

# Filter Flow Technology, Inc.

122 Texas Ave. League City, TX 77573

Tel: 281-332-3438 Fax: 281-332-3644 e-Mail: [fft@filterflowtech.com](mailto:fft@filterflowtech.com)

## *ChemSorb<sup>®</sup> Filter Granules*

### **DESCRIPTION:**

High purity, natural, zeolite, mineral (14 x 30 & 8 x 14 mesh) that is classified as GRAS (Generally Recognized As Safe) under 21CFR Part 182.2729 and 40 CFR Part 180.1001 with ANSI/NSF Standard 61 Listing. Field tested and approved for drinking water filtration applications by the Public Drinking Water Division of the Texas Natural Resources Conservation Commission (TNRCC) and State of Washington, Department of Environmental Quality (DEQ). The material is mined, crushed, kiln-dried and screen-sized to assure maximum, water/liquid, flow at low differential pressure. The aluminosilicate, crystalline structure is depicted in Figure 1. The surface micro-mineral projections that trap fine particles (Figure 2), together with high surface area, makes this material an ideal, water filtration media. The material is mineralogically and thermally stable to 500°C. Some advantages of *ChemSorb<sup>®</sup> Filter Granules* versus conventional sand, anthracite and multimedia filter material are listed below.

- *Higher filtration capacity without additional capital costs.*
- *Reduced backwash frequency minimizes cost of compliance with the EPA Backwash Treatment Rule.*
- *High flow rate capacity - gravity flow (4 gpm/ft<sup>2</sup>) & pressure vessels (16-18 gpm/ft<sup>2</sup>) maximizes the net filtration production per filter bed square footage.*
- *Linear/near linear, head loss curve w/ superior, depth removal of suspended solids.*
- *Superior filtration rating translates to finer particle removal & enhanced water quality.*

### **PHYSICAL PROPERTIES:**

Bulk Density	50 lbs. per cubic foot
Mesh Size	8 x 14 or 14 x 30
Color	Light tan or beige
Surface Area	Avg. 24 m <sup>2</sup> /g
Surface Absorption	Hydrophilic
Thermal Stability	Stable to 500° C
Filtration Nominal Rating	<5μ

## **APPLICATIONS:**

*ChemSorb<sup>®</sup> Filter Granules* are used as a water/liquid, filter bed (or tank) material in lieu of sand/anthracite, pecan shells or other, coarse filtration material to efficiently remove suspended solids and fine turbidity particles. The filter granules physically filter and trap the suspended solids. In addition, the granules remove a wide range of colloidal and soluble, inorganic metallic, contaminants by surface sorption, chemical-binding, charge-neutralization, coagulation, reactions and/or ionic, ion-exchange phenomena.

- Replacement media for sand/anthracite

*Gravity filters- 4 gpm/ft<sup>2</sup> design specification*

*Pressure vessels-16-18 gpm/ft<sup>2</sup> design specification*

- *High performance, gravity flow beds for drinking water plants*
- *Industrial surface water pumping stations-gravity or pressure vessel, filter media for removal of turbid and silt particles.*
- *Cooling tower, filter beds to increase filtration capacity & enhance performance.*

## **AVAILABILITY:**

50 lb. Bags; Super-Sacks; or Truck Load Quantities shipped F.O.B. from the mining operation (78072) or Houston, TX (77054). [Allow 10-14 days for delivery].

