

Chemical Bonding

Chemistry

The three bond types, and what determines which forms.

By electronegativity difference and by properties.

Bond	Forms between	Properties
Ionic	Metal + non-metal	High mp, conducts when molten
Covalent	Non-metal + non-metal	Low mp, poor conductor
Metallic	Metal + metal	Conducts, malleable, lustrous
Polar covalent	Unequal sharing	Dipole; intermediate

A difference above roughly 1.7 is usually ionic; below 0.4 is essentially non-polar covalent. The boundary is a continuum.