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- (54) **ADVANCED FIRE-RESISTANT FORMS OF ACTIVATED CARBON AND METHODS OF ADSORBING AND SEPARATING GASES USING SAME**
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- (52) **U.S. Cl.**  
CPC ..... **C09K 21/02** (2013.01); **B01D 53/04** (2013.01); **B01J 20/3293** (2013.01); **B01D 2253/102** (2013.01); **B01D 2257/11** (2013.01); **B01D 2257/708** (2013.01)
- (58) **Field of Classification Search**  
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See application file for complete search history.

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- (57) **ABSTRACT**  
A method of removing a target gas from a gas stream is disclosed. The method uses advanced, fire-resistant activated carbon compositions having vastly improved fire resistance. Methods for synthesizing the compositions are also provided. The advanced compositions have high gas adsorption capacities and rapid adsorption kinetics (comparable to commercially-available activated carbon), without having any intrinsic fire hazard.

**8 Claims, 11 Drawing Sheets**