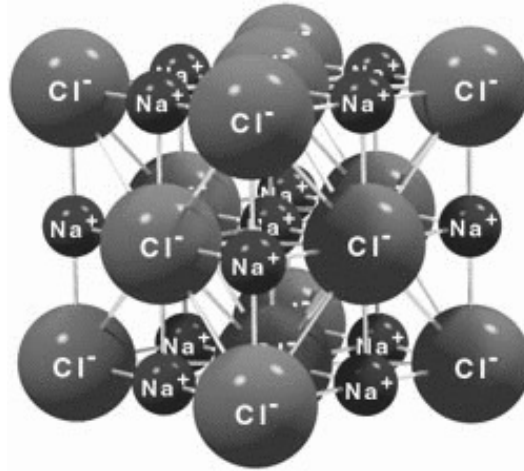


Macromolecules vs Discrete Covalent Molecules

Macromolecules:

- have ionic, metallic or possibly covalent intramolecular bonds (intramolecular = within or inside a molecule bond)
- very large molecules, big enough to see with the unaided eye
- will have an empirical formula only (lowest terms formula) - eg NaCl , MgCl_2 , Au , C_n , SiO_2
- do not have clearly defined boundaries, exact size is difficult to determine
- will often form a crystal lattice structure (lattice structure = a regularly repeating arrangement of atoms or ions)
- a crystal of salt, a diamond or a metal ring are all examples of individual macromolecules that are big enough to see



Discrete Covalent Molecules:

- covalent bonding only (intramolecular)
- very small molecules (true molecules)
- will have a molecular formula (tells you the exact number of atoms per molecule) (could also have an empirical formula) - eg $C_6H_{12}O_6$, C_4H_{10} , H_2O and NH_3
- clear exact number of atoms per molecule
 - H_2O has three atoms per molecule
 - $C_6H_{12}O_6$ has 24 atoms per molecule
- may form molecular solids which are composed of molecules arranged in a lattice held together by intermolecular forces (intermolecular = between molecule force, outside and between molecules)
- intermolecular forces only occur with discrete covalent molecules

