

# ACTIFLO® SOFTENING

High-speed decarbonation and/or softening solution

Designed to improve the quality of hard water, Actiflo Softening combines the operations of clarification and **decarbonation/softening** in a single compact unit to reduce the **alkalinity** and **hardness** of water. At the same time, the process also eliminates other undesirable components such as **silica, heavy metals,**

**fluorides and phosphates together with suspended solids and organic matter.**

Fast and effective, Actiflo Softening produces very high-quality water for **industrial and municipal applications.**

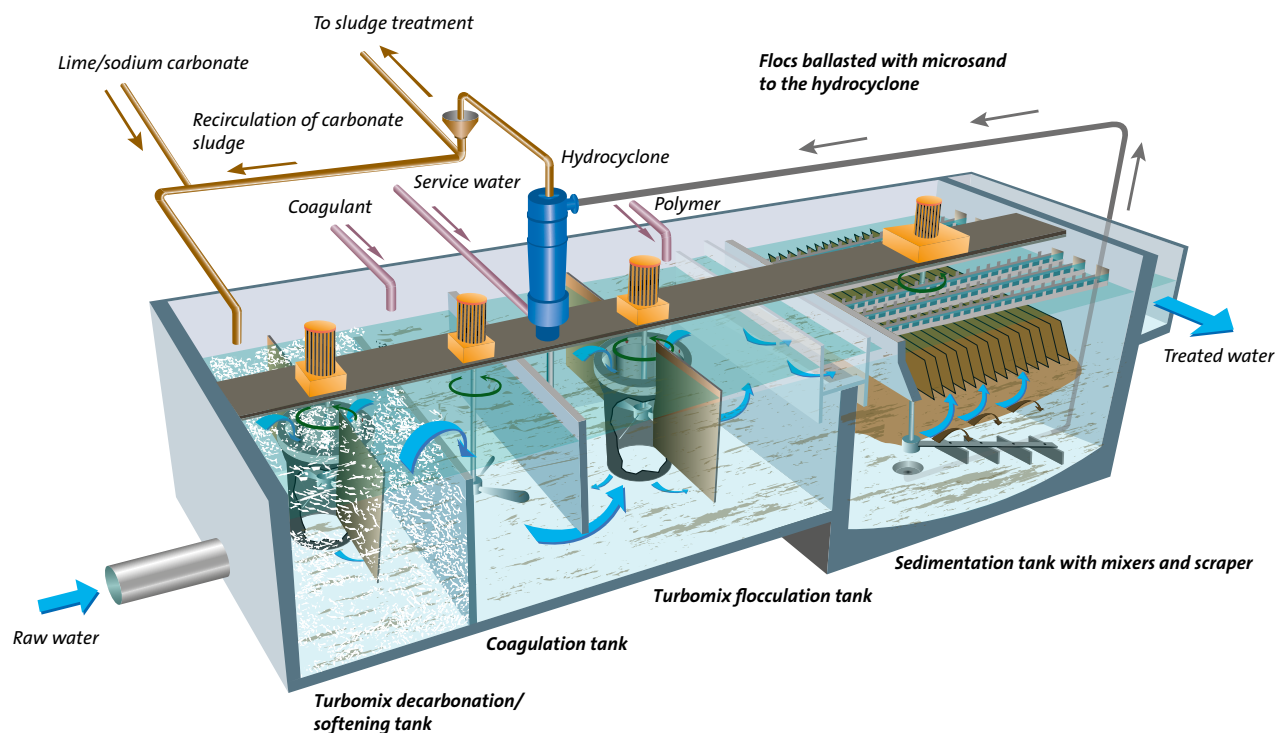
## The Actiflo Softening process

The operating characteristics of Actiflo Softening are identical to those of Actiflo, giving it the advantages of fast, high-performance treatment.

Upstream **of the coagulation, flocculation and sedimentation basins,** Actiflo Softening has a

**Turbomix™ reaction tank** into which chemical products are injected to form insoluble compounds.

**A recirculation circuit** with a specific hydrocyclone recovers clean microsand, returns the decarbonation and softening sludge to the reactor and purges excess sludge from the process.



## Advantages

- Small footprint: up to 10 times more compact than conventional decarbonation or softening processes
- High upward flow rate: up to 120 m/h
- Easy installation in existing tanks
- Improved mixture and accelerated chemical precipitation reaction thanks to the Turbomix tank
- Reduced coagulant consumption due to the recycling of carbonate sludge in the Turbomix tank
- Sludge characteristics: up to 8% dry matter; can be easily thickened and dried
- Easy to commission: start-up in a few minutes
- Can be fully automated and deployed in existing plants at reduced cost

## Applications

Actiflo Softening, an ideal solution for:

### *Industrial applications*

- Pre-treating water to avoid membrane fouling
- Production of make-up water for cooling towers and water recycling
- Treating water used in oil and gas production
- Treating SAGD (Steam Assisted Gravity Drainage) water in condensate circuits
- Treating wastewater from combustion gas desulfurization and acidic mining effluents
- Reusing wastewater in iron, steel and other metal industries
- Phosphorus co-precipitation

### *Municipal applications*

- Decarbonation and softening of surface or borehole water to produce drinking water

## REFERENCES

- > Chelyabinsk Power Plant, Chelyabinsk, Russia - 9,000 m<sup>3</sup>/day (2015)
- > Athy, Kildare, Ireland - 29,000 m<sup>3</sup>/day (2014)
- > EDF Bouchain, France - 26,000 m<sup>3</sup>/day (2014)
- > ENEL, Porto Tolle, Italy - 27,000 m<sup>3</sup>/day (2014)
- > Grande Raffinerie Oranaise de Sucre (GROS), Oran, Algeria - 1,000 m<sup>3</sup>/day (2014)
- > Vale, Long Harbour Processing Plant, NL, Canada - 29,000 m<sup>3</sup>/day (2013)
- > Abengoa Solana, Gila Bend, AZ, USA - 23,000 m<sup>3</sup>/day (2013)
- > JIFCO sulfuric and phosphoric acid plant, Eshidiya, Jordan - 13,000 m<sup>3</sup>/day (2013)
- > Kerry Ingredients & Flavors, Listowel, Ireland - 3,600 m<sup>3</sup>/day (2013)
- > Laurier Station, QC, Canada - 2,000 m<sup>3</sup>/day (2013)
- > Gahard, France - 2,000 m<sup>3</sup>/day (2011)
- > Coca-Cola, FEMSA, Acapulco, Mexico - 2,400 m<sup>3</sup>/day (2009)