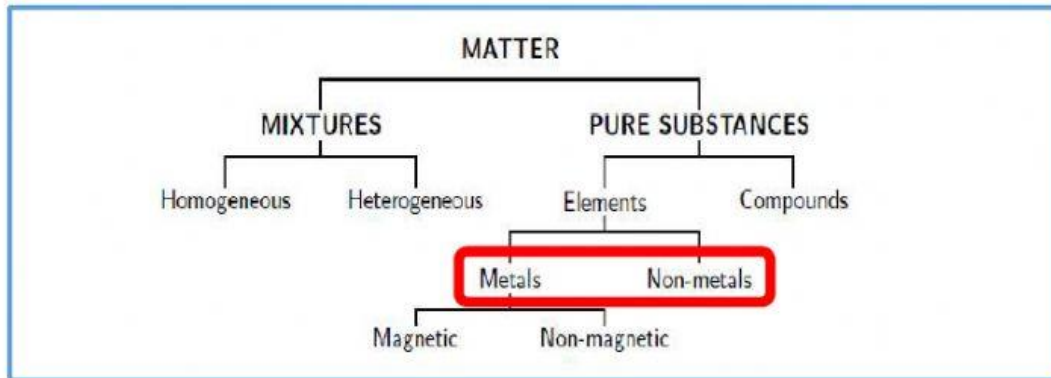


# MATTER AND MATERIALS – Worksheet 2



Label the Periodic Table below to show which part contains Metals and which part contains Non-metals:

TABEL 3: DIE PERIODIEKE TABEL VAN ELEMENTE  
TABLE 3: THE PERIODIC TABLE OF ELEMENTS

I		SLEUTEL / KEY										III		IV	V	VI	VII	0																								
1 H 1,008	II	Atoomgetal Simbool Relatiewe atoommassa										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	19 Cu 63,55 Atomic number Symbol Relative atomic mass										13 Al 26,98	14 Si 28,09	15 P 30,97	16 S 32,07	17 Cl 35,45	18 Ar 39,95																									
11 Na 22,99	12 Mg 24,31	19 K 39,10	20 Ca 40,08	21 Sc 44,96	22 Ti 47,88	23 V 50,94	24 Cr 52,00	25 Mn 54,94	26 Fe 55,85	27 Co 58,93	28 Ni 58,69	29 Cu 63,55	30 Zn 65,39	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 92,21	42 Mo 95,94	43 Tc	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	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	85 At	86 Rn																									
87 Fr	88 Ra 226,1	89 Ac	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="border: 1px solid black;">58 Ce 140,1</td> <td style="border: 1px solid black;">59 Pr 140,9</td> <td style="border: 1px solid black;">60 Nd 144,2</td> <td style="border: 1px solid black;">61 Pm</td> <td style="border: 1px solid black;">62 Sm 150,4</td> <td style="border: 1px solid black;">63 Eu 152,0</td> <td style="border: 1px solid black;">64 Gd 157,3</td> <td style="border: 1px solid black;">65 Tb 158,9</td> <td style="border: 1px solid black;">66 Dy 162,5</td> <td style="border: 1px solid black;">67 Ho 164,9</td> <td style="border: 1px solid black;">68 Er 167,3</td> <td style="border: 1px solid black;">69 Tm 168,9</td> <td style="border: 1px solid black;">70 Yb 173,0</td> <td style="border: 1px solid black;">71 Lu 175,0</td> </tr> <tr> <td style="border: 1px solid black;">90 Th 232,0</td> <td style="border: 1px solid black;">91 Pa</td> <td style="border: 1px solid black;">92 U 238,0</td> <td style="border: 1px solid black;">93 Np</td> <td style="border: 1px solid black;">94 Pu</td> <td style="border: 1px solid black;">95 Am</td> <td style="border: 1px solid black;">96 Cm</td> <td style="border: 1px solid black;">97 Bk</td> <td style="border: 1px solid black;">98 Cf</td> <td style="border: 1px solid black;">99 Es</td> <td style="border: 1px solid black;">100 Fm</td> <td style="border: 1px solid black;">101 Md</td> <td style="border: 1px solid black;">102 No</td> <td style="border: 1px solid black;">103 Lr</td> </tr> </table>										58 Ce 140,1	59 Pr 140,9	60 Nd 144,2	61 Pm	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	90 Th 232,0	91 Pa	92 U 238,0	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr		
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Properties of Metals and Non-metals:

Drag each of the properties below into the relevant column.

Don't have lustre (dull)

Low boiling point

Good electrical insulators

Have lustre (shiny)

Poor thermal conductors

High melting point

Conduct heat

Not ductile

Brittle

Ductile

Conduct electricity

Malleable

METALS	NON-METALS

Which properties of metal make it useful for:

a) **electrical wires** (there may be more than one correct answer)

Dull	Conduct heat
Low boiling point	Not ductile
Good electrical insulators	Brittle
Shiny	Ductile
Poor thermal conductors	Conduct electricity
High melting point	Malleable

b) **cooking pots and utensils**

Dull	Conduct heat
Low boiling point	Not ductile
Good electrical insulators	Brittle
Shiny	Ductile
Poor thermal conductors	Conduct electricity
High melting point	Malleable

c) **jewellery**

Dull	Conduct heat
Low boiling point	Not ductile
Good electrical insulators	Brittle
Shiny	Ductile
Poor thermal conductors	Conduct electricity
High melting point	Malleable

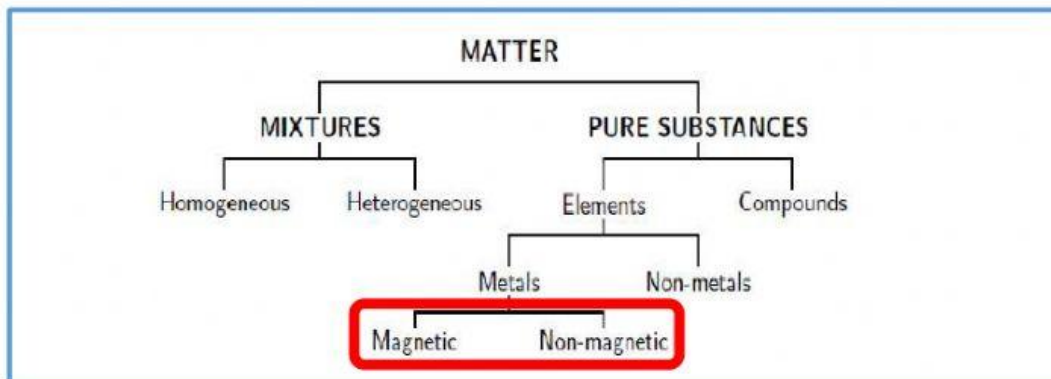
**Semi-metals or metalloids** are substances that have both metal and non-metal properties. The symbols of the metalloids on the periodic table are:

B, , , , , , , , ,

Metalloids are semi-conductors, but unlike with metals, their conductivity as their temperature .

Elements can also be classified into 3 groups according to their **conductivity**. Draw lines to link the correct items in the table below:

<b>Conductors</b>	Non-metals
<b>Semi-conductors</b>	Metals
<b>Insulators</b>	Semi-metals / Metalloids



is one of the phenomena by which materials exert attractive or repulsive forces on other materials.

Examples of ferromagnetic elements (naturally attracted to magnets and can easily be made into a magnet):