

Element Number 83

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Language Arts 7  
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Bismuth is an element that has many uses and odd properties, and it should be incorporated into more products in the future. Bismuth is currently used in pharmaceuticals, cosmetics and safety items. It also has unique properties that enable it to do things other materials cannot.

Bismuth, number 83 on the periodic table, is certainly not a visually striking element. It is a silver white metallic metal that can be easily mistaken as a rock (Covey Internet). On the other hand, bismuth crystals have all of the colors of the rainbow, with a shiny, reflective surface that is shaped like a complex pyramid. However, with bismuth, there is more than meets the eye. Bismuth has a very low melting point, 520.6° F, one of the lowest temperatures of all metals (Miller 114). It is also the most diamagnetic metal, and has the greatest Hall Effect of any metal. This means it has the greatest increase in electrical resistance when placed in a magnetic field (Bismuth Internet), meaning that it will repel magnets. For example, if you placed a magnet between two large plates of bismuth, the magnet would levitate and spin.

Although bismuth is not used commonly, we do use it without realizing it. For example, 57% of Pepto-Bismol's weight is bismuth (Gray 192-193). This can be shocking, considering that element 82 is lead and element 84 is polonium, a deadly radioactive poison! As far as we know, bismuth is completely nontoxic. Bismuth is also used in metal chains, and fire detectors. It is used in fire detectors, because of its low melting point. The bismuth will melt at the heat of fire, therefore triggering water to spray out of the fire-sprinklers (Miller 114) .

Bismuth is also used in many cosmetics and personal care products, like make-up and nail and hair color products. It is used because it imparts a white color to these types of products (COSMETICINFO.ORG Internet).

The price of bismuth in January 2009 was \$9.00 per pound, but by August of that same year, it was down to \$6.75 per pound. This is because demand for bismuth has reduced due to a world economic slowdown. China produces about 61% of the world's bismuth, making it the largest bismuth-producing country in the world, followed by Mexico (16%), Peru (13%), and the United States at (2%) (Carlin Internet).

Just recently, scientists have discovered unusual electronic properties in crystal made of bismuth, iron, and oxygen. It can perform electronic feats that are no match for conventional semiconductors. They also discovered that bismuth creates an electric current when light is placed on it, making it a potential candidate for future solar cells (IANS Internet). Sang-Wook Cheong, a physics professor at Rutgers University expressed that bismuth could be a candidate for solar cell and microchip improvement (IANS Internet).

These recent findings show that bismuth stands a chance of being used in future productions and not just in pharmaceuticals and cosmetics. It appears the earth will not run out of bismuth any time soon, and it is already being used in many ways, but has even greater production potential to aid in things like solar cell and microchip improvement. Bismuth may be a household name in coming years.