

## Product Bulletin for Semiconductor Grade Media



### Purafil® Semiconductor Grade Media (SGM)

SGM is produced specifically for use in semiconductor and microelectronic manufacturing applications for the control of acid gases such as hydrogen sulfide ( $H_2S$ ) and sulfur dioxide ( $SO_2$ ). SGM is a carbon-free, dry-scrubbing media that cleans the air without producing reaction by-products such as nitrogen oxides (e.g.,  $NO$ ,  $NO_2$ ) which are known to cause defects on exposed wafers.

SG media is impregnated during pellet formation, such that the impregnant is uniformly distributed throughout the pellet volume and is entirely available for reaction. The proprietary chemistry of the SG media provides the dual benefits of high removal capacities for acid gases as well as providing a visual indication of media life. SG media consists of high surface area, carbon-free, spherical blue pellets. These pellets are composed of specialty activated alumina combined with proprietary active ingredients that provide SGM with the physical and chemical properties required for optimum performance against its target contaminants.

### The Chemisorptive Process

Purafil's chemisorptive process removes contaminant gases by means of adsorption, absorption and chemical reaction. Target gases are trapped within the pellet where neutralization reactions convert acid gases into harmless solids, without the possibility of desorption. Further, the specialized color-indicating properties built into SG media causes the pellets to change from blue to white as they react with and remove targeted contaminants.

### Removal Capacity

- Hydrogen Sulfide: 10% minimum by weight
- Sulfur Dioxide: 6% minimum by weight
- Chlorine: 6% minimum by weight

### Physical Properties

- Appearance: Blue, roughly spherical pellets
- Moisture Content: 35% maximum
- Crush Strength: 35% - 70%
- Abrasion: 4.5% maximum
- Bulk Density: 45 lbs/ft<sup>3</sup> (0.72 g/cc) +/- 5%
- Nominal Pellet Diameter: 1/8" (3.18 mm)

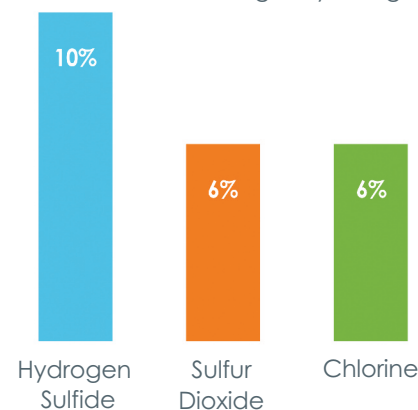
### Advantages

- Proprietary impregnation system will not produce  $NO_x$
- Offers a high removal capacity for  $H_2S$ ,  $SO_2$ , and other acid gases
- Can be used anywhere the removal of acid gases is required
- Changes color to indicate remaining media life
- Non-toxic, non-hazardous as supplied

### About Purafil

Purafil is the global leader for protecting people, processes, and investments by engineering and manufacturing customized clean air solutions. Since 1969, we have earned the customer loyalty of 20,000 companies, delivering world-class expertise and driving technical standards of the industry.

Removal Percentage by Weight



### Application Guidelines

- Temperature Range: -4°F to 125°F (-20°C to 51°C)
- Humidity Range: 10 - 95% RH (optimum range 45-65% RH)
- Airflow: SG media shall be effective in air velocities from 60 FPM to 500 FPM (0.30 to 2.54 m/s)
- Performance: SG media shall be designed for 99.5% minimum removal efficiency
- Life: SG media will change color from blue to white as the media is consumed. Regular media samples of SG media shall be taken for accurate projection of remaining media life.