

# Xenon Encyclopedia Article

## Xenon

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# Xenon

Xenon is the fifth element in Group 18 of the **periodic table**, a group of elements known as the noble **gases** or inert gases. Xenon has an **atomic number** of 54, an atomic **mass** of 131.29, and a chemical symbol of Xe.

## Properties

Xenon is a colorless, odorless, tasteless gas with a **boiling point** of  $-162.6^{\circ}\text{F}$  ( $-108.13^{\circ}\text{C}$ ), a melting point of  $-169.2^{\circ}\text{F}$  ( $-111.8^{\circ}\text{C}$ ), and a **density** of 5.8971 grams per liter. It is almost entirely chemically inert. A small number of compounds have been made under research conditions, but no such compounds exist in the natural world.

## Occurrence and Extraction

Xenon does not exist to any measurable extent in the Earth's crust, although it does occur to the extent of about 0.1 part per million in the Earth's atmosphere. The element has also been discovered in the atmosphere of Mars with about the same **concentration**. When needed, xenon can be produced by the fractional **distillation** of liquid air.

## Discovery and Naming

Xenon was discovered in 1898 by the Scottish chemist and physicist Sir **William Ramsay** and the English chemist Morris William Travers (1872-1961). Ramsay and Travers found the new element by spectroscopic analysis of the residue left after **nitrogen**, **oxygen**, and **argon** had been removed from liquid air. They suggested the name xenon after the Greek word for "stranger."

## Uses

The primary use of xenon is in fluorescent and "**neon**" lamps. The presence of xenon in such lamps results in a very bright, sun-like light used in photographic flash units, strobe lights, and airport runway lights.