

Discover the possibilities of Porofelt® - Depth filtration

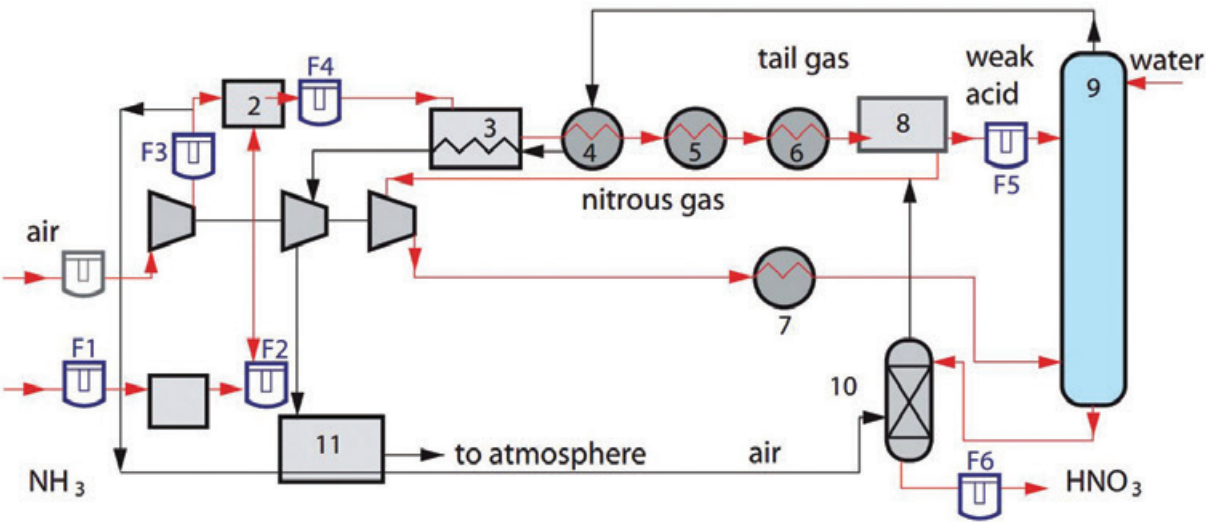
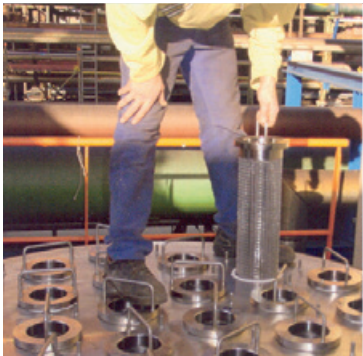
Mixed gas filtration on the production of nitric acid

Key figures

- Flow: 50 000 m³/h
- Filtration efficiency: 99% @ 3µm
- Clean ΔP: 10 mbar
- Temperature: 140°C
- Pressure: 3,8 bar

Key advantages

- The filter retains pipe scale that contains iron oxide, a poison for the platinum catalyst.
- The metal fiber filters, replace ceramic elements which used to break.
- The combination of the lowest ΔP, the highest dirt holding capacity and highest face velocity results in an attractive commercial balance.



Flowsheet: dual pressure HNO₃ process with medium-pressure combustion: (1) vaporizer, (2) mixer, (3) ammonia combustion, (4) tail gas heater, (5) economiser, (6) cooler-condensor, (7) cooler-condensor, (8) weak acid separator, (9) absorber, (10) bleacher, (11) DeNO_x, (F1) ammonia liquid filter, (F2) ammonia gas filter, (F3) hot air filter, (F4) mixed gas filter, (F5) Pre-recovery filter, (F6) weak acid Pt recovery filter

Other typical depth filtration applications

- Process gas purification in the refinery of natural gas.
- Purification of technical gases, such as hydrogen, nitrogen, oxygen, etc.
- Purification of steam in food and beverage or other production lines.
- Purification of process gas to protect downstream equipment from erosion or fouling.
- Protection of catalysts against poisoning or to purify a product.

better together

Porous metal fibre filter elements & systems for industrial gases

Being close to you is central to our strategy. This means you can count on your local contacts who speak your language and are close to your business.

