

composed of:

molecular
molecules

ionic
ions

atomic
atoms

metallic
atoms

Network
covalent
atoms

lattice sites;
in crystal

molecules

ions

atoms

atoms

atoms

Bonding

intermolecular
forces (IMF)

ionic
bonds

IMF

"metallic"
"sea electrons"

covalent

Bp

low

high

low

high

high

mp

low

high

low

high

high

Examples:

H_2O mp = 0°C

NH_3 mp = -77°C

CS_2 mp = -110

NaCl
mp = 801°C

Ne, Kr, Cl_2
↓

Cl_2 mp = -151°C

Fe mp = 1100°C

↑ mp = 3900°C
 C (s)
diamond

SiO_2

conductivity:

not

only when
melted or
molten

not

solid and
liquid is
conductive.

not

Bonding
Example

