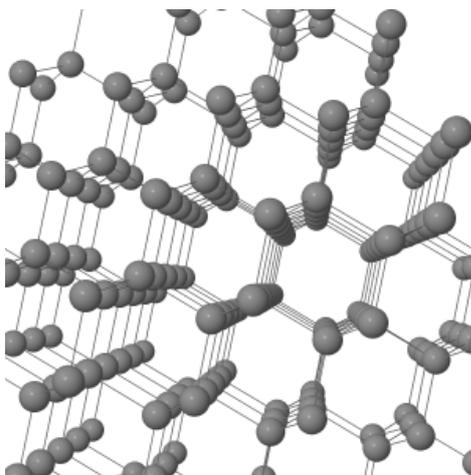


Answer on Question# 57886 - Chemistry - General Chemistry

Covalent compounds are soluble in non polar solvents but diamond and silicon carbide are not. Why?

Solution

Covalent substances are usually made up of discrete molecules with weak intermolecular forces between them. Although diamond and silicon carbide are covalent compounds, they are made up of covalent network structure with very strong chemical bonds. They can be considered as the giant covalent structures as it is shown below for the diamond:



The solubility depends on the magnitude of intermolecular forces. Therefore, the compounds with covalent network structure are insoluble, because the strong covalent bonds should be broken to dissolve such a molecule.