Natalia Dowha

Sodium



1

What is Sodium?

Sodium is a chemical element with the symbol Na and atomic number 11. It also has a mass number of 22.9897. It is a soft, silvery-white, highly reactive metal. Sodium is an alkali metal, being in group 1 of the periodic table.



2

11 22.99

Na

Sodium

What state is sodium at room temperature?

Sodium is a solid reactive metal at room temperature.

3

How was Sodium discovered?

Sir Humphry Davy, a British chemist, discovered sodium in 1807. He found the element by isolating it from caustic soda using electrolysis. Sir Humphry Davy was able to discover sodium (Na) in the laboratory.



4

Common Uses of Sodium



- Sodium is widely used in the kitchen:

Mixed with Chlorine makes salt,

Is used to make baking soda,

Used to make cleaning and laundry detergents.

- Sodium is used to create medicine.
- Nuclear reactors are using it to exchange the heat.
- Sodium is used in street lights and produces a brilliant yellow light.
- Sodium is also used to create glass.

5

Facts about Sodium

- The melting point for sodium is 208.029 °F (97.794 °C), whereas the boiling point for sodium is 1,621.292 °F (882.940 °C).
- Sodium helps the human body regulate blood pressure, blood volume, osmotic equilibrium and pH.
- When burned, sodium will produce a yellow flame.
- Sodium is the 6th most abundant of all the element found in the Earth and also the 9th most abundant element found in the human body.

Wanna hear my Sodium joke? **Na!**

6

Natalia Dowha

the elements on the periodic table.

Oxygen



1

What is Oxygen?

- Oxygen is a chemical element with the symbol O.
- It is a member of the chalcogen in the periodic table , a highly reactive nonmetal and an oxidizing agent that readily forms oxides with most elements as well as with other compounds.
- *This article is about the chemical element and its most stable form, O_2*

2



The oxygen Appearance

- Oxygen is a colourless, odourless, tasteless gas essential to living organisms, being taken up by animals, which convert it to carbon dioxide; plants, in turn, utilize carbon dioxide as a source of carbon and return the oxygen to the atmosphere.

3

Oxygen Atomic Number and mass

- The oxygen atomic number is 8
- The oxygen atomic mass is 15.999

8
O
Oxygen
15.999

Atomic Number
Chemical Symbol
Element Name
Atomic Mass

4

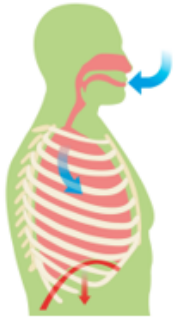
Who discovered oxygen? When? Where?

- Joseph Priestley
- Oxygen was discovered in 1771
- Joseph Priestley in Wiltshire, England and independently by Carl Wilhelm Scheele in Uppsala, Sweden

5

Common uses of the element

- The Common uses of the element is for breathing.



Monty McCormick

Other interesting facts about your element

- Oxygen gas is colourless, odourless, and tasteless.
- Liquid and solid oxygen are pale blue.
- Oxygen also occurs in other colours, including red, pink, orange, and black. There is even a form of oxygen that looks like a metal!
- Oxygen is a non meatel.
- Oxygen gas normally is the divalent molecule O_2. Ozone, O_3, is another form of pure oxygen.
- Oxygen supports combustion. However, pure oxygen itself does not burn!
- Oxygen is paramagnetic. In other words, oxygen is weakly attracted to a magnetic field, but it doesn't retain permanent magnetism.

A picture of the element, or a picture related to one of the element's usea.

Oxygen
8
O
15.999

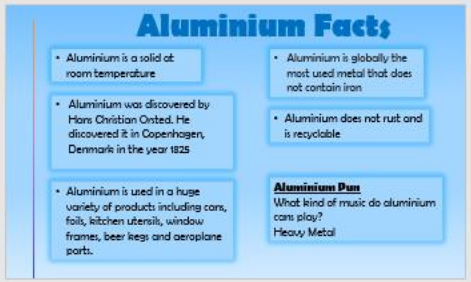


A poem or a pun related to your element

- There's a new film about oxygen that's coming out soon, but there's no date I wonder when it will air









Jessica Foy

ALUMINIUM RESEARCH TASK

By Jessica Foy



13 26.98

Al

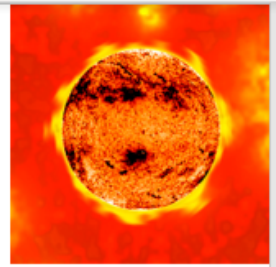
Aluminium



2
He
Helium

Helium

Jake Irwin



Helium is a light, odourless, colourless, inert, monatomic gas. It can form diatomic molecules, but only weakly and at temperatures close to absolute zero. Helium has the lowest melting point of any element and its boiling point is close to absolute zero.

