



# Gore™ Filtration Products

Chemicals Industry

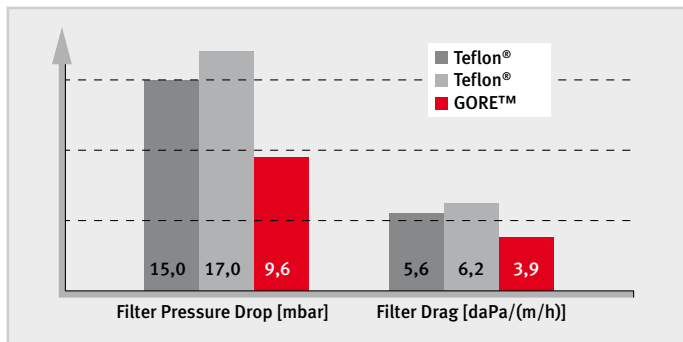
## Case history 7

## Fumed Silica

### OPTIMIZATION POTENTIAL

Fumed Silica is used for a variety of applications from paints, plastics, pharmaceuticals to microchip production. Burning chlorosilane with hydrogen creates fumed silica, which is then collected in a bag filter. The off gas is fed back without any dust to become the feedstock for making the chlorosilane gas stream in the first instance. There are two Main Unit Filters on site acting as two separate streams. Each stream has three compartments with 54 m<sup>2</sup> of filtration cloth per stream. Generally A/C Ratio is less than 1 – 1.5 FPM. Application is a pulse jet collector that operates with an aggressive gas stream containing up to 15% HCl.

Conventional PTFE felt filter bags were used in the application but required a secondary filter due to the level of dust carry over. Bag life was only around 12 – 18 months.



Bag performance based on bag life.

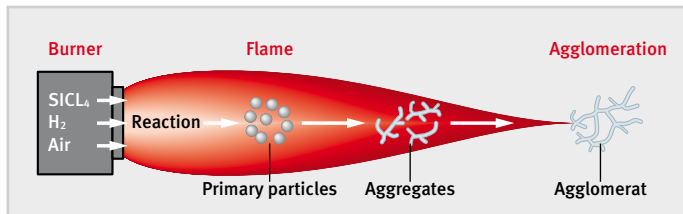


Photo: Cabot Corporation

- Application:** Fumed Silica (Main Unit Filter)
- Feed rate:** 2.000 kg/hr – 2.250 kg/hr (approx. 750 – 900 kg/hr fumed silica)
- Flow rate:** 11.500 m<sup>3</sup>/hr – 15.000 m<sup>3</sup>/hr
- Temperature:** 170°C – 220°C
- Filter area:** 54 m<sup>2</sup> per compartment
- Emissions:** Off gas can be re-used in production without further treatment
- Filter material:** GORE™ ePTFE Felt

### SOLUTION

The conventional filter bags were replaced with a 100% ePTFE GORE™ membrane felt.

### RESULT

Use of GORE filter bags allowed the plant to convert the secondary filter into a primary one which increased production by one third. Bag life was increased to between 3 and 5 years as compared to the previous bag life of 12 – 18 months for conventional filters.

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**W.L. Gore & Associates GmbH**  
 Wernher-von-Braun-Str. 18 D-85639 Putzbrunn  
 Tel.: +49-89-4612-2242 • Fax: +49-89-4612-2308  
 E-mail: ipd-deutschland@wlgore.com

[www.gore.com/filtration](http://www.gore.com/filtration)

#### Worldwide Sales and Support Contact Information

- Australia +61 2 94 73 68 00
- Benelux +31 7 36 87 24 44
- China +86 21 64 85 49 90
- France +33 1 56 95 65 65
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