

## ***What is Uranium?***



Uranium is a silvery, radio-active, metallic element. It occurs as uranium oxide in the mineral pitchblende.

Uranium was discovered by the German chemist Heinrich Martin Klaproth in the year 1789 from mineral called pitchblende. He named it 'Uranit'. But, after a year Klaproth changed its name to Uranium after the planet Uranus. By the end of the eighteenth century scientists had already made many compounds of this metal. In 1896 Henry Becquerel discovered radioactivity in Uranium.

Uranium is a shining metal of white color but it turns black when it comes in contact with the atmosphere. Uranium is a very heavy metal. The weight of a cubic foot of this metal is approximately half a ton. In the beginning, it was used for dyeing silk and porcelain vessels.

Natural Uranium is a mixture of two main isotopes — Uranium-238 and Uranium-235. 99.27% of the Uranium found in nature is uranium-238 and 0.72% is Uranium-235.

Two of its unique, properties have enhanced its utility throughout the world. The radioactive rays coming out from the nucleus of Uranium are very useful. These rays are used in agriculture, industries, biology and medical research. The second use of Uranium is in the field of nuclear energy. In 1938 the process of Nuclear fission was discovered by bombarding Uranium nucleus with neutrons. The nuclear fission is the process in which the nucleus of the Uranium-235 atom is split into two parts by neutron bombardment, hence tremendous energy is produced. The atom bombs were made through this process only in 1945 which were used against Japan in World War II. After the development of the atom bomb, its utility increased tremendously.

Nowadays nuclear fission is used for producing electrical energy. You will be surprised to note that a pound of Uranium produces as much energy as we get from the burning of three million- pounds of coal. Therefore, the Uranium-235 isotopes are used

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in nuclear reactors for the production of energy. The energy produced in the nuclear reactor is used to heat water to make steam. This steam runs the turbines and thus electricity is produced.

Uranium is also used to absorb X-rays and gamma rays. Its oxides are used as catalysts in some chemical reactions. There are four parts of Uranium in every one million parts of the earth's crust. The compounds of Uranium are also found in the rocks. Pitchblende is one of the important ores of Uranium. Its ores are found in abundance in England, India and Africa.

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