

**A new Strong Base Anion-Type I macroporous resin,
Purolite[®] A502PS, for improved decolorization
in a Japanese beet sugar company**

Challenge

A Japanese beet sugar company had historically used our competitor's Strong Base Anion (SBA) resins for beet sugar decolorization in all of their plants. These products had worked satisfactorily, however the customer desired a new resin which could combine higher capacity for color removal and provide better economics.

The problem for this customer was that the already high sugar quality demands were becoming increasingly severe, while at the same time, economics declined. Another problem for them was that the crop yield and quality of beet raw juice were strongly affected by the weather each year. Warmer weather conditions in Japan in recent years have resulted in fewer crops and more impurities in the beet juice.

Solution

Purolite worked extensively with the customer to understand the problem and, as a result, developed a new strong base anion – type I macroporous resin **Purolite A502PS**, with higher color removal capacity, specifically to meet the customer's objectives.

The customer conducted final confirmation tests on **Purolite A502PS** in comparison with two major competitor's resins. Of importance, was the ability to use **Purolite A502PS** not only for thick juice but also for thin juice decolorization.

Laboratory Test Conditions

- Resin volume: 60ml
- Regeneration: NaCl 215g/l + NaOH 10g/l at 2BV/hour, then rinse down by demineralized water at the same flux rate.
- Feed Syrup: 16 ° Bx, 2600 ICUMSA, beet juice after softening
- Feed temperature: 80 °C jacketed column, syrup fed at 6 BV/hr from the feed-tube which is soaked in an 80 °C hot bath.

