

*** Name Origin:**

Greek: prasios (green) and didymos (twin); from its green salts.

*** Sources:**

Obtained from same salts as neodymium.

*** Uses:**

Used for coloring glass and ceramic glazes. Also used with neodymium to make lenses for glass maker's goggles because they filter out the yellow light present in glass blowing.

*** Additional Notes:**

In 1841 Mosander extracted the rare earth didymia from lanthana; in 1879, Lecoq de Boisbaudran isolated a new earth, samaria, from didymia obtained from the mineral samarskite. Six years later, in 1885, von Welsbach separated didymia into two others, praseodymia and neodymia, which gave salts of different colors. As with other rare earths, compounds of these elements in solution have distinctive sharp spectral absorption bands or lines, some of which are only a few Angstroms wide. The element occurs along with other rare-earth elements in a variety of minerals. Monazite and bastnasite are the two principal commercial sources of the rare-earth metals. Ion-exchange and solvent extraction techniques have led to much easier isolation of the rare earths and the cost has dropped greatly in the past few years. Thirty six isotopes and isomers are now recognized. Praseodymium can be prepared by several methods, such as by calcium reduction of the anhydrous chloride or fluoride. Misch metal, used in making cigarette lighters, contains about 5% praseodymium metal. Praseodymium is soft, silvery, malleable, and ductile. It was prepared in relatively pure form in 1931. It is somewhat more resistant to corrosion in air than europium, lanthanum, cerium, or neodymium, but it does develop a green oxide coating that spalls off when exposed to air. As with other rare-earth metals it should be kept under a light mineral oil or sealed in plastic. The rare-earth oxides, including Pr_2O_3 , are among the most refractory substances known. Along with other rare earths, it is widely used as a core material for carbon arcs used by the motion picture industry for studio lighting and projection. Salts of praseodymium are used to color glasses and enamels; when mixed with certain other materials, praseodymium produces an intense and unusually clean yellow color in glass. Didymium glass, of which praseodymium is a component, is a colorant for welder's goggles.