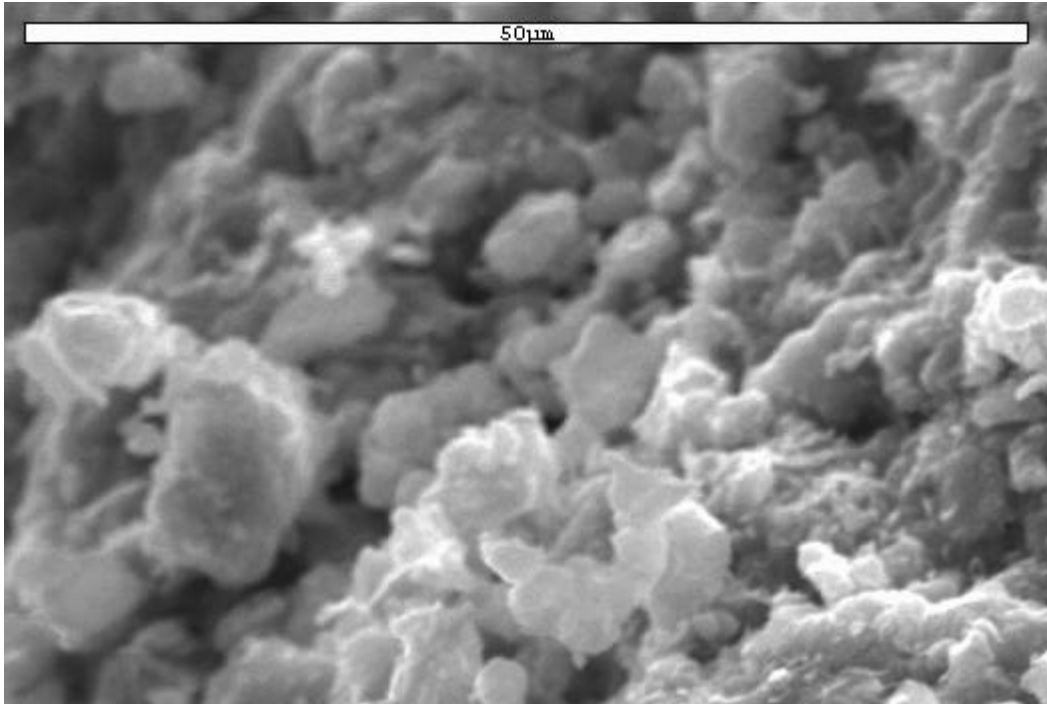
**Figure 1. Three dimensional CAD drawing showing the basic, tetrahedral, aluminosilicate, crystalline structure of the sorbent granules. The tetrahedral structure is formed by bonding of  $\text{AlO}_4$  and  $\text{SiO}_4$  with shared oxygen atoms.**



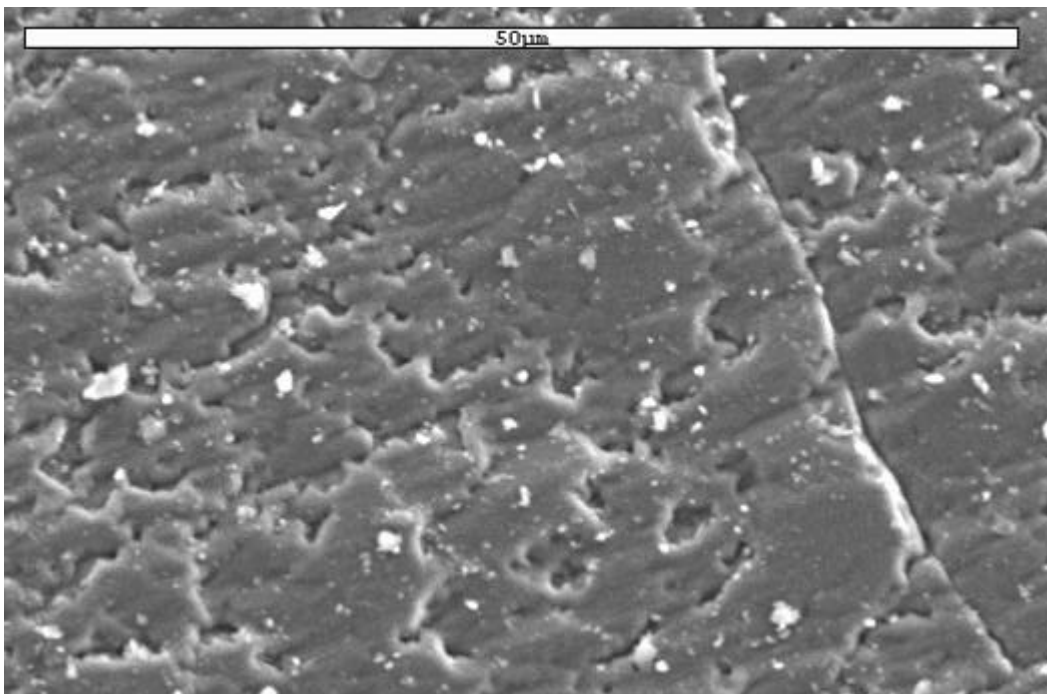
**Figure 2. High magnification, photomicrograph of a sorbent granule surface. Note the intercrystalline structure & pore spaces (2 -10 microns) that provide high, surface area for water/liquid filtration of TSS particles. The granules provide ~8 fold higher “available filtration area than comparable sized sand/ anthracite beds.**



