

## Bond polarity

1) Use the periodic table below to determine the type of bond formed (ionic, non-polar covalent or polar covalent) between the following atoms:

- |             |             |
|-------------|-------------|
| a) H and Cl | f) Mg and O |
| b) Li and F | g) H and F  |
| c) Na and S | h) K and Br |
| d) N and N  | i) C and Cl |
| e) C and O  | j) C and N  |

H 2.1																	He
Li 1.0	Be 1.5											B 2.0	C 2.5	N 3.0	O 3.5	F 4.0	Ne
Na 0.9	Mg 1.2											Al 1.5	Si 1.8	P 2.1	S 2.5	Cl 3.0	Ar
K 0.8	Ca 1.0	Sc 1.3	Ti 1.5	V 1.6	Cr 1.6	Mn 1.5	Fe 1.8	Co 1.8	Ni 1.8	Cu 1.9	Zn 1.6	Ga 1.6	Ge 1.8	As 2.0	Se 2.4	Br 2.8	Kr 3.0
Rb 0.8	Sr 1.0	Y 1.2	Zr 1.4	Nb 1.6	Mo 1.8	Tc 1.9	Ru 2.2	Rh 2.2	Pd 2.2	Ag 1.9	Cd 1.7	In 1.7	Sn 1.8	Sb 1.9	Te 2.1	I 2.5	Xe 2.6
Cs 0.7	Ba 0.9	La 1.1	Hf 1.3	Ta 1.5	W 1.7	Re 1.9	Os 2.2	Ir 2.2	Pt 2.2	Au 2.4	Hg 1.9	Tl 1.8	Pb 1.8	Bi 1.9	Po 2.0	At 2.2	Rn 2.4
Fr 0.7	Ra 0.7	Ac 1.1	Unq	Unp	Unh	Uns	Uno	Une									
Ce 1.1	Pr 1.1	Nd 1.1	Pm 1.1	Sm 1.1	Eu 1.1	Gd 1.1	Tb 1.1	Dy 1.1	Ho 1.1	Er 1.1	Tm 1.1	Yb 1.1	Lu 1.2				
Th 1.3	Pa 1.5	U 1.7	Np 1.3	Pu 1.3	Am 1.3	Cm 1.3	Bk 1.3	Cf 1.3	Es 1.3	Fm 1.3	Md 1.3	No 1.3	Lr				

MSJChem – Topic 4 – Bond polarity

**Answers:**

a) H and Cl **polar covalent**

f) Mg and O **ionic**

b) Li and F **ionic**

g) H and F **polar covalent**

c) Na and S **ionic**

h) K and Br **ionic**

d) N and N **non-polar covalent**

i) C and Cl **polar covalent**

e) C and O **polar covalent**

j) C and N **polar covalent**

<b>Electronegativity difference</b>	<b>Type of bonding</b>
<b>0.0 - 0.4</b>	<b>Non-polar covalent</b>
<b>0.5 - 1.7</b>	<b>Polar covalent</b>
<b><math>\geq 1.8</math></b>	<b>Ionic</b>