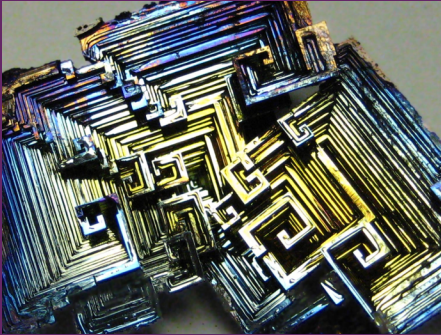


# BISMUTH

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## An Intro to Bismuth



If you look for lead on the periodic table, under the nitrogen group column next to it you will find bismuth. Bismuth has 83 protons, with a + charge, 83 electrons, with a - charge, and 125 neutrons, with no charge. It has 29 valence electrons, so it can react, but not as easily as sodium can. It has 6 energy levels so it can house all 83 electrons. It is the element with the most density that isn't radioactive. Read on to find out more about this quirky element.

## Name Info

Bismuth was thought to be an isotope of lead or tin, as it is easily confused with those other elements. It was proven to be a different element in 1753 by French chemist Claude Geoffery Junine. He proved that it is an entirely

different element. It gets its name from the German word "wismuth" meaning white mass and the Latin word "bismutum".



This man discovered bismuth. He was French.

## Properties of Bismuth

Bismuth, in its natural state, is a weak solid. You can break it with your hands. It is silvery with a pink or yellow tinge. The melting point is 271 degrees Celsius. The boiling point is 1420 degrees Celsius. It is very dense, at  $9.8 \text{ g.cm}^{-3}$  at 20 degrees Celsius. The electronegativity according to Pauling: 1.9. It has compounds. There is bismuth oxide, with 2 bismuth atoms and 3 oxygen atoms, bismuth oxychloride, with a chlorine atom, an oxygen atom and a bismuth atom, and bismuth carbonate, with 3 parts, each with 2 bismuth atoms, 1 carbon atom, and 3 oxygen atoms. It's about as abundant as silver, bismuth being found in the crust of the earth.



# Fun on bismuth

Here's a link to make your own bismuth crystals in your home  
kitchttps://www.youtube.com/watch?v=tt7DN8kGgtghen.

Bismuth is used in Pepto-Bismol upset stomach medicine. It's also used in automatic fire extinguishers and fire alarms that don't contain radioactive americium. It's also used in electrical circuit solder. Here are 3 facts on this element. 1 It forms crystals on cooling, and spontaneously forms hopper crystals and grow to huge sizes. 2. The active ingredient is bismuth subsalicylate in Pepto-Bismol. 3. Although this is rare, ingesting too much bismuth can turn your gums black. 4. The isotope  $^{209}\text{Bi}$ , it has a half life of 19000000000000000000 YEARS!