Jake Irwin

The atomic number for helium is 2 and the mass number is 4.002602 u.

At room temperature helium is a gas and you can not see it, taste it, or smell it.



Because it is very unreactive, helium is used to provide an inert protective atmosphere for making fibre optics and semiconductors, and for arc welding. Helium is also used to detect leaks, such as in car air-conditioning systems, and because it diffuses quickly it is used to inflate car airbags after impact.

The first evidence of helium was obtained on August 18th, 1868 by French astronomer Jules Janssen. While in Guntur, India, Janssen observed a solar eclipse through a prism, whereupon he noticed a bright yellow spectral line (at 587.49 nanometres) emanating from the chromosphere of the Sun.

Heard a joke about two helium atoms. He he.

How can helium make my voice high? That's because helium is so much lighter than air. When sound waves speed up, but their frequency stays the same, each wave stretches out. ... It's a gas that is much heavier than air, so when it is inhaled, it shortens sound waves so the lower tones in the voice are amplified and the higher ones fade out.

I love helium. I just can't speak highly enough about it.

Dylan Kitchin

Element research task – Sodium Dylan Kitchin

Sodium is an element and part of the periodic table with a symbol of Na. Sodium is a soft, silvery-white metal. It is soft enough to cut with the edge of a coin. Freshly cut surfaces oxidize rapidly in air to form a dull, oxide coating. Sodium burns in air with a brilliant yellow flame. The atomic number of sodium is 11 (the number of protons in the nucleus of an atom, which is characteristic of a chemical element and determines its place in the periodic table.) The mass number of sodium is 23 (the mass number is the amount of neutrons and protons in a nucleus.) At room temperature sodium would be solid. Humphry Davy was an English scientist who discovered sodium in 1807. He isolated sodium by applying to caustic soda. Sodium's common use is for sodium chloride (common salt) which is used to salt foods and de-ice roads.



I would tell a sodium and hydrogen joke, but NaH.

Alone, it's explosive. Combined with chlorine, it's table salt.

Dylan Kitchin

It is an element that reacts easily and mixes with other elements to make some of the most common substances in daily life. Other than table salt (NaCl), sodium shows up in baking soda ($NaHCO_3$), sodium peroxide (Na_2O_2) and borax, or sodium borate ($Na_2B_4O7{\cdot}10H_2O$). It's crucial for blood-pressure control and the functioning of the nervous system.

NEON

Atomic Number: 10

Mass Number: 20.17974



Ne

By Meredith Johnston

1

APPEARANCE



- It is a colourless, tasteless odourless insert gas.
- It changes to reddish-orange colour in vacuum tube.
- It is chemically inactive.
- It has the lowest liquid range of any element.
- At room temperature NEON consists of a Gaseous state

2

WHO, WHEN, WHERE?

Who:

William Ramsay and Morris Travers.

When

1898.

Where

University Collage London.





3

INTERESTING FACTS



While experimenting on liquid air, Sir William Ramsay and Morris Travers discovered neon in 1898.

Trace amounts of neon are found in the Earth's atmosphere.

Neon is about two thirds as dense as air.

Neon is the second lightest inert gas, as well as being the second lightest noble gas after helium.

Neon is the fifth most abundant chemical element in the universe, following behind hydrogen, helium, oxygen, and carbon.

4

COMMON USES OF NEON



- The largest use of neon is in making the ubiquitous 'neon signs' for advertising. In a vacuum discharge tube neon glows a reddish orange colour. Only the red signs actually contain pure neon. Others contain different gases to give different colours.
- Neon is also used to make high-voltage indicators and switching gear, lightning arresters, diving equipment and lasers.
- Liquid neon is an important cryogenic refrigerant. It has over 40 times more refrigerating capacity per unit volume than liquid helium, and more than 3 times that of liquid hydrogen.

