

graphite

An allotropic form of the element carbon consisting of layers of hexagonally arranged carbon atoms in a planar condensed ring system (*graphene layers*). The layers are stacked parallel to each other in a three-dimensional crystalline long-range order. There are two allotropic forms with different stacking arrangements, hexagonal and rhombohedral. The chemical bonds within the layers are covalent with sp^2 hybridization and with a C–C distance of 141.7 pm. The weak bonds between the layers are metallic with a strength comparable to van der Waals bonding only.

Notes:

The term graphite is also used often but incorrectly to describe *graphite materials*, i.e. materials consisting of *graphitic carbon* made from carbon materials by processing to temperatures greater than 2500 K, even though no perfect graphite structure is present.

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