

U_0 : "ionic cohesive energy" of the solid is the energy required to pull the solid apart into its constituent ions.

The "atomic cohesive energy" is the energy required to pull the solid apart into its constituent atoms.

Ionic crystals are fairly hard, high melting points, strong cohesive energies.

Covalent solids such as diamond in which atoms are covalently bonded. They are very hard, high melting points and high cohesive energies.

Metallic solids are held together by metallic bonds which arises from the attractive force between the positive ion cores and the negative electron "gas". They are ductile and have high electrical and thermal conductivity.

Molecular solids are held together by Vander Waals or dipole-dipole forces. They generally have low melting points and low cohesive energies.