

Pall Dia-Schumalith® N Ceramic Membrane Filter Elements

Description

Pall **Dia-Schumalith N** are special surface filter elements that are suitable for the filtration of hot gases. An improved creep and corrosion resistance correlated with an increase of service life are characteristics of this hot gas filter material based on silicon carbide. The excellent material properties are the result of a material development project. An improved binder system was developed and tested intensively. The result is a strong material compound with excellent mechanical stability, in high temperature applications.

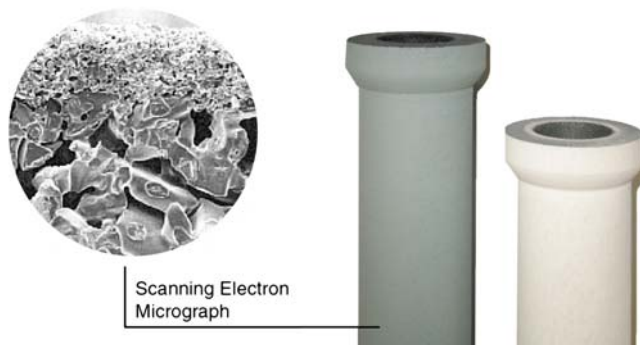
Different membranes are available depending on the field of application and filtration efficiency required.

The combination of the support body and membrane guarantees a low differential pressure at high filtration efficiency.

Dia-Schumalith N filter elements are ideally used in the field of hot gas filtration due to their outstanding resistance to temperature changes.

Applications

- Backwashable surface filters for gases
 - Fluid Catalytic Cracking processes (FCC)
 - Incineration process, e.g. PFBC of coal, radioactive contaminated waste
 - Gasification processes IGCC, e.g. coal, biomass, waste
 - Recovery of valuable substances at high temperatures



Scanning Electron
Micrograph

Chemical Resistance²

Dia-Schumalith N filter elements are resistant against acids, saline solutions and organic solvents, liquid or gaseous. They are not resistant to Hydrofluoric acid. **Dia-Schumalith N** filter elements are resistant up to pH 10 in the alkaline range.

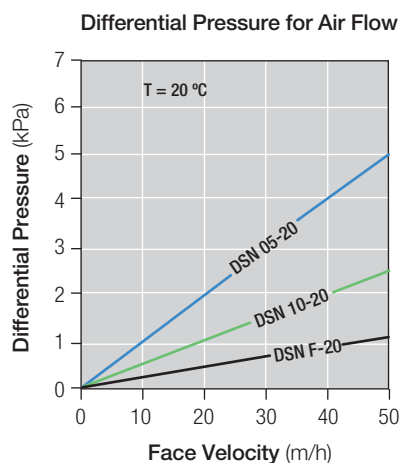
² As end use conditions can vary, it is the users responsibility to verify compatibility with their specific use conditions.

Technical Information

Dia-Schumalith N	05-20	10-20	F-20
Filtration Grade for Gases	<0.3 µm	0.3 µm	0.5 µm
Support Material	SL N 20	SL N 20	SL N 20
Membrane Material	DIA 05 Mullite Grains	DIA 10 Mullite Grains	DIA F Al ₂ O ₃ Fibres / SiC grains
Porosity Support Material	35 %	35 %	35 %
Material Density	1.85 g/cm ³	1.85 g/cm ³	1.85 g/cm ³
Specific Permeability	25 10 ⁻¹³ m ²	55 10 ⁻¹³ m ²	110 10 ⁻¹³ m ²
Bending Strength (O-Ring compression)	> 20 MPa	> 20 MPa	> 20 MPa
Maximum Temperature Resistance ¹	1000 °C	1000 °C	1000 °C
Hot Gas Filtration, Oxidizing Atmosphere	850 °C	850 °C	850 °C
Hot Gas Filtration, Reducing Atmosphere	650 °C	650 °C	650 °C
Expansion co-efficient (25 -1000 °C)	5.1 10 ⁻⁶ /K	5.1 10 ⁻⁶ /K	5.1 10 ⁻⁶ /K
Dimensions (Do / Di)	60 / 40 mm	60 / 40 mm	60 / 40 mm

¹ depending upon operating conditions.

Flow vs Differential Pressure



General Information

- Special care has to be paid to the sealing when installing filter elements.
- Ceramic elements are to be handled with care.
- The filter elements should not be cut to any other length as cutting may damage the surface membrane.
- Elements can be glued using commercial or special ceramic glues.
- Careful consideration should be taken regarding operating temperatures and chemical resistance.

Ordering Information

Part Number	Dia-Schumalith N	Type	Do / Di (mm)	Length (mm)	Area (m ²)	Weight (kg)
89452184	Candle	10-20 KK * pin	60 / 40	1000	0.18	3.0
89452000		05-20 KK* pin	60 / 40	1500	0.26	4.8
89452001		10-20 KK* pin	60 / 40	1500	0.26	4.8
89452003		F-20 KK *pin	60 / 40	1500	0.26	4.8

Please contact Pall for enquiries relating to dimensions not specified above.



Pall Corporation

Pall Industrial

New York - USA
 +1 516 484 3600 telephone
 +1 888 333 7255 toll free
 +1 516 484 6247 fax

Portsmouth - UK
 +44 (0)23 9230 3303 telephone
 +44 (0)23 9230 2507 fax

Visit us on the Web at www.pall.com

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Please contact Pall Corporation for product applicability to specific National legislation and/or Regional Regulatory requirements for water and food contact use.

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