|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| COVALENTNONPOLARI.C < 0.4SYMETRICAL**BOND TYPE** | COVALENT POLARI.C. 0.4 – 1.7ASYMETRICAL | IONICI.C. > 1.7GROUP 1 METAL | METALLIC**METAL ATOM FROM LEFT OF P TABLE** | COVALENT NETWORK CRYSTAL SOLID | HYDROGEN BONDINGDIPOLE ATTRACTION | NOBLE GAS AND OTHER UNCOMBINED ATOMS |
|  COVALENT EVENLY SHARED  | COVALENT UNEQUAL SHARING | TRANSFER OF ELECTRON FROM METAL TO NON-METAL. | METALLIC SEA OF MOBILE ELECTRONS | COVALENT | WHEN H IS DIRECTLY COVALENTLY (POLAR) BONDED TO F, O, N | NONE |
| **ATTRACTIONS**VAN DER WAALS. LONDON DISPERSIONINSOLUBLE IN WATER**M.P./B.P.** | DIPOLE ATTRACTIONSOLUBLE IN WATER | IONICSOLUBLE IN WATER | “STRONG” VAN DER WAALSINSOLUBLE IN WATER | NONE…ACTUAL COVALENT BONDS CONNECT ATOMSINSOLUBLE IN WATER | H-BOND…WHICH IS A VERY STRONG DIPOLE ATTRACTIONSOLUBLE IN WATER | VAN DER WAALS,LONDON DISPERSION |
| VERY LOWINCREASE WITH MOLAR MASS | LOWINCREASE WITH MOLAR MASS | HIGHINCREASE WITH IONIC CHARACTER | HIGH | VERY HIGH | LOW, HIGHER THAN OTHER DIPOLE AND VAN DER WAALS. INCREASE WITH IONIC CHARATER | LOW FOL LOW ATOMIC MASS, HIGHER FOR HEAV Y ATOMIC MASS |
|  NEVER |  NEVER | AS (AQ) AND (L), (MOBILE IONS)NOT AS (S) | AS A SOLIDAND ALL PHASES | NEVER | NEVER | NON-METALS NEVER.METALS ALWAYS |

**CONDUCTIVITY**

EX—METALS-GROUP 1, 2 OTHERS LIKE Au, Ag, Fe, Mn,

Non metal..O2,F2,N2 ETC

EX—C(S) DIAMOND, C(S) GRAPHITE, SiO2

EX—C(S) DIAMOND, C(S) GRAPHITE, SiO2

EX-- Na, Ca, Mg, Fe, Ni, Au, Ag ETC

EX-- NaCl, CaCl2, MgO

EX-- NH3, H2O, HCl, HF, H2S

EX-- CO2, CH4, H2, N2, Cl2