

Instructions for the carrier:

Pass this onto Glorfindel of Imladris. He will be wearing a pair of gloves, and carrying another. In order to let him know that you have the required documentation, carry a carrot.

Divulging information to any other will compromise our hobbits in the field.

The Noldor have discovered a thing which they call carbon. It strengthens their steel and makes it able to bend, but not be broken. Through Maeglin son of Eol, we have discovered its secrets.

Attached is a drawing of the things which Curufin calls "Elements." These could become very useful for future endeavors. Also a special thanks to the hobbit, Bullroarer Took, for his time in making the sketch:

1																	2
1 1,008* H hidrogeno																	2 4,003 He heliumo
3 6,94* Li litio	4 9,012 Be berilio																
11 22,99 Na natrio	12 24,31* Mg magnezio																
19 39,10 K kalio	20 40,08 Ca kalcio	21 44,96 Sc skandio	22 47,87 Ti titanio	23 50,94 V vanado	24 52,00 Cr kromo	25 54,94 Mn mangano	26 55,85 Fe fero	27 58,93 Co kobalto	28 58,69 Ni nikelo	29 63,55 Cu kupro	30 65,38* Zn zinko	31 69,72 Ga galio	32 72,63 Ge germaniumo	33 74,92 As arseno	34 78,96* Se seleno	35 79,90* Br bromo	36 83,80 Kr kriptono
37 85,47 Rb rubidio	38 87,62 Sr stroncio	39 88,91 Y itrio	40 91,22 Zr zirkonio	41 92,91 Nb niobio	42 95,96* Mo molibdeno	43 [98] Tc teknecio	44 101,1 Ru rutenio	45 102,9 Rh rodio	46 106,4 Pd paladio	47 107,9 Ag arĝento	48 112,4 Cd kadmio	49 114,8 In indio	50 118,7 Sn stano	51 121,8 Sb antimono	52 127,6 Te teluro	53 126,9 I jodo	54 131,3 Xe ksenono
55 132,9 Cs cezio	56 137,3 Ba bario	57-71	72 178,5 Hf hafnio	73 180,9 Ta tantalio	74 183,8 W volframo	75 186,2 Re renio	76 190,2 Os osmio	77 192,2 Ir iridio	78 195,1 Pt plateno	79 197,0 Au oro	80 200,6 Hg hidrargo	81 204,4 Tl talio	82 207,2 Pb plumbo	83 209,0 Bi bismuto	84 [209] Po polonio	85 [210] At astato	86 [222] Rn radono
87 [223] Fr franciumo	88 [226] Ra radiumo	89-103	104 [267] Rf ruterfordio	105 [268] Db dubnio	106 [269] Sg seborgio	107 [270] Bh borio	108 [269] Hs hasio	109 [278] Mt mejtnerio	110 [281] Ds damŝtatio	111 [281] Rg rentgenio	112 [285] Cn kopernicio	113 [286] Uut ununtrio	114 [289] Fl florovumo	115 [288] Uup ununpentio	116 [293] Lv livermorumo	117 [294] Uus ununseptio	118 [294] Uuo ununoktio
*H: [1,00784, 1.00811] Li: [6,938, 6.997] B: [10,806, 10.821] C: [12,0096, 12.0116] N: [14,00643, 14.00728] O: [15,99903, 15.99977] F: [18,9984, 18.9994] Si: [28,0859, 28.086] S: [32,059, 32.076] Cl: [35,446, 35.457] Br: [79,901, 79.907] Ti: [204,382, 204.385] Zn: 65,38(2) Se: 78,96(2) Mo: 95,96(2)																	
57 138,9 La lantano	58 140,1 Ce cerio	59 140,9 Pr prazeodimo	60 144,2 Nd neodimo	61 [145] Pm prometio	62 150,4 Sm samario	63 152,0 Eu eŭropio	64 157,3 Gd gadolinio	65 158,9 Tb terbio	66 162,5 Dy disprozio	67 164,9 Ho holmio	68 167,3 Er erbio	69 168,9 Tm tulio	70 173,1 Yb iterbio	71 175,0 Lu lutecio			
89 [227] Ac aktinio	90 232,0 Th torio	91 231,0 Pa protaktinio	92 238,0 U uranio	93 [237] Np neptunio	94 [244] Pu plutonio	95 [243] Am americio	96 [247] Cm kuriumo	97 [247] Bk berkelio	98 [251] Cf kalifornio	99 [252] Es ejnŝtejnio	100 [257] Fm fermio	101 [258] Md mendelevio	102 [259] No nobelio	103 [262] Lr laŭrencio			

You will see that Carbon is in the second period, which are the horizontal lines. It is labeled "C," and has a number of six above it. This is extremely important as this six tells us how many protons, neutrons, and electrons carbon has. It has a mass of 12.011. As you know, I am not skilled with the workings of earth's raw materials, as wood is all I need to make my weapons of war and hunt. Carbon is as the Noldor say a "Reactive nonmetal." The elements' configuration is as follows: $1s^2 2s^2 2p^2$, and this strange element has four valence electrons. Carbon has an atomic radius of 67 PM and has fifteen different isotopes. In its most common isotope, which is carbon 12, carbon has six of everything.

Maeglin has learned from the Noldor that carbon is in the air we breathe at room temperature! Its density at STP is 0.00196 g/mL, and its electronegativity is 2.55. Last, but not least, carbon melts at 3367 degrees on the Feanorian scale and it boils at 4827 degrees on the same scale. I pray to Manwe that this information can help the Elves prepare for war against the greedy Noldor.

Carbon was seen in the following equations in one of Curufin's workshops:

- 1) CO_2
- 2) CO
- 3) CS_2
- 4) $C_6H_{12}O_6$
- 5) C (Carbon and Graphite)

Unfortunately, this element will not explode in any way. We will not be able to blow up our enemies with this element. We will be able to use it in

the making of steel though. It strengthens the iron, and makes it harder to break. We will be able to use this knowledge when we make our weapons. In addition, Carbon is everywhere, so it will not be hard to come by.