EUROPE,
MIDDLE EAST & AFRICA

Purolator Advanced Filtration SA
rue de Cornemont 9-11
BE-4141 Sprimont
Belgium
T +32 4 360 94 65
F +32 4 360 94 77

THE AMERICAS

Purolator Advanced Filtration®
1022 Industry Drive
Shelby, North Carolina 28152
US
T +1 704 482 7381
F +1 704 xxx xxxx

Purolator Advanced Filtration®
P.O. Box 630145
Houston, Texas 77263-0415
T +1 713 977 0610
T +1 800 977 9473
F +1 713 xxx xxxx

ASIA + SOUTH EAST ASIA

Purolator Advanced Filtration®
No. 2 Xiafei Middle Road Quzhou
City Zhejiang, China 324022
T +86 570 807 5888

PT Purolator Advanced Filtration
Jl. Surya Madya Kav. 129K
Suryacipta City of Industry
Desa Kutangara
Kecamatan Ciampel
ID - West Java - Karawang 41361
Indonesia
T +62 267 861 0204
F +62 267 861 0205

www.purolator-efp.com



Partners in filtration innovation

About Purolator Advanced Filtration:

Purolator Advanced Filtration is a

global filtration company that serves

the chemical fiber, plastics proces-

sing, oil refining, mining and

general industrial markets. Commit-

ted to delivering innovative solutions

Purolator Advanced Filtration

collaborates with its customers to

help them realize improved plant

availability, reduced environmental

impact and enhanced bottom line

performance. Purolator Advanced

Filtration is part of Clarcor, a global

leader in filtration. CLARCOR has

operations on every major continent

in the world, and our employees are

at work every day to ensure out

products are in use to protect

people and the world they live in.

We are passionate about what we

do and we do things right.

Porous metal fibre filter systems for industrial gas filtration

Discover the unique benefits of Porofelt®; this range of filter elements consists of layers of sintered porous metal fibre medium with mesh support. They are designed to withstand high temperatures, high pressure and/or corrosive atmospheres in the separation of solids from various applications gas streams.

Porofelt® - High performance filtration of industrial gases

The wide variety of thin & highly porous fleeces (porosity between 60 to 85%) of Porofelt® media offers a higher permeability and lower pressure drop in comparison to other metal and non-metal media concepts. Its non-compressibility increases the quality level through a finer filter rating and an extended on-stream life enhanced by the excellent thermal characteristics.

Ease of cleaning

The open structure of porous metal media makes it possible to clean in situ. In case of surface filtration, the systems proposed are Clean-In-Place solutions working by means of backpulsing. In case of static filters, the elements are cleaned off line but still on site.

High strength

The sintering process creates strong fibre bonds and guarantees a high strength filter medium. Combined with an appropriate inner core, Porofelt® HG filter elements can withstand thermal shocks, high pressures and frequent backpulsing.

Flexible design

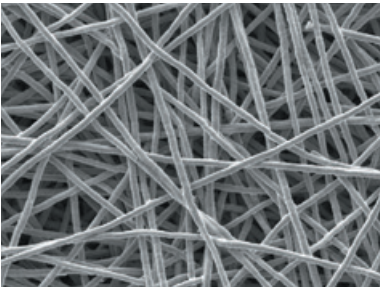
The filter design can easily be adapted to customer requirements. Depending on the desired perfor- mance, a proper alloy is selected to provide the suitable corrosion resistance and strength.

High temperature and corrosion capabilities of Porofelt® HG

Alloy	Temperature	Application
316L	360 °C	Standard applications
Inconel®601	560 °C	High temperatures
HR alloy	600 °C	High temperatures & corrosive environments (Incl. sulphurs)
FeCrAlloy®	1000 °C	Extreme temperatures & some specific sulphuric environments



Porofelt® HG filter systems.



Porofelt® media.

