

**\* Name Origin:**

From the Greek god Mercury who was the messenger to the gods and was known for his speed; Hg from mercury's Latin name Hydrargyrum, which comes from the Greek word "hydrargyros" ("hydor" for water and "argyros" for silver).

**\* Sources:**

Most mercury comes from cinnabar ore.

**\* Uses:**

Used in thermometers, barometers, fluorescent lamps and batteries.

**\* Additional Notes:**

Known to ancient Chinese and Hindus; found in Egyptian tombs of 1500 B.C. Mercury is the only common metal liquid at ordinary temperatures. It only rarely occurs free in nature. The chief ore is cinnabar ( $\text{HgS}$ ). Spain and Italy produce about 50% of the world's supply of the metal. The commercial unit for handling mercury is the "flask," which weighs 76 lb. The metal is obtained by heating cinnabar in a current of air and by condensing the vapor. It is a heavy, silvery-white metal; a rather poor conductor of heat, as compared with other metals, and a fair conductor of electricity. It easily forms alloys with many metals, such as gold, silver, and tin, which are called amalgams. Its ease in amalgamating with gold is made use of in the recovery of gold from its ores. The metal is widely used in laboratory work for making thermometers, barometers, diffusion pumps, and many other instruments. It is used in making mercury-vapor lamps and advertising signs, etc. and is used in mercury switches and other electrical apparatus. Other uses are in making pesticides, mercury cells for caustic soda and chlorine production, dental preparations, antifouling paint, batteries, and catalysts. The most important salts are mercuric chloride  $\text{HgCl}_2$  (corrosive sublimate — a violent poison), mercurous chloride  $\text{Hg}_2\text{Cl}_2$  (calomel, occasionally still used in medicine), mercury fulminate ( $\text{Hg}(\text{ONC})_2$ ), a detonator widely used in explosives, and mercuric sulfide ( $\text{HgS}$ , vermillion, a high-grade paint pigment). Organic mercury compounds are important. It has been found that an electrical discharge causes mercury vapor to combine with neon, argon, krypton, and xenon. These products, held together with van der Waals' forces, correspond to  $\text{HgNe}$ ,  $\text{HgAr}$ ,  $\text{HgKr}$ , and  $\text{HgXe}$ . Mercury is a virulent poison and is readily absorbed through the respiratory tract, the gastrointestinal tract, or through unbroken skin. It acts as a cumulative poison and dangerous levels are readily attained in air. Air saturated with mercury vapor at  $20^\circ\text{C}$  contains a concentration that exceeds the toxic limit many times. The danger increases at higher temperatures. It is therefore important that mercury be handled with care. Containers of mercury should be securely covered and spillage should be avoided. If it is necessary to heat mercury or mercury compounds, it should be done in a well-ventilated hood. Methyl mercury is a dangerous pollutant and is now widely found in water and streams. The triple point of mercury,  $-38.8344^\circ\text{C}$ , is a fixed point on the International Temperature Scale (ITS-90). Native mercury contains seven isotopes. Thirty five other isotopes and isomers are known. Causes neurological and kidney damage and blindness. Also associated with birth defects. Very damaging to aquatic life. It is found in paint, batteries, thermometers, electrical equipment, fluorescent lights and plastics. Also used in gold mining industry.

Batteries account for 88% of the mercury content in municipal solid waste.