

electrons or gaining electrons to attain a noble gas electron configuration	with each other in order to attain a noble gas electron configuration
Electrostatic attraction between oppositely charged ions	Electrostatic attraction between a shared pair of electrons and the positively charged nuclei
lattice structures	molecules
higher melting and boiling points	lower melting and boiling points
low volatilities	may be volatile
soluble in water	insoluble in water
conductors when molten; not conductors when solids	never are conductors

10. molecular forces and boiling points -

(N, O, F) Hydrogen bonding - strongest - highest boiling point

(ionic) Dipole Dipole - 2nd strongest - 2nd highest boiling point

(all) London (van der Waals) - weakest - lowest boiling point

11. Carbon Allotropes

Graphite	covalent network solid; each carbon atom is covalently bonded to 3 other carbon atoms.	London forces between hexagonal layers are weak and make it a good lubricant. Good conductor of electricity.
Graphene	covalent network solid; each carbon atom is covalently bonded to 3 other carbon atoms.	one atom thick. excellent thermal and electrical conductor. 2-D crystal.
Diamond	covalent network solid; lattice structure; each carbon atom is covalently bonded to 4 other carbon atoms	one of the hardest because of the tetrahedra. DO NOT conduct electricity. insoluble in all common solvents
C ₆₀ fullerene	molecular; each carbon atom is covalently bonded to three others	20 hexagonal surfaces and 12 pentagonal surfaces. DO NOT conduct electricity. soluble in some nonpolar solvents