

Diamagnetism

The atoms or molecules of a **diamagnetic** material have no permanent dipole moments. However, in an applied magnetic field the motion of the electrons is altered and the atoms acquire *induced* dipole moments. The induced dipole moments are aligned *opposite* to the external field (in accordance with Faraday's law, which we study in Chapter 20). Diamagnetic materials have weak magnetic properties that are opposite to those of paramagnets: the magnetic field inside the material is slightly *smaller* than the applied field, and the material is weakly *repelled* from regions of stronger applied field.