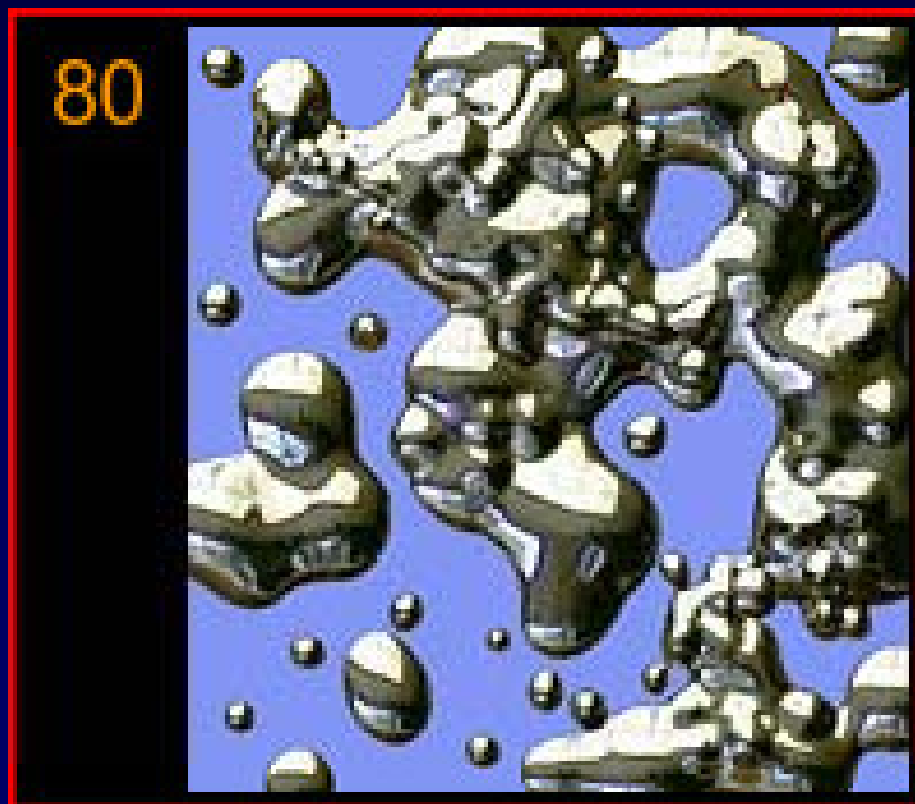


Mercury (Hg) and its uses

Facts about Hg

- ❖ Mercury is a heavy, silvery, liquid metal
- ❖ Atomic # 80
- ❖ Atomic Mass 200.59
- ❖ Melting Point 234 K
- ❖ Boiling Point 629 K
- ❖ Density 13546 kg m⁻³



Periodic Table

1A												8A					
1	2A											3A	4A	5A	6A	7A	2
1 H 1.008												5 B 10.81	6 C 12.01	7 N 14.01	8 O 16.00	9 F 19.00	10 Ne 20.18
3 Li 6.941	4 Be 9.012											13 Al 26.98	14 Si 28.09	15 P 30.97	16 S 32.06	17 Cl 35.45	18 Ar 39.95
11 Na 23.00	12 Mg 24.31	3B	4B	5B	6B	7B	8B			1B	2B						
19 K 39.10	20 Ca 40.08	21 Sc 44.96	22 Ti 47.90	23 V 50.94	24 Cr 52.00	25 Mn 54.94	26 Fe 55.85	27 Co 58.93	28 Ni 58.70	29 Cu 63.55	30 Zn 65.38	31 Ga 69.72	32 Ge 72.59	33 As 74.92	34 Se 78.96	35 Br 79.90	36 Kr 83.80
37 Rb 85.47	38 Sr 87.62	39 Y 88.91	40 Zr 91.22	41 Nb 92.91	42 Mo 95.94	43 Tc (98)	44 Ru 101.1	45 Rh 102.9	46 Pd 106.4	47 Ag 107.9	48 Cd 112.4	49 In 114.8	50 Sn 118.7	51 Sb 121.8	52 Te 127.6	53 I 126.9	54 Xe 131.3
55 Cs 132.9	56 Ba 137.3	57 La 138.9	72 Hf 178.5	73 Ta 180.9	74 W 183.9	75 Re 186.2	76 Os 190.2	77 Ir 192.2	78 Pt 195.1	79 Au 197.0	80 Hg 200.6	81 Tl 204.4	82 Pb 207.2	83 Bi 209.0	84 Po (209)	85 At (210)	86 Rn (222)
87 Fr (223)	88 Ra 226.0	89 Ac 227.0	104 Rf (261)	105 Ha (262)	106 Unh (263)	107 Uns (262)		109 Une (267)									

