

Magnesium (Mg)



Magnesium belongs to the group of alkaline earth metals like calcium. It's an essential element, involved in more than 300 enzymatic and chemical reactions in the human body. As an extremely light metal, it is used extensively to make lighter and easily weldable alloys with other metals, particularly aluminium. Magnesium is flammable and produces a bright white light. For this reason, it is also commonly used for fireworks and flares as well as a fire starter.

Mg
Magnesium

[Ne]3s²

Atomic number
protons/electrons

12

Neutrons
(most common isotope)

12

Atomic weight
(amu)

24.31

Atomic radius
(pm)

141

Functions/Health effect:

This essential element is crucial in humans for enzymatic function as well as for nucleic acid chemistry in every living cell on Earth. Out of the vast array of 300 reactions which magnesium is involved in, it is worth to mention the muscle movement control, gene maintenance, nerve function, protein formation, blood glucose control, energy maintenance through oxidative phosphorylation, and support of healthy immune system. An average human body contains approximately 25 g of magnesium, half of which is present in bones and the rest is contained mostly in soft tissues. Determining magnesium levels in the body is therefore difficult and is usually based on blood serum levels, which however make up less than 1 % of total magnesium in the body.

Sources:

In nature, magnesium is never found in its pure form as a metal, but rather as a part of natural compounds in many minerals, such as dolomite. It's also the third most abundant element in sea salt. In plants, magnesium forms the central atom in chlorophyll molecule, which means that any plant that undergoes photosynthesis contains this key macronutrient. Eating leafy greens is therefore a great way to ensure adequate intake of this essential element.

Besides green and red colored leafy vegetables, other rich sources of magnesium are dark chocolate, avocados, nuts and some fish. Despite its abundance in the nature and food, an average person usually doesn't meet their daily requirement for magnesium intake. Even though severe magnesium deficiencies are not common in developed countries, because of its importance in human body it's often a part of food and health supplements.

Recommended daily intake for an average person varies with age, starting with 30 mg per day for a toddler to 420 mg per day for a man in his 50s. The latter amount would require eating, for example, around 80 g of pumpkin seeds, which are an excellent source of this macronutrient.

Did you know that?

It was first discovered as an element in 1755 by Joseph Black, however, it wasn't until 1808 when it was first isolated by Sir Humphry Davy. The name of this element has its origin in the name of the Greek region „Magnesia“ where compounds of this metal occur naturally.

If magnesium catches on fire, extinguishing the fire with water will only make problem worse, as the reaction creates flammable and explosive hydrogen gas in the process.

Food
division

