Neon Encyclopedia Article

Neon

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Neon

Neon is the second element in Group 18 of the **periodic table**, a group of elements known as the inert or noble **gases**. Neon's **atomic number** is 10, its atomic **mass** is 20.179, and its chemical symbol is Ne.

Properties

Neon is a colorless, odorless, tasteless gas with a **boiling point** of -410.66°F (-245.92°C), a freezing point of -415.5°F (-248.6°C), and a **density** of 0.89994 grams per liter. Neon is chemically inert. No compound of the element has ever been made.

Occurrence and Extraction

Neon occurs in the Earth's atmosphere where it is the fifth most abundant gas, with an abundance of about 18.2 parts per million (0.0182%). It is produced for commercial use by the fractional **distillation** of liquid air.

Discovery and Naming

Neon was discovered in 1898 by two British chemists, **William Ramsay** and Morris Travers (1872-1961). Ramsay and Travers attempted to identify the very small amount of liquid left after **oxygen**, **nitrogen**, **carbon** dioxide, and **argon** had been extracted from liquid air by traditional methods of fractional distillation. They analyzed the remaining liquid spectroscopically and found three new sets of spectral lines. They attributed those lines to the presence of three new elements, which they named neon, **krypton**, and **xenon**. The name neon is taken from the Greek word *neos* meaning "new."

Uses

The most important single use for neon is in the manufacture of "neon" lights. A "neon" light is a lamp filled with a gas (such as neon) at low pressure through which an electric current flows. The electric current causes the gas to fluoresce, giving off some distinctive **color**. A variety of gases are used in "neon" lights, each chosen for the distinctive color it produces. Neon is also used in the manufacture of **lasers** employed in industry and surgery.