

# SUPRA

## BSM-50

HYBRID

**SILICA & ANTIMONY SELECTIVE  
HYBRID STRONG BASE ANION  
BORATE FORM**

ResinTech BSM-50 is a borate form antimony and silica selective hybrid gel type 1 strong base anion resin. Hydrated iron oxide is monoatomically dispersed through the polymer, giving the product hybrid properties. The borate form hybrid is able to remove chloride and sulfate in addition to silica, antimony<sup>125</sup>, and other radionuclides. BSM-50 is stable and is intended for all nuclear applications such as spent fuel pools that contain borated water.

### APPLICATIONS

- Antimony Removal
- Silica Removal

### TYPICAL PROPERTIES & PHYSICAL CHARACTERISTICS

<b>Polymer Matrix</b>	Styrenic Gel
<b>Ionic Form</b>	Borate
<b>Functional Group</b>	Iron oxide Hybrid / Triethylamine
<b>Physical Form</b>	Spherical Beads
<b>Particle Size</b>	16 to 50 US Mesh (297 - 1190µm)
<b>% &lt; 50 mesh (300µm)</b>	< 1%
<b>Minimum Sphericity</b>	95%
<b>Uniformity Coefficient</b>	1.6
<b>Temp Limit</b>	250°F (121°C)
<b>Capacity (meq/mL)</b>	1.4
<b>Moisture Retention</b>	35% to 50%
<b>Shipping Weight</b>	50 - 52 lbs/ft <sup>3</sup> (801 - 833 g/L)
<b>Color</b>	Black

### PACKAGING OPTIONS

- 500 ml samples
- 1 ft<sup>3</sup> drums
- 1 ft<sup>3</sup> bags
- 7 ft<sup>3</sup> drums
- 1 ft<sup>3</sup> boxes
- 42 ft<sup>3</sup> supersacks

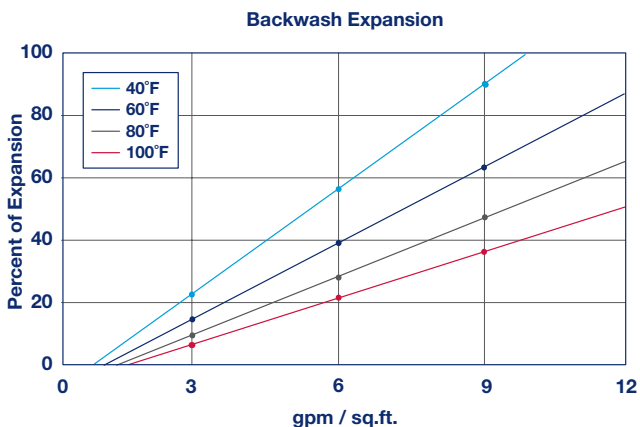
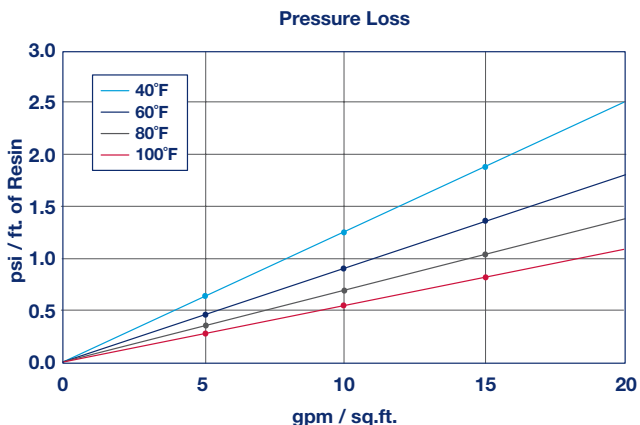


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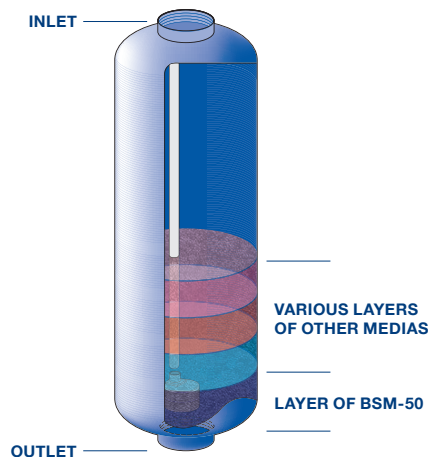
**SILICA REMOVAL**

ResinTech BSM-50 can be used at moderate pH to remove silica. At a flow rate of 0.5 BV/min, removal efficiency of ninety percent is possible for several hundred bed volumes of throughput. Silica does not dump as the resin exhausts; silica leakage increases gradually but some removal continues for many thousands of additional bed volumes. Even though silica removal is not complete, the lowering of silica helps maintain purity in spent fuel pools and other radwaste systems.

**ANTIMONY REMOVAL**

Trace levels of antimony are adsorbed by the iron hybrid material inside ResinTech BSM-50, which in all other respects remains a strong base anion resin. The resin is typically used as the bottom layer of a multilayer exchange tank. Antimony removal reduction is typically around 90% and in recycle applications where the source of antimony has been removed, remaining antimony can be reduced below the limit of detection.

**TYPICAL USE IS LAYERED UNDERNEATH OTHER MEDIAS**



**SUGGESTED OPERATING CONDITIONS**

Maximum continuous temperature	
Borate form	170°F
Minimum bed depth	6 to 12 inches
Maximum pressure loss	25 psi
Operating pH range	4 to 10 SU
Service flow rate	1 to 10 gpm/cu.ft.

Note: These guidelines describe average low risk operating conditions. They are not intended to be absolute minimums or maximums. For operation outside these guidelines, contact ResinTech Technical Support

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