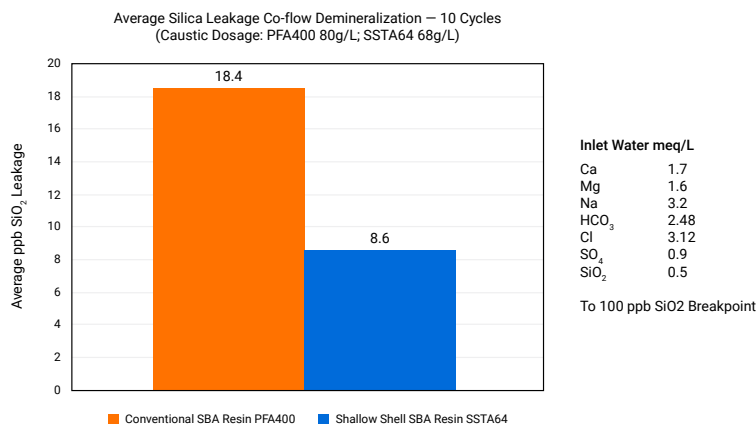


# Purolite™ Resins Shallow Shell™ Technology Improves Demineralization Efficiency and Reduces Operational Costs

The advanced structure of Purolite™ Resins Shallow Shell (SST™) anion technology leaves the center of each gel bead inactive, eliminating the sites that take the longest to exchange, are the most difficult to regenerate and are the most susceptible to fouling. Plus, the beads resist osmotic shock, extending the life of the resin.

**FIGURE 1**

**50% Lower Silica Leakage Using 15% Less Caustic**



Watch our Shallow Shell Technology video at  
[www.puroliteresins.com/SST](http://www.puroliteresins.com/SST)

## Key Advantages

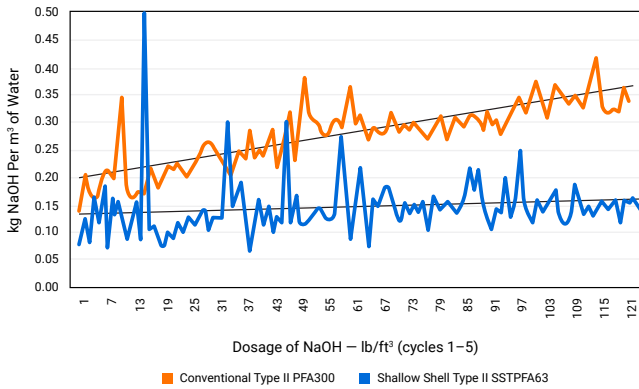
- Same throughput with 15% less chemical; lowers operating expenses
- Significantly reduces rinse water
  - 30% savings for counter-flow operation
  - 50% savings for co-flow operation
- Minimizes silica leakage
  - 50% less in co-flow
  - 20% less in counter-flow
- 10% higher operational capacity with same chemical dosage
  - Smaller CAPEX for new plants
- Superior organic fouling resistance compared to conventional gel resins
- Suitable for co-flow, counter-flow and packed bed systems
- Supports ISO 14001:2015 initiatives toward environmental management and impact
  - Uses less chemical regenerants and generates less waste

It is possible to cut operational costs without sacrificing performance.

The charts below demonstrate real-world examples of how Shallow Shell Technology enables unsurpassed regeneration efficiency, lower leakage from silica and TOCs, and reduced rinse water requirements for industrial demineralization applications.

