ILLINOIS' mining... Fluorite - the state mineral

Fluorite, also known as fluorspar, is calcium fluoride and has the chemical formula of CaF_2. Pure fluorite is colorless, but yellow, blue, green, and purple colors can be caused by impurities. Some fluorite is "fluorescent" meaning it will glow when exposed to ultraviolet light.

Fluorite is a relatively soft gemstone (Hardness of 4) and can be scratched by steel. Native Americans carved fluorite into artifacts. The first recorded use of Illinois fluorite was in 1823. It was mined in Gallatin County near Shawneetown to manufacture hydrofluoric acid. Significant underground mining continued in Pope and later in Hardin Counties until 1995. A limestone quarry in Hardin County still mines fluorite on a smaller scale. Hot mineral rich geothermal water was forced up through existing limestone and shale bedrock about 150-200 million years ago. This mineral rich water crystallized as it cooled, creating the fluorite deposits of Illinois.

Fluorite

The fluorine in fluorite is used in a variety of chemical and manufacturing processes. The best known use of fluoride is in its use in toothpaste and in municipal drinking water to reduce tooth decay. Fluorite is used as a flux in the smelting of iron and aluminum and in welding rods. This helps to lower the melting temperature and to separate impurities. This explains the origin of its name which comes from the Latin word "to flow".

There are a wide variety of other uses include using the fluorite in making specialized optical glass used in telescopes and ceramics. Other uses of fluorine are in refrigerants, water repellents for fabric, medicines, anesthetics, herbicides, refining uranium, electric transformers, making rocket fuel, non-stick coatings and plastics.

Illinois Department of Natural Resources

Printed by the authority of the State of Illinois 02/17 DNR051 IOCI 17-0198 Illinois Department of Natural Resources