# BSM-50

Grade: Standard

## Antimony & silica selective, hybrid anion resin, 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 throughout the polymer, giving the product hybrid properties. The borate form hybrid is able to remove chloride and sulfate in addition to silica, antimony125, and other radionuclides. BSM-50 is stable and is intended for all nuclear applications such as spent fuel pools that contain borated water.

### FEATURES & BENEFITS

- High Affinity For Antimony And Silica
- Supplied In Borated Form
- Superior Physical Stability
- Controlled Particle Size

### APPLICATIONS

- Antimony Removal
- Silica Removal
- Borated Water
- Groundwater
- Potable Water

### PHYSICAL PROPERTIES

| | |
|---|---|
| Polymer Matrix | Styrene/DVB |
| Polymer Type | Gel |
| Ionic Form (as shipped) | Borate ($BO_{-3}$) |
| Functional Group | Iron oxide Hybrid / Trimethylamine |
| Physical Form | Spherical Beads |
| Uniformity Coefficient | 1.60 |
| Particle Size | 16-50 US mesh (297-1190µm) |
| < 50 mesh (300 µm) % | < 1% |
| Minimum Sphericity (%) | 93 |
| Capacity (meq/mL) | 1.40 |
| Moisture Retention (%) | 35 to 50 |
| Shipping Weight | 48 - 50 lbs/cu.ft. (769 - 801 g/L) |
| Color | Black |

### SUGGESTED OPERATING CONDITIONS

| | |
|---|---|
| Maximum Temperature | 250°F (121°C) |
| Minimum Bed Depth | 12 in. (30.5 cm) |
| Maximum Pressure Loss | 25 psi (172 kPa) |
| Backwash Expansion (%) | 35 to 55 |
| Flow Rate | |
| Working Service | 1-10 gpm/cu.ft. (8-80 BV/h) |



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INNOVATIONS IN ION EXCHANGE

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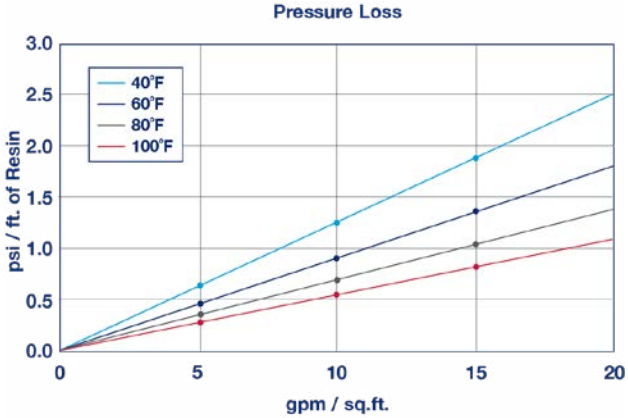
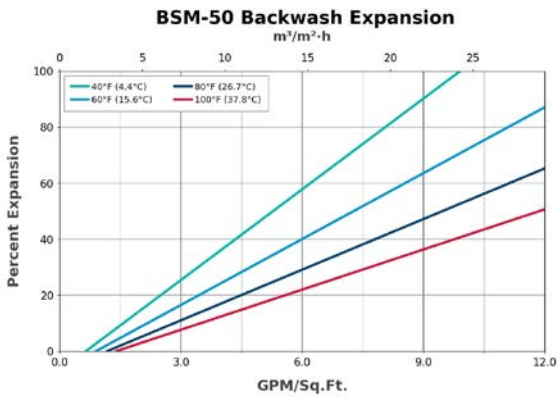
## PRESSURE LOSS




The graph above shows the expected pressure loss of ResinTech BSM-50 per foot of bed depth as a function of flow rate at various temperatures.

## BACKWASH EXPANSION




The graph above shows the expansion characteristics of ResinTech BSM-50 as a function of flow rate at various temperatures.

## 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.

## 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.

## REMOVAL OF OTHER TRACE CONTAMINANTS

ResinTech **BSM-50** is also able to remove other traces of activated metal oxides such as nickel, tin, and tellurium.



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## PACKAGING

### *Standard*

1 cu.ft. Bag | 7 cu.ft. Drum
25L Bag | 200 L Drum

### *Metric*

5 cu.ft. Drum | 42 cu.ft. Supersack
140L Drum | 1000 L Supersack

### *Shipping Weight*

48 - 50 lbs/cu.ft. (769 - 801 g/L)

## MATERIAL SAFETY DATA SHEETS (MSDS)

Material Safety Data Sheets (MSDS) are available for all products on the ResinTech website. They contain important health and safety information that may be needed to protect your employees and customers from any known health and safety hazards associated with our products. We recommend that you secure and study the pertinent MSDS for our products and any other products being used.

These suggestions and data are based on information we believe to be reliable. They are offered in good faith. However we do not make any guarantee or warranty. We caution against using these products in an unsafe manner or in violation of any patents; further we assume no liability for the consequences of any such actions.

Safety Data Sheets (SDS) are available at resintech.com



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