5

Meredith Johnston

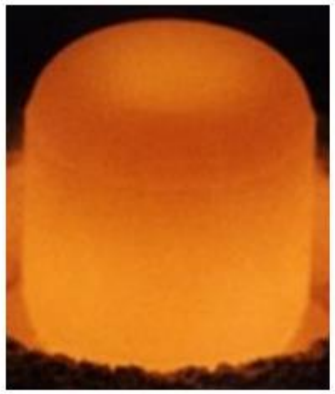
Joseph Armstrong



Plutonium
94
Pu
244

uses

- Plutonium is primarily used as a power source in nuclear power plants
- Plutonium is also used in highly long life batteries such as those for space probes and in older pacemakers
- One of the other uses for plutonium was in the second nuclear bomb ever constructed and used







By Joseph Armstrong

I can't make a plutonium pun without nitrogen but after that it is easy, as with both of them I would have PuN!

Facts

- Plutonium is not commonly used anymore because of the danger posed to anyone interacting with it as it is highly radioactive and can kill people easily
- Plutonium was discovered in 1941 by a group of four people at the university of California. These were Joseph Kennedy, Glenn Seaborg, Edward Macmillan and Arthur Wohl
- Plutonium is not naturally found on planet Earth and is made by adding neutrons to uranium
- At room temperature plutonium is a solid
- Plutonium glows in a dark environment

Aidan McHugh

Flerovium

The symbol used for flerovium is Fl. The appearance of it is unknown but is thought to be white or silver and metallic.

It has an atomic number of 114 and a mass number of 289 but It is unknown what state it is in at room temperature.

A group of scientists at Flerov Laboratory of Nuclear Reactions, led by Yuri Oganessian, discovered flerovium. It is used for researching purposes only.

It is a synthetic radioactive metal, created via nuclear bombardment, and has only been produced in minute amounts.

Flerovium is produced by bombarding 244Pu with 48Ca in a heavy ion accelerator.



Aidan McHugh

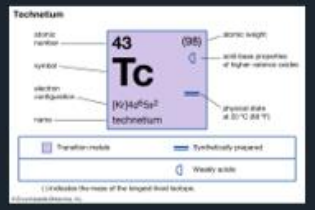
TECHNETIUM

By Barry Hutchinson, 9D



1

Basic facts about technetium



- Symbol: Tc
- Group: 7
- Period: 5
- Classification: Transition metal
- Block: d
- Appearance: silvery-grey, similar to platinum
- Atomic number: 43
- Atomic weight: 98
- State at room temperature: Solid
- Melting point: 2,157 °C
- Boiling point: 4,262 °C

Barry Hutchinson

Discovery of technetium

- Technetium was discovered in 1937.
- It was discovered by Carlo Perrier and Emilio Segrè.
- Dmitri Mendeleev predicted element 43 as *eka-manganese* (Em) and found many of its properties.
- Due to Mendeleev's prediction, many chemists searched for eka-manganese in vain, until the 1925 when some scientists claimed to have discovered it and named it *masurium*. However, it is unknown if these claims were true, and so they cannot be completely dismissed.
- In 1937, scientists at the Berkley cyclotron bombarded a sample of molybdenum and sent it to Perrier and Segrè at the University of Palermo. They found the new element to be present, so they separated it.
- Technetium was the first element to be produced artificially.
- Its name comes from the Greek 'τεχνητός (technitos)' meaning 'artificial' or 'synthetic'.

3

Common uses and interesting facts

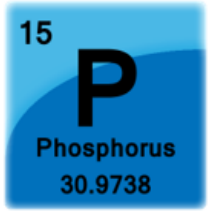


- Technetium is commonly used as medical diagnostic tool, due to its radioactivity. Carefully selecting which element is bonded to a technetium atom determines where in the body the compound will be absorbed.
- The most stable isotope of technetium, ^{98}Tc, has a half-life of 4.2 million years. This means that half of it will decay in this time. While this may sound like a lot, the age of the Earth is over 1,000 years longer. This is one of the major reasons why virtually no terrestrially occurring sources of technetium have been found.
- New atoms of technetium are produced today by uranium undergoing nuclear fission or by being extracted from spent nuclear fuel.
- Like most elements, technetium has no allotropes.
- It also is the lowest-numbered elements to have no stable isotopes.
- The first terrestrially occurring technetium was found in South African pitchblende (ore rich in uranium) in 1962. It was discovered by B.T. Kenna and P.K. Kuroda. Technetium has also been found in stellar matter.
- If you spent a day wearing a one-litre cube of technetium as a hat, it would kill you.

4

My element is Phosphorus





Phosphorus is an element on the periodic table which has an atomic number of 15 a symbol P and a mass number of 15 with 16 neutrons.

