

Tellurium

General Description

Tellurium was discovered by Franz Joseph Müller von Reichenstein, a Romanian mining official, in 1782. Tellurium is found free in nature, but is most often found in the ores sylvanite (AgAuTe_4), calaverite (AuTe_2) and krennerite (AuTe_2). Today, most tellurium is obtained as a byproduct of mining and refining copper.

Physical Properties

Atomic Number: 52

Atomic Weight: 127.60

Melting Point: 722.66 K (449.51°C or 841.12°F)

Boiling Point: 1261 K (988°C or 1810°F)

Density: 6.232 grams per cubic centimeter

Phase at Room Temperature: Solid

Element Classification: Semi-metal

Period Number: 5 Group Number: 16 Group Name: Chalcogen

Main Applications

Tellurium is a semiconductor and is frequently doped with copper, tin, gold or silver. Tellurium is also used to color glass and ceramics and is one of the primary ingredients in blasting caps. Tellurium is primarily used as an alloying agent. Small amounts of tellurium are added to copper and stainless steel to make them easier to machine and mill. Tellurium is also added to lead to increase its strength and resistance to sulfuric acid (H_2SO_4).

Tellurium is also used in the production of thin film Cadmium Telluride solar cells. Lab efficiencies in excess of 16% and production efficiencies in excess of 10% have been obtained.

World Production and Price

