

Fluorite



Calcium fluoride

Fluorite, also known as Fluorspar, belongs in the family of Halide minerals. In its pure state it is colourless, but it is more likely to be found with colour, for instance purple, brown, golden-yellow, in fact, almost any colour. The colour is determined by minute traces of other minerals. Perhaps the best known colour is that of "Blue John", a purple/blue variety from Castleton in Derbyshire. Fluorite crystals are easily recognisable because of their cubic nature, however crystal twinning is fairly common, leading to quite complex crystal forms, and perfect cleavage in four planes leads to the common octahedron crystals. Its occurrence is common in felsic igneous rocks, and particularly in granitic pegmatites. It also occurs as a "gangue" mineral in hydrothermal mineral deposits, of Galena, Quartz, Baryte, Sphalerite, and Calcite. Fluorescence was named after fluorite when this property was discovered. Fluorite glows a blue-violet colour when illuminated with short wave or long wave ultra-violet light, and this is thought to happen because of the presence of trace amounts of yttrium, or europium, which replaces some of the calcium.

The use of Fluorite in industry and manufacture is widespread. It is used in the chemical industry to produce hydrofluoric acid, which is then used to make foam blowing agents, and refrigerants. Its use in the manufacturing industry includes ceramic coatings and glazes, and is used to make specialty glass and Teflon is made from fluorine derived from fluorite. It is also used in the production of iron to improve its quality with 20 to 60 lbs. used for each ton of iron. High grade clear fluorite is used to make optical lenses of the best quality.

Cube



Blue John



Octohedron