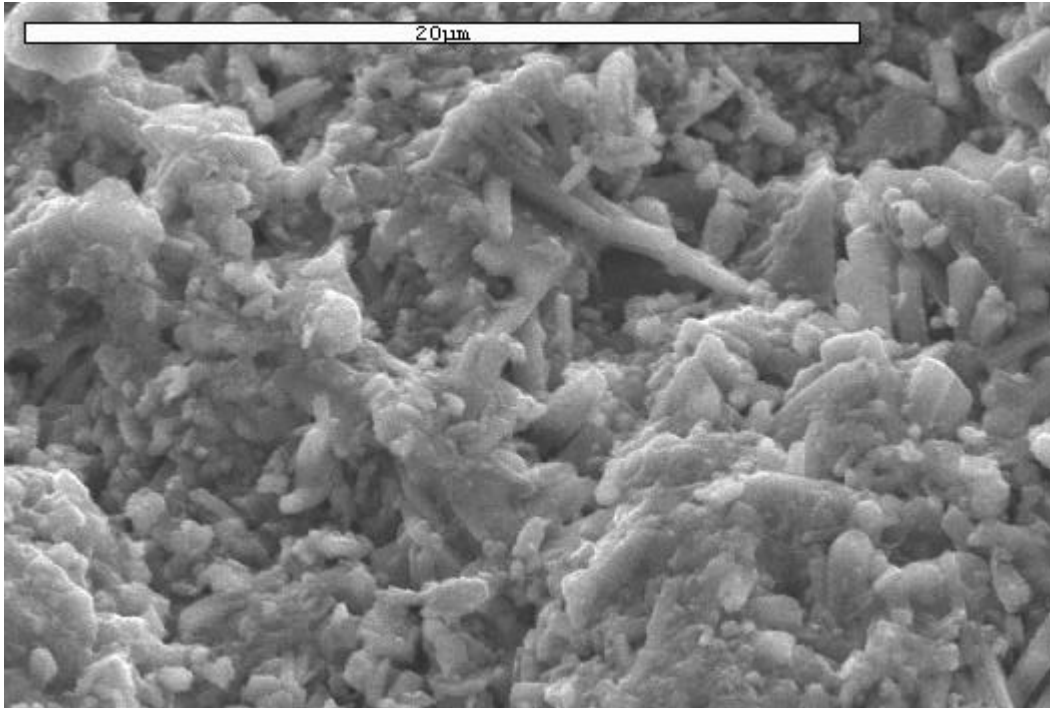
**FIGURE 3 A) – Photomicrograph of a scanning EM field showing the high surface area structure of a ChemSorb Sorbent Granule (Zeolite). A calibration bar is shown for size comparison.**



**FIGURE 3 B) – Photomicrograph of a scanning EM field showing the relatively flat, low surface structure of a sand particle. A calibration bar is shown for size comparison.**



**FIGURE 4 A) – Photomicrograph of a scanning EM field showing the high surface area structure with numerous zeolite, crystal projections. A calibration bar is shown for size comparison.**



**FIGURE 4 B) – Low magnification photomicrograph of sand particle. Note the smooth surface structure compared to the zeolite particle.**

