



TINA CURTIS

ARGON

Element Symbol: **Ar**

Atomic Number: **18**

An initiative of IYC 2011 brought to you by the RACI



International Year of
CHEMISTRY
2011



www.raci.org.au

ARGON

Element symbol: **Ar**

Atomic number: **18**

Freehills

Patent & Trade Mark Attorneys

Argon, from the Greek word 'argos' meaning "the inactive one", was discovered in by Lord Rayleigh and Sir William Ramsay in 1894 in an experiment in which they removed all of the oxygen, carbon dioxide, water and nitrogen from a sample of clean air. Argon was the first member of the Noble gases to be isolated.

Argon constitutes 0.934% by volume and 1.28% by mass of the Earth's atmosphere.

Air is the primary raw material used by industry to produce purified argon products. It is isolated from air by cryogenic fractional distillation. Worldwide commercial production is around 700,000 tons per year.

Argon has the following uses:

- the inflation of car airbags
- as inert atmosphere in incandescent light bulb
- in Geiger counters
- added to wine barrels above the liquid to prevent oxidation of the wine
- to provide a protective atmosphere for old/historical document storage

Conservators from the National Museum of Australia have designed and built an innovative, argon-filled case that allows precious objects to be safely displayed for 40 years and beyond. One such object is The Batman Land Deed dated 1835.

This document is recognised as the first acknowledgement that Aboriginal people had ownership of their land prior to the arrival of Europeans.

Conservators were faced with the challenge of creating a long-term storage and display solution for the deed, which was made on a sensitive parchment or vellum of goat or sheep skin. This material is sensitive to oxygen, light, temperature and humidity. The National Museum funded the design for a special argon atmospheric case which was the first of its type to be built in Australia.

Provided by the element sponsor Freehills Patent and Trade Mark Attorneys

ARTISTS DESCRIPTION

Extremely stable, 'noble', not easily changed and disinclined to bond with other elements, Argon has architectural applications such as in double glazing. The secret to Argon's stability is the arrangement of eight electrons in its outer atomic shell (an octet).

I wanted to express this rigidity with a structure with cross-bracing for stiffness. Argon is also cubic-face-centred, i.e. it arranges itself a bit like a box- eight corners and six sides- so the motif is a bit like a box construction diagram.

Argon is colourless hence predominantly black and white, but when condensed it becomes bright blue.

TINA CURTIS