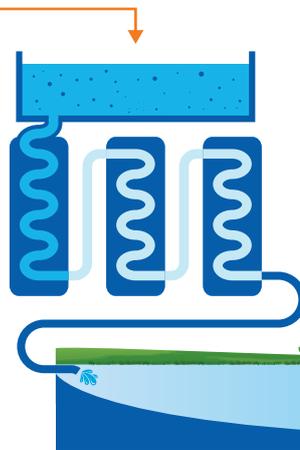
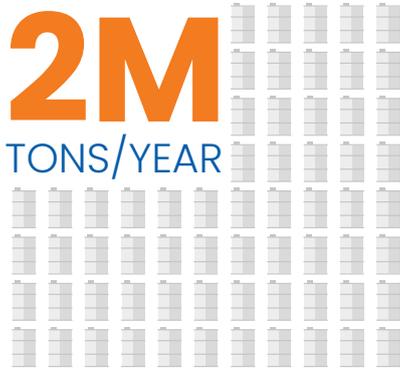


The Egyptians first used coagulants (Alum) to purify drinking water more than **3500 years ago**. The mid-1800s saw an increase in population and urbanisation linked to **industrial revolution** which in turn required enhanced water treatment solutions.

Aluminium-based coagulants started to be **manufactured on an industrial scale** by having an aluminium source to react with an acidic or a basic source.



Nowadays, in Europe, an annual produced amount of **more than 2 million tons of aluminium-based coagulants** make an essential contribution to the water treatment.



Over the past decades, an **increasing amount of by-products from other industries** are being used as raw materials¹

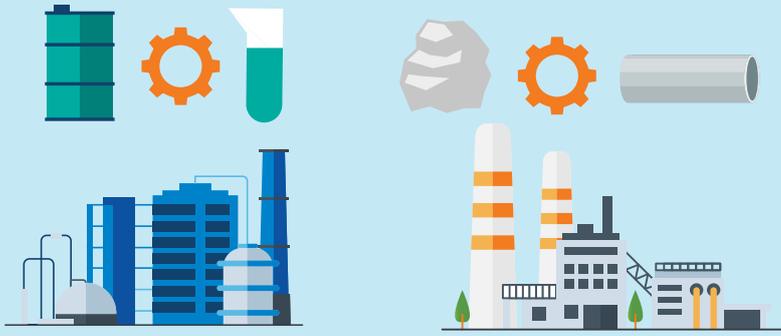


70% of the acids used are **by-products**.



An **increasing percentage of the aluminium** used comes from by-products.

¹ For more details, see the INCOPA LCA Executive Summary of the Karlsruhe Institute of Technology study by Dr.-Ing. Justyna Homa and Prof. h.c. Dipl.-Ing. Erhard Hoffmann, 2014, available on the INCOPA publications webpage.

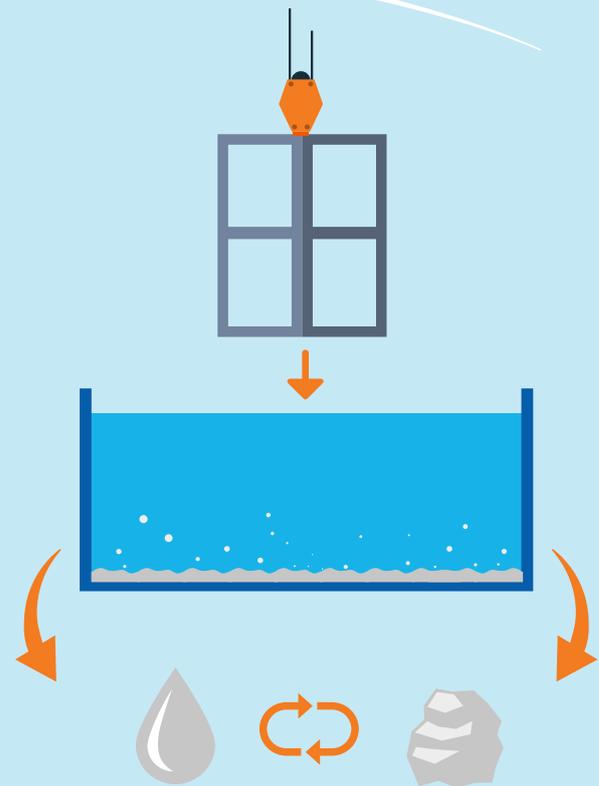


Because of the large volume of aluminium-based raw materials required for its coagulant business, **our sector works closely with the chemical industry to source the acids, and with the aluminium value chain to obtain aluminium by-products.** These by-products therefore contribute to the circular economy.

ALUMINIUM CIRCULARITY

As an example, in the aluminium window frames industry, **metal finishing generates several by-product streams**, which can be used as either a solid or liquid aluminium source for the coagulant production.

These by-products can be used as raw materials in aluminium coagulant plants.



By valorising by-products **we contribute to saving resources**, such as aluminium ore or chemical feedstocks whilst producing a key element to treat water and protect our environment.

