HELIUM

Element symbol: He
Atomic number: 2

Discovered by: French astronomer Pierre Janssen and English scientist and astronomer Norman Lockyer in 1868. Both Janssen and Lockyer observed the solar eclipse on 18 August 1868, and noted the presence of a previously unseen yellow line in the solar spectra. Lockyer suggested the name 'helium' after the Greek 'Helios', meaning 'sun'. (Interestingly, Lockyer was also the founder of the noted science journal 'Nature'.)

Helium was first isolated in 1895 by William Ramsay and later that year, by Per Teodor Cleve and Abraham Langlet.
Helium is the second most abundant element found in the known universe (after hydrogen). Stars produce helium through the proton-proton chain reaction and the carbon cycle, with both reactions critical for the energy production of stars.

Terrestrial helium is most commonly present as a result of radioactive decay and is 'trapped' in the ground under the same conditions as natural gas. Therefore, most helium being produced for commercial purposes is extracted from natural gas.

Two of helium's properties – inertness and a low boiling point – make it particularly useful for a range of industrial applications, including cryogenics (and the cooling of magnets in MRI scanners), cooling metals to achieve superconductivity and inspecting and maintaining gas systems (e.g. detecting leaks and pressurising pipelines). Helium is also used for welding, as well as condensing rocket fuel.

Helium's low density and the fact that it is not as flammable as hydrogen leads to its most 'entertaining' use – as a gas for filling balloons and airships.
The fusion of hydrogen into helium provides the energy of the hydrogen bomb.

The discovery that alpha particles (a type of radiation) are actually helium nuclei was made by New Zealander (and all round excellent scientist) Ernest Rutherford and Thomas Royds in 1907. Their study involved shooting alpha particles into a glass-walled, evacuated tube, and examining the spectra of the gas inside the tube, which revealed the same spectra as helium.

Provided by the element sponsor Sarah Lau

ARTISTS DESCRIPTION

Helium derives its name from Helios the Titan God of the Sun. Helios dwelt in a golden palace at the eastern ends of the earth. Each dawn he would emerge, crowned with the aureole of the sun to drive his chariot; drawn by four winged and fiery steeds, across the skies.

Helium; one of the Noble Gases, was discovered in 1868 through the noted presence of a previously unseen yellow line in the solar spectra during a solar eclipse.

This print is a single block woodcut incorporating the colours of the sun and the dawn skies through a rainbow roll of relief inks.

ROBYN SILK