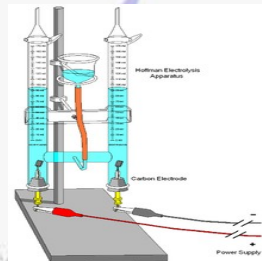


## Methods of Cleaning Tungsten Wire

Generally speaking, there are two ways of cleaning tungsten wire to achieve bright and shiny surface condition. They are electrolytic cleaning and hydrogen-sintered cleaning.



### Tungsten Wire Cleaned by Electrolysis

This is a method of metal cleaning with the aid of an applied voltage potential in the presence of a medium which conducts electricity, wherein the metal is one electrode submerged in the electrolyte.

### Black Tungsten Wire Cleaned in Hydrogen Atmosphere

This method of cleaning surfaces on a metallic article, comprising the steps of: (a) disposing the article within a vacuum furnace; (b) heating the article to a temperature of about 1400° F. or above within the vacuum furnace; and (c) repetitively cycling hydrogen gas and a vacuum within the furnace by supplying in each cycle a fresh supply of hydrogen gas within the furnace at a pressure within a range of about 500-10,000 microns, followed by removal of reaction products resulting from a reaction between hydrogen gas and surface contaminants on the article and substantially all residual hydrogen gas from within the furnace.

Using the above two methods, the graphite on the surface of black tungsten wire can be removed, and cleaned tungsten wire can be manufactured.