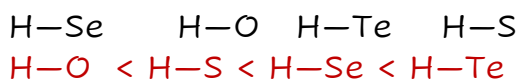


Bond Length, Bond Strength, and Electronegativity

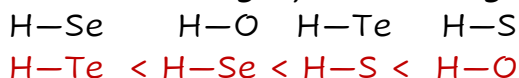
Define bond length *The minimum energy distance between nuclei in a covalent bond.*

What is bond dissociation energy, D? *The amount of energy required to break a chemical bond in an isolated molecule in the gas state.*

Order the following by increasing bond length.

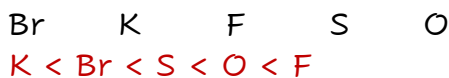


Order the following by increasing bond strength.

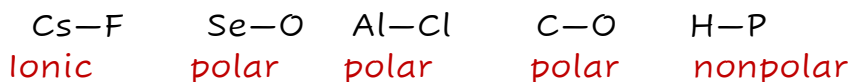


Electronegativity increases going across a period and decreases going down a group on the periodic table.

Order the following elements from smallest to largest electronegativity.



Classify the following bonds as polar, nonpolar, or ionic.



Electronegativity Values

1A												8A					
H	2A											3A	4A	5A	6A	7A	He
2.1												B	C	N	O	F	Ne
Li	Be											2.0	2.5	3.0	3.5	4.0	
Na	Mg											Al	Si	P	S	Cl	Ar
0.9	1.2											1.5	1.8	2.1	2.5	3.0	
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
0.8	1.0	1.3	1.5	1.6	1.6	1.5	1.8	1.9	1.9	1.9	1.6	1.6	1.8	2.0	2.4	2.8	
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
0.8	1.0	1.2	1.4	1.6	1.8	1.8	2.2	2.2	2.2	1.9	1.7	1.7	1.8	1.9	2.1	2.5	
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
0.7	0.9	1.1	1.3	1.5	1.7	1.9	2.2	2.2	2.2	2.4	1.9	1.8	1.9	1.9	2.0	2.1	