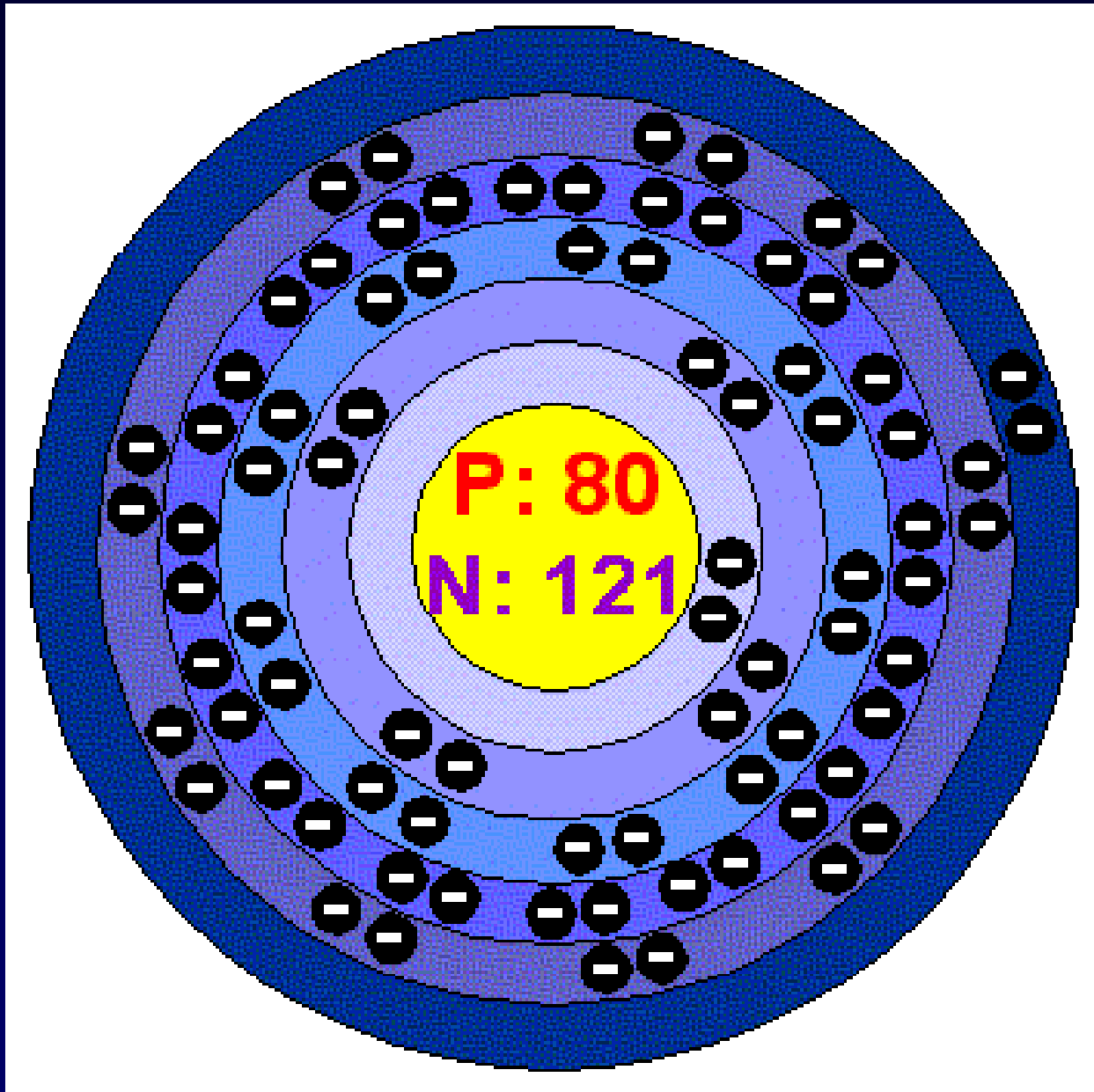
↑
Mercury

Lanthanides

58 Ce 140.1	59 Pr 140.9	60 Nd 144.2	61 Pm (145)	62 Sm 150.4	63 Eu 152.0	64 Gd 157.3	65 Tb 158.9	66 Dy 162.5	67 Ho 164.9	68 Er 167.3	69 Tm 168.9	70 Yb 173.0	71 Lu 175.0
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Actinides

90 Th 232.0	91 Pa 231.0	92 U 238.0	93 Np 237.0	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (260)
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Where does Hg come from?



Cinnabar

- ❖ Mercury occurs very rarely free in nature, but can be found in ores, principally cinnabar.
- ❖ This is mostly found in Spain and Italy, which together produce about 50% of the world's supply of this element.
- ❖ The metal is obtained by heating cinnabar in a current of air and condensing the vapor.



Uses of Hg

- ❖ Mercury easily forms alloys, called amalgams, with other metals such as gold, silver and tin (mining).
- ❖ Used in making advertising signs, mercury switches and other electrical apparatus.
- ❖ Used in labs for making thermometers, barometers, diffusion pumps and many other instruments.
- ❖ Other uses: pesticides, dental work, batteries and catalysts.
- ❖ Because of its toxicity, all these uses of mercury are being phased out or are under review.