Phosphorus was discovered by Hennig Brand, who was a German merchant, pharmacist and alchemist, who lived and worked in Hamburg. It has a melting point of 44.20°C (111.56°F), and a boiling point of 280.50°C (536.90°F). Phosphorus is used in the production of steel.

Phosphorus is used in the creation of steel.

Heating temperature of 280.5.

Object/substance in the periodic table.

Symbol of chemical element is P.

Phosphorus was discovered by a merchant in Germany.

Has uses for creating glass.

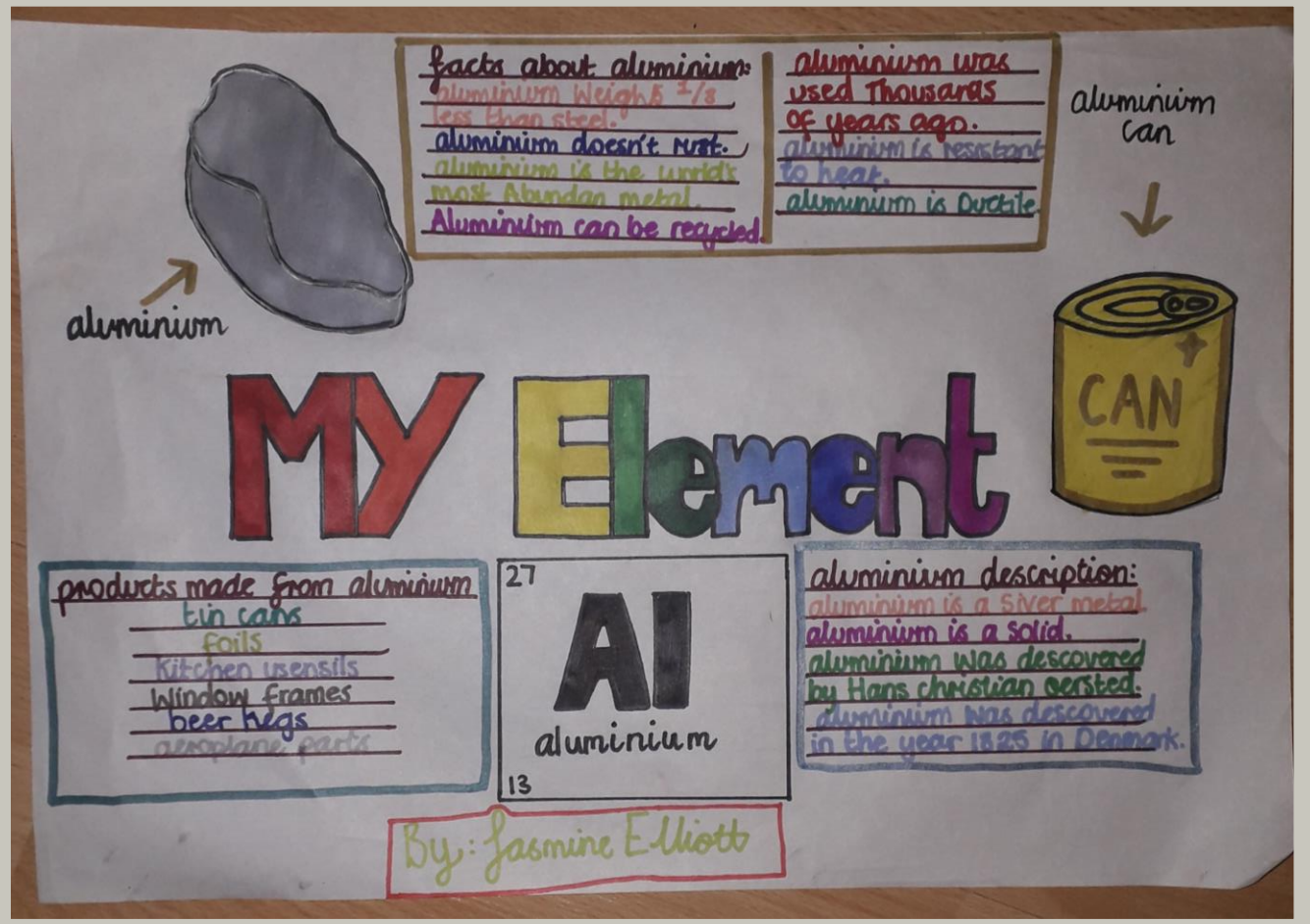
Oxidants and phosphorus don't mix!

Red/yellow in colour.

Useful as a nutrient for plants.

Sodium lamps use the phosphorus constructed glass.

Jessie Palmer



Jasmine Elliott