

**\* Name Origin:**

Latin: iris, iridis (rainbow).

**\* Sources:**

Found in gravel deposits with platinum.

**\* Uses:**

Used with osmium to tip gold pen points, to make crucible and special containers. Used to make alloys used for standard weights and measures, and heat-resistant alloys. Also used in cancer irradiation, hypodermic needles, helicopter spark plugs and as hardening agent for platinum.

**\* Additional Notes:**

Discovered in 1803 by Tennant in the residue left when crude platinum is dissolved by aqua regia. The name iridium is appropriate, for its salts are highly colored. Iridium, a metal of the platinum family, is white, similar to platinum, but with a slight yellowish cast. It is very hard and brittle, making it very hard to machine, form, or work. It is the most corrosion-resistant metal known, and was used in making the standard meter bar of Paris, which is a 90% platinum-10% iridium alloy. This meter bar was replaced in 1960 as a fundamental unit of length (see under Krypton). Iridium is not attacked by any of the acids nor by aqua regia, but is attacked by molten salts, such as NaCl and NaCN. Iridium occurs uncombined in nature with platinum and other metals of this family in alluvial deposits. It is recovered as a by-product from the nickel mining industry. The presence of iridium has recently been used in examining the Cretaceous-Tertiary (K-T) boundary. Meteorites contain small amounts of iridium. Because iridium is found widely distributed at the K-T boundary, it has been suggested that a large meteorite or asteroid collided with the earth, killing the dinosaurs, and creating a large dust cloud and crater. Searches for such a crater point to one in the Yucatan, known as Chicxulub. Iridium has found use in making crucibles and apparatus for use at high temperatures. It is also used for electrical contacts. Its principal use is as a hardening agent for platinum. With osmium, it forms an alloy which is used for tipping pens and compass bearings. The specific gravity of iridium is only very slightly lower than that of osmium, which has been generally credited as being the heaviest known element. Calculations of the densities of iridium and osmium from the space lattices gives values of 22.65 and 22.61 g/cm<sup>3</sup>, respectively. These values may be more reliable than actual physical measurements. Natural iridium contains two isotopes. Forty two other isotopes, all radioactive, are now recognized. At present, therefore, we know that either iridium or osmium is the densest known element, but the data do not yet allow selection between the two.