

S1.1.3 CERAMIC FIBER FILTERS FOR HIGH-TEMPERATURE INDUSTRIAL APPLICATIONS

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A recently developed filter media that can operate to 1,000o C (1,832o F) has been demonstrated in a number of industrial application. This filter media consists of ceramic fibers, giving it an open volume of 85%. This differs from high-temperature ceramic membrane and sintered refractory metal filters, in performance, by providing less than 2 millibars backpressure, 1/4th the weight and a fraction of the footprint. The ceramic fiber filtration method is depth filtration rather than mechanical filtration requiring very fine pore sizes; yet, the filtration efficiencies are equivalent. The presentation will discuss the ceramic fiber media physical characteristics and filtration efficiency properties. A few industrial applications where testing has occurred will be discussed including biomass syngas filtration, diesel exhaust emissions, oil and grease vapor emission control, and thermal oxidizer prefiltering.