



MARINELLE BASSON

RHENIUM

Element Symbol: **Re**

Atomic Number: **75**

An initiative of IYC 2011 brought to you by the RACI



International Year of
CHEMISTRY
2011



www.raci.org.au

RHENIUM

Element symbol: Re

Atomic number: 75

Rhenium is a silvery white metal and has the third highest melting point for all known elements and is also the fourth densest element. Rhenium is the highest known element with stable isotopes, with Rhenium-185 the most stable.

Rhenium was discovered in 1925 by Walter Noddack, Ida Tacke, and Otto Berg in Germany however it wasn't until 1928 when then managed to extract 1g of Rhenium from 660 kg of molybdenite! Molybdenite ores provide the main source for Rhenium with ores typically containing as little as 0.2%.

Only two mineral forms have been identified for Rhenium they are Rhenite and Trakianite with Rhenite being the main source. However it has only been found in Russia on an active volcano! This source is not economically viable and as such the main source for rhenium is in molybdenite ores. As such Rhenium is extremely rare precious metal. A molybdenite/rhenium ore deposit was found in northeast Australia and is set to increase the world supply by a fifth, with current production around 40-50 tonnes/year.

The principle use for Rhenium is in alloys for jet engines such as the engines used on the F16 fighter jets, this accounts for 70% of the world's use for Rhenium, with the second major application being for the production of lead free high octane gasoline. Rhenium isotopes also have a use in the treating of cancer in the liver and kidney.

Provided by the element sponsor Sarah Lau

ARTISTS DESCRIPTION

Rhenium was discovered in 1925 by a group of scientists in Germany and was named after the River Rhine (Latin: Rhenium). I used this fact as inspiration for my illustration and designed a "woodcut-like" town and river scene which was etched and cut into lino.

MARINELLE BASSON