Filtration applications

Backpulse (surface) filtration

In applications where large dust concentrations have to be separated from a gas stream under extreme conditions, surface filtration is the solution. Porofelt® HG elements use the finest fibre diameters available on the market as of today. Our backpulse filter systems are designed to build a dust cake at the filter surface. The cake is removed at regular time intervals using automated backpulse, allowing online cleaning of filter elements without filtration process disruption

Benefits

- Automatic cleaning system
- Homogen cake build-up & no clogging: long on-stream life
- Long on-stream life time: no clogging
- Extremely high efficiencies: extremely low emission
- No hazardous maintenance on equipment
- Not brittle

Applications

- Catalyst and product recovery in gas/catalytic processes
- Emission control
- Protection of down stream equipment
- Venting protection for pneumatic product or catalyst transport

Depth filtration

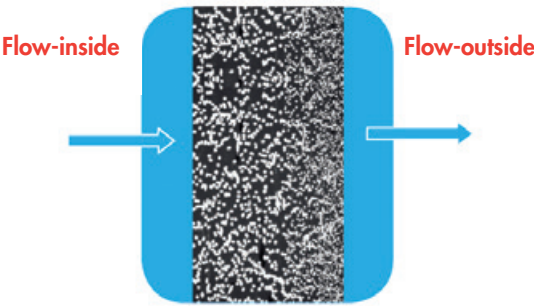
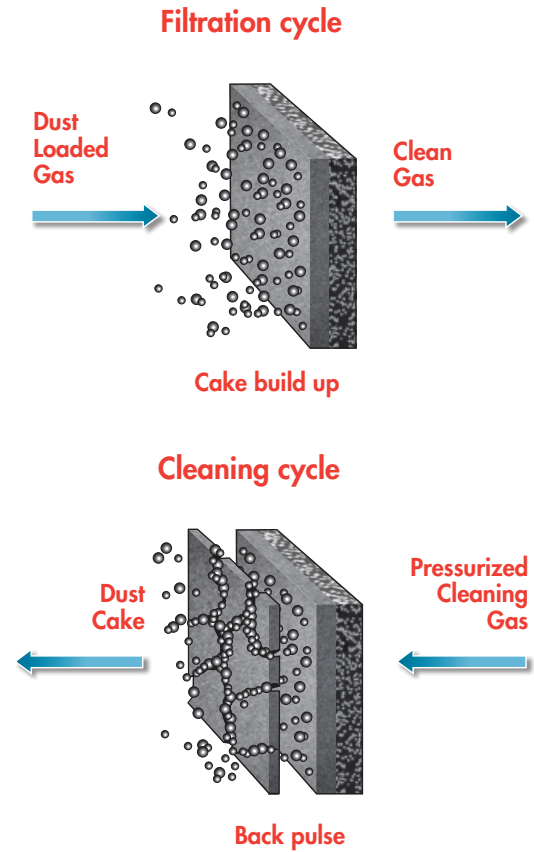
Depth filtration is mainly used in applications where small dust loads (<10 mg/Am³) have to be separated from a gas stream. The contaminants or particles are captured within the multiple layer structure of the filter medium. Our depth filter systems are the perfect solution for applications combining temperature and corrosion resistance with high dirt holding capacity and excellent off-line cleaning possibilities.

Benefits

- High permeability: low pressure drop
- High dirt holding capacity: long on-stream life
- Easy to clean (water, chemicals): reusable
- High porosity & pleatable: compact construction

Applications

- Protection of downstream equipment from erosion or fouling
- Protection of catalysts from poisoning
- Product purification



Discover the possibilities of Porofelt® - Surface filtration

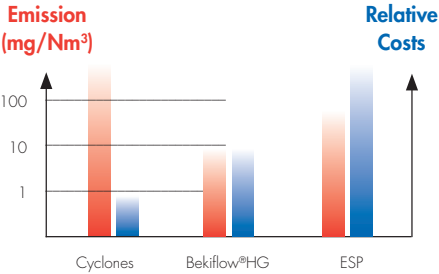
Hot gas filtration - on the production of Magnesium Oxide

Key figures

- Flow: 36 000 m³/h
- Temperature: 550°C
- Face velocity: 2.3 m/min
- Medium Alloy: Porofelt® Inconel® 601
- Started up in 1986

Key advantages

- Filtration is done at high temperature, well above the acid dew point.
- Lifetime: the original filter elements are still in service, after more than 20 years.
- The legislation on particulate emission into the atmosphere is getting tighter every year. Typical emission levels for high efficiency cyclones are close to 50 - 100 mg/Nm³. To meet current and future limits other technologies of separation are required. Electro Static Precipitators (ESP) fit the criteria; however this technology is highly sensitive to flow rate fluctuations, fits only for low pressure