Results

Note-1: Color (ICUMSA) of the treated solution

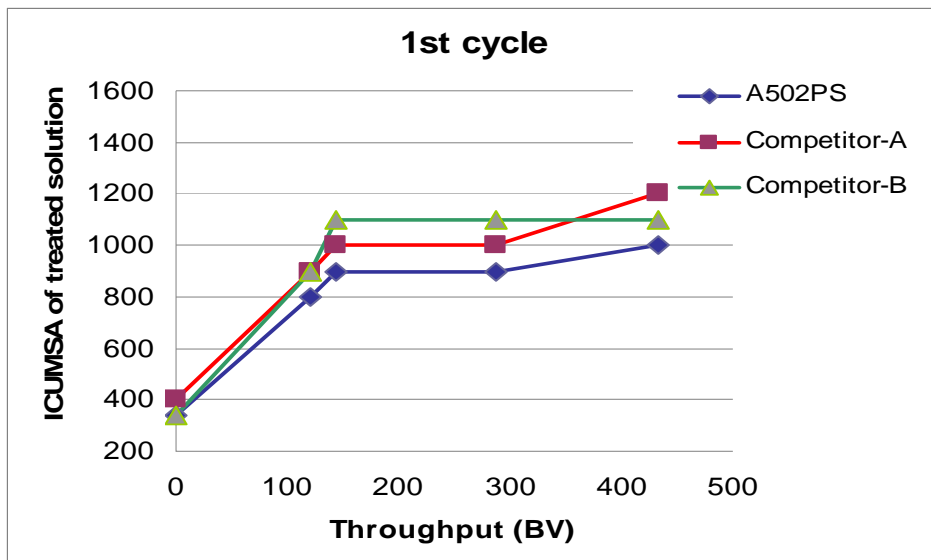


Fig-1: First cycle

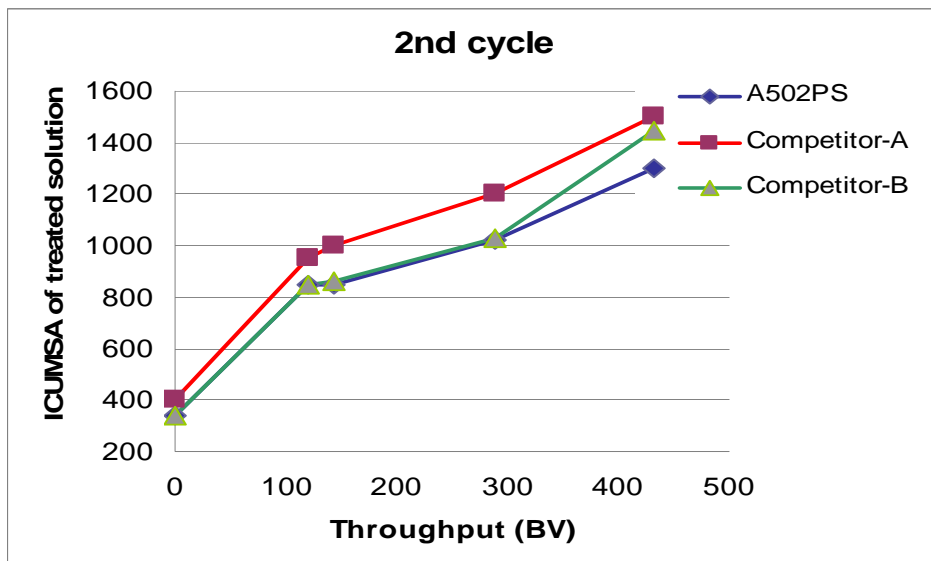


Fig-2: Second cycle

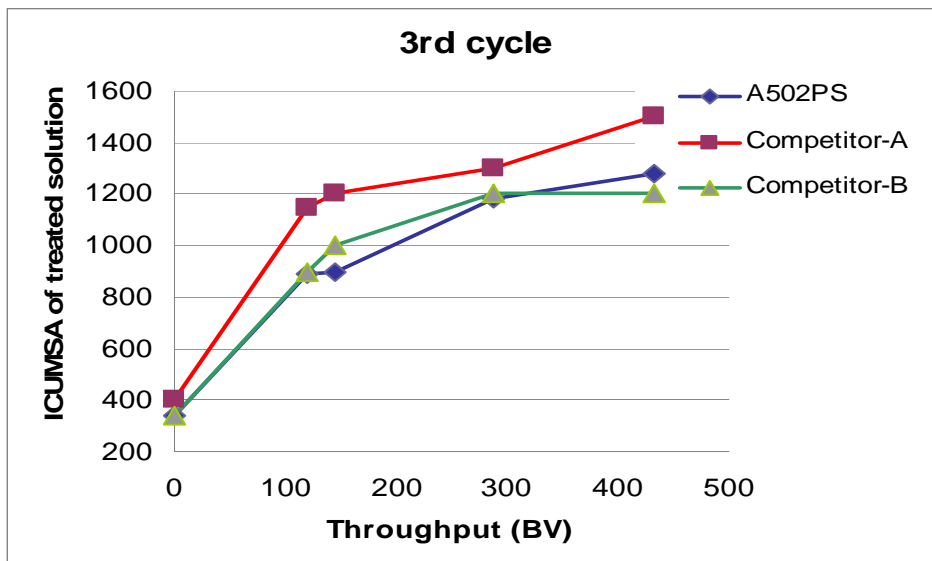


Fig-3: Third cycle

Note-2: Color removal % at each point through one cycle (3 cycles average)

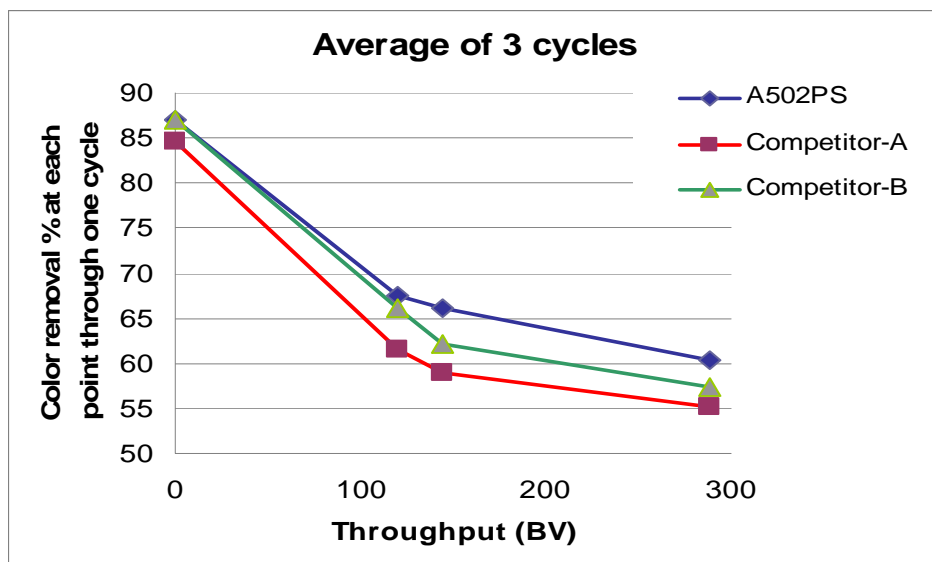


Fig-4: Color removal % at each point through one cycle (3 cycles average)

Conclusion

Purolite A502PS was qualified for decolorization for this application by the customer. This new product was preferred because it demonstrated higher color removal capacity and durability than any of the competing resins. **Purolite A502PS** was installed in this customers' plant and has been in successful operation since 2010.

#####

REGIONAL OFFICES

Purolite® has more than 40 offices worldwide

Americas

The Purolite Company

150 Monument Road
Bala Cynwyd, PA 19004
Telephone: 800-668-8139
 +1 610-668-9090
Fax: +1 610-668-8139

Asia Pacific

The Purolite Company

Purolite (China) Co. Ltd
Room 707, C Section
Huanglong Century Plaza
No.3 Hongda Road
Hangzhou
Zhejiang, China
310007
Tel + 86 571 87631382
Fax + 86 571 87631385

Europe

Purolite International Limited

Llantrisant Business Park
Llantrisant, Wales
CF72 8LF
UK
Tel + 44 1443 229334
Fax + 44 1443 227073

For more information, contact the closest regional office nearest you or scan this barcode with your smartphone or visit our website at www.purolite.com

