive and very handsome as metal plating. Iron 56 has long been one of modern (1000 years) mankind's most useful metals, largely replacing bronze. Nickel **58** is a handsome metal plating similar to chromium but less harmful to the environment to refine. Nickel 60 and 62 are also important as the two strongest binding nuclei known.

Take unduplicated stable isotopes, find sum for 28 nickel - 50 tin: (1 x 8) + (2 x 8) + (3 x 4) +(5 x 1) = 8+8+4+1 = **21.** Now 50 tin-28 nickel periodic table entrants (22) include technetium which is very useful medically for its radioactive action (no gamma ray production) yet is considered to be stable. **nature** apparenly is alerting us to this fact- see page 3.

			unduplicated stable isotopes	
28	nickel	**58,** 60 , 61, 62, **64**	3	8.90
29	copper	63, 65	2	8.96
30	zinc	**64,** 66, 67, 68, **70**	3	7.14
31	gallium	69, 71	2	5.91
32	germanium	**70**, 72, 73, **74**	2	5.32
33	arsenic	75	1	5.72
34	selenium	**74**, 76, 77, 78, **80**	3	4.28
35	bromine	79, 81	2	3.10
36	krpton	**80,** 82, **83**, **84, 86**	1	2.41
37	rubdium	**83**		3.53
38	strontium	**84, 86**, 87. 88	2	2.64

39	yttrium	89	1	4.47
40	zirconium	90, 91, **92, 94**	2	6.52
41	niobium	93	1	8.57
42	molybdenum	**92, 94,** 95, **96,** 97, **98**	2	10.28
43	technetium 0	count as stable		11
44	ruthenium	**96, 98,** 99, 100, 101, **102, 104**	3	12.45
45	rhodium	103	1	12.41
46	palladium	**102, 104,** 105, **106, 108, 110**	1	12.02
47	silver	107, 109	2	12.49
48	cadmium	**106, 108, 110,** 111, **112, 114**	1	8.65
49	indium	113	1	7.31

Take unduplcated stable isotopes 50 tin - 82 lead:
(16 x 1) + (6 x 2) +(4 x 3) + (5 x 4) + (1 x 5) = 16 + 6 + 4 + 5 + 1 = **32.** Now lead 82 - tin 50 = **32** also**. Nature** now evidently agrees that promethium is best considered as a stable element since it has no medically useful radioactivity and is very rare also.

50	tin	**112,114**,115,116,117,118,119,**120,122,124**	5	7.28
51	antimony	121, **123**	1	6.69
52	tellurium	**120, 122, 123, 124,** 125, **126**	1	6.24
53	iodine	127	1	4.93
54	xenon	**126**, 128, 129, 130, 131, **132**, **134**	4	2.94
55	cesium	133	1	1.93
56	barium	**132**, **134**, 135, **136**, 137, **138**	2	3.51
57	lanthanum	139	1	6.16
58	cerium	**136**, **138**, 140, **142**	1	6.77
59	praseodymim	141	1	6.77
60	neodymium	**142**, 143, 145, 146	3	7.01
61	promethium 0	count as stable		7.26
62	samarium	144, 149, 150, 152, **154**	4	7.51
63	europium	153	1	5.26
64	gadolinium	**154**, 155, **156**, 157, **158**, **160**	2	7.9

65 terbium	159	1	8.23
66 dysprosium	**156,158**,**160**,161,**162**,163,**164**	2	8.54
67 holmium	165	1	8.79
68 erbium	**162**, **164**, 166, 167, **168**, **170**	2	9.06
69 thulium	169	1	9.32
70 ytterbium	**168**, **170**, 171, 172, 173, 174, **176**	4	6.90
71 lutetium	175	1	9.84
72 hafnium	**176**, 177, 178, 179, **180**	3	13.31
73 tantalum	**180**, 181	1	16.69
74 tungsten	182, 183, **184**, 186	3	19.3
75 rhenium	185	1	21.02
76 osmium	**184**, 187, 188, 189, 190, **192**	4	22 .59
77 iridium	191, 193	2	22.56
78 platinum	**192**, 194, 195, **196**, **198**	2	21.45
79 gold	197	1	19.30
80 mercury	**196**,**198**,199,200,201,202,**203**,**204**	4	13.53
81 thallium	**203**, 205	1	11.85
82 lead	**204**, 206, 207, 208	3	11.31

83 bismuth 0 (2 x 10^19 yr) counts as stable but it is weakly radioactive

84 polonium 0 unstable without a doubt

Also stable isotopes not duplicated for atomic nos. 28 - 82 = 50+**4**. now 50 is also the atomic number of tin, so useful in forming the alloy bronze which led to the the rise of the civilization of greece. 4 also indicates the number of genome types every person carries and the number of cyclic universes which have ocurred and most importantly the number by which the critical value of Hubble's constant exceeds the actual value reached (see my ViXra #96 1905.0606). Lastly, we wish to point out technetium's need for classifiction change is being signalled to us by its near-maximum density vs. 1/2 that of osmium (similar action to that of 82 lead).