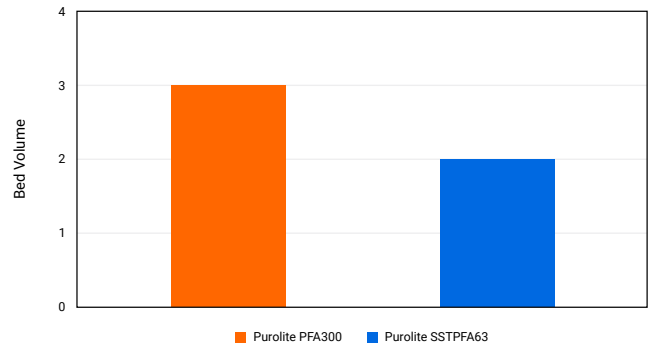
**FIGURE 2**

**50% Savings in Caustic Use When Treating High TOC Feedwater**



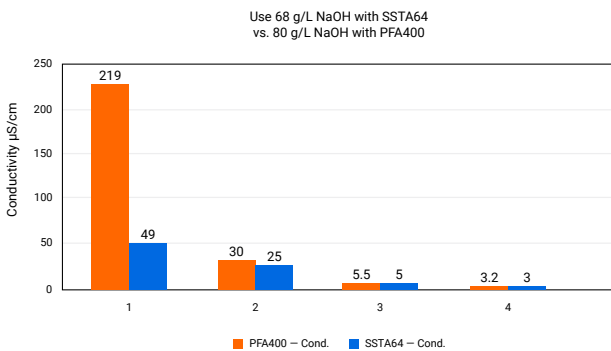
**FIGURE 4**

**33% Rinse Volume Savings in Counter-flow Mode**



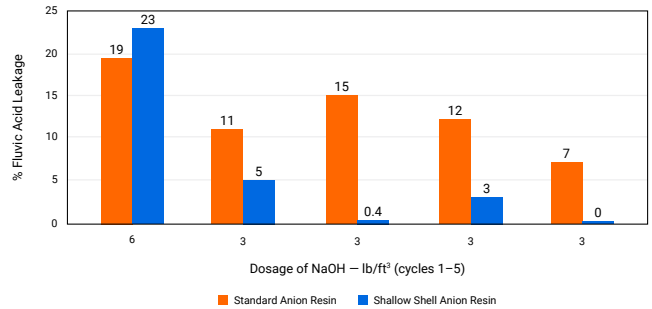
**FIGURE 3**

**Co-flow Demineralization Rinse Down Profile with 15% NaOH Savings**



**FIGURE 5**

**Fulvic Acid Leakage Representing TOC Fouling**

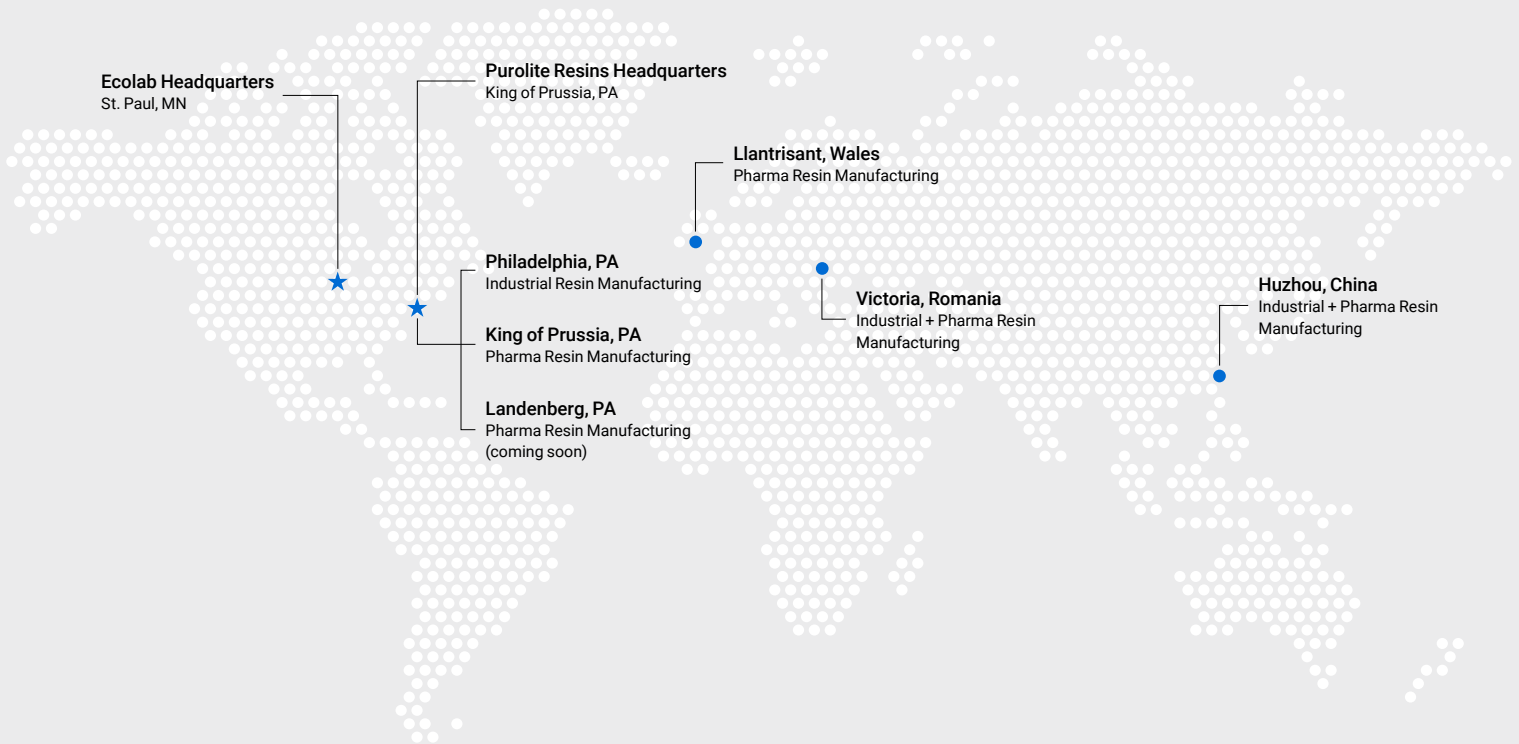


Contact your regional technical sales expert to learn how SST resins can make your demineralization system more effective, efficient and environmentally sound.

Ecolab is a global developer, manufacturer, and supplier of Purolite™ Resins including ion exchange, catalyst adsorbent and advanced polymers that make the world cleaner and healthier.



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## We're ready to solve your process challenges.

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