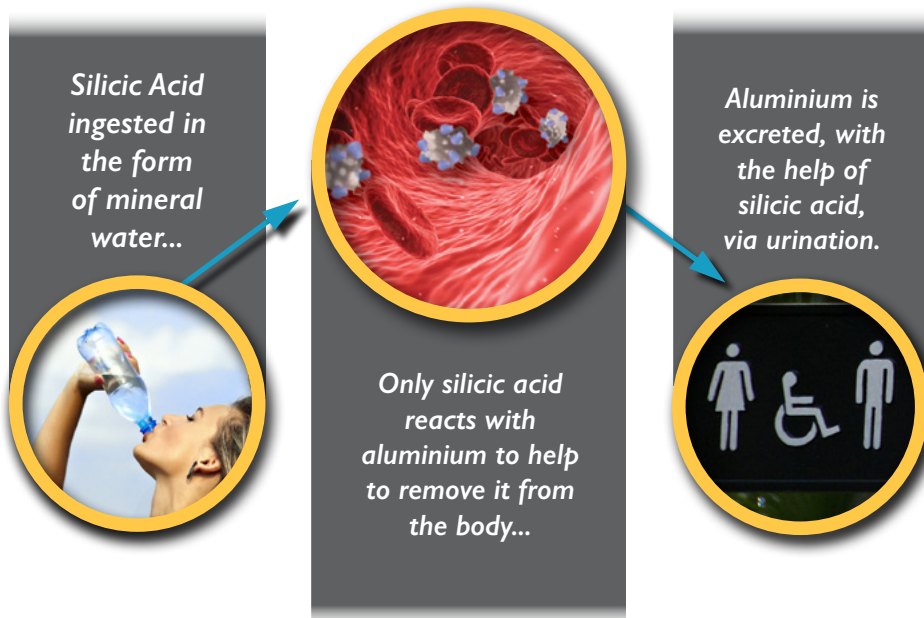
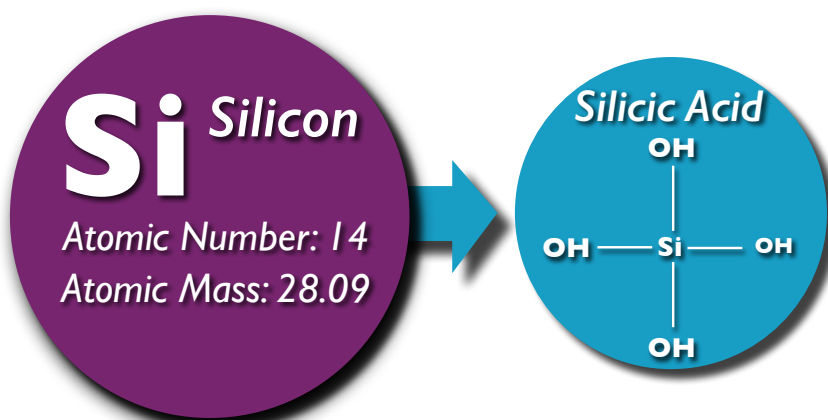


Why Only Silicon-Rich Mineral Waters (and not silicon/silica supplements) Will Protect You from Aluminium

Silicic acid is the form of silicon which is found in silicon-rich mineral waters and is the only form of silicon in the diet which can pass rapidly from the gut to the bloodstream to help to remove aluminium from the body in the urine.



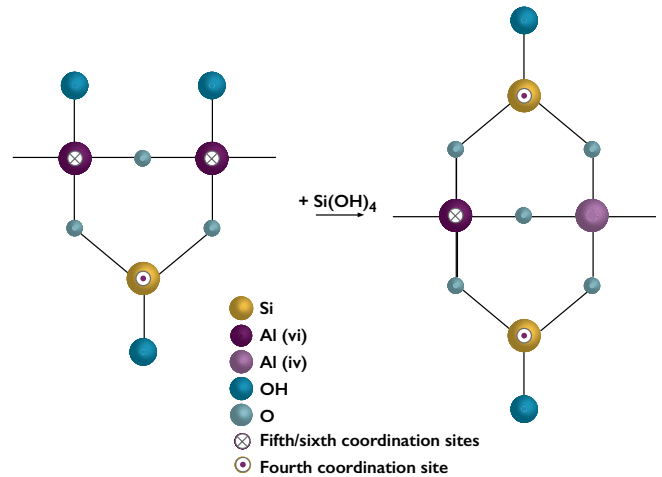
When you drink a silicon-rich mineral water the silicic acid in the water passes immediately from your gut and into your blood producing a temporary rapid increase in the silicic acid in your blood. It is this temporary high concentration of silicic acid in the blood which reacts with aluminium in the blood and helps the aluminium to be removed from the body in the urine.

The Only Biologically Available Form of Silicon is Silicic Acid (neutral monomer, $pka \sim 9.6$, $Ksp \sim 2 \text{ mmol/L}$)

A high level of silicic acid in the blood is essential to ensure that the product it makes with aluminium remains stable for long enough for it to be filtered by the kidney.

This is why only silicon-rich mineral waters, where the silicon content is above 30 mg/L or ppm when stated as 'silica'* or 14 mg/L or ppm when stated as 'silicon' or 'silicic acid' (sometimes written as OSA, orthosilicic acid), will help to remove aluminium from the body.

*Some confusion comes from the fact that 'historically' silicon in natural waters has been measured as 'silica' and the term silica is often seen on a mineral water bottle



“We have investigated and tested every so-called silicon/silica supplement which is available to buy and not one of them can provide a high and immediate level of silicic acid for absorption across the gut and into the blood.”

Professor Christopher Exley PhD, FRSB

Exley C, Korchazhkina O, Job D, Strekopytov S, Polwart A & Crome P (2006) Non-invasive therapy to reduce the body burden of aluminium in Alzheimer's disease. *Journal of Alzheimer's Disease* 10, 17-24.
Davenward S, Bentham P, Wright J, Crome P, Job, D, Polwart A and Exley C (2013) Silicon-rich mineral water as a non-invasive test of the 'aluminium hypothesis' in Alzheimer's disease. *Journal of Alzheimer's Disease* 33, 423-430.
Beardmore J, Lopez X, Mujika JI and Exley C (2016) What is the mechanism of formation of hydroxyaluminosilicates? *Scientific Reports* 6:30913.
Jones K, Linhart C, Hawkins C, Exley C (2017) Urinary excretion of aluminium and silicon in secondary progressive multiple sclerosis. *EBioMedicine* ([http://www.ebiomedicine.com/article/S2352-3964\(17\)30428-0/fulltext](http://www.ebiomedicine.com/article/S2352-3964(17)30428-0/fulltext))

For more information, visit cmsri.org