

*** Name Origin:**

Greek: neos (new).

*** Sources:**

It can be prepared by liquification of air and separated from other elements by fractional distillation.

*** Uses:**

In a vacuum tube, neon glows reddish orange, thus, the invention of the neon lights. Neon has also been used to make lightening arrestors, voltage detectors and TV tubes.

*** Additional Notes:**

Discovered by Ramsay and Travers in 1898. Neon is a rare gaseous element present in the atmosphere to the extent of 1 part in 65,000 of air. It is obtained by liquefaction of air and separated from the other gases by fractional distillation. Natural neon is a mixture of three isotopes. Six other unstable isotopes are known. It is very inert element; however, it is said to form a compound with fluorine. It is still questionable if true compounds of neon exist, but evidence is mounting in favor of their existence. The following ions are known from optical and mass spectrometric studies: Ne^+ , $(\text{NeAr})^+$, $(\text{NeH})^+$, and $(\text{HeNe})^+$. Neon also forms an unstable hydrate. In a vacuum discharge tube, neon glows reddish orange. Of all the rare gases, the discharge of neon is the most intense at ordinary voltages and currents. Neon is used in making the common neon advertising signs, which accounts for its largest use. It is also used to make high-voltage indicators, lightning arrestors, wave meter tubes, and TV tubes. Neon and helium are used in making gas lasers. Liquid neon is now commercially available and is finding important application as an economical cryogenic refrigerant. It has over 40 times more refrigerating capacity per unit volume than liquid helium and more than three times that of liquid hydrogen. It is compact, inert, and is less expensive than helium when it meets refrigeration requirements. While it is inert, there have been reports of it combining with fluorine. Neon may also form ions in combination with other noble gases (NeAr , HeNe , Ne_2 and with hydrogen (NeH). It also forms an unstable hydrate, so it is not nearly as inert as one might think.