

Binder-Free High Porosity Carbon Filtration

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ABSTRACT

A proprietary thermal treatment of activated carbon that creates a free oxide surface and unique porosity structure has been developed for purification of compressed air, carbon dioxide, and water etc. Pore area and porosity percentage for high porosity activated carbon shows five times better than conventional coconut shell activated carbon. Patented modular design has produced a truly revolutionary approach in filter technology. A unique binder-free filter design demonstrates much less pressure drop and longer filter life (or higher removal capacity). Testing in compressed air shows 99.98% of the oil aerosol removal (coalescing) efficiency compared to <90% of conventional activated carbon. Particulate removal efficiency has been tested at 0.1 and 1.0 ACFM and results show 100% removal for all particulate sizes tested between 0.3 and 5 micron. Pressure drop as a function of air flow rate will be discussed. The results for carbon dioxide and water purification will be presented regarding to improvement of carbonation, and removal of cyst and particulates etc.