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magnetic transition

A transition between disordered and ordered arrays of atomic magnetic moments. Where the ordered phase has a net spontaneous magnetization, M_S, the magnetic-ordering temperature is called a Curie temperature, T_C; where the net spontaneous magnetization of the ordered phase remains zero, the ordering temperature is called a Néel temperature, T_N. The temperature at which the two ferromagnetic subarrays of a ferrimagnet just cancel each other is called the compensation point. Materials exhibit ferromagnetic behaviour when unpaired electron spins are aligned in parallel, antiferromagnetic behaviour when the alignment is antiparallel, and ferrimagnetic behaviour if the alignment of the spins is antiparallel with unequal numbers in the two orientations or if the spins are canted. Therefore, ferromagnetic, ferrimagnetic and weak ferromagnetic transitions involve a net magnetic moment change, whereas antiferromagnetic transitions have zero net magnetic moment change.
Note:
Antiferromagnetic order below T_N may be complex; for example, canting of spins as in $GdFeO_3$, spiral-spin configuration as may occur in MnO_2 , and amplitude modulation, as in some rare-earth metals.

Source:
PAC, 1994, *66*, 577 *(Definitions of terms relating to phase transitions of the solid state (IUPAC Recommendations 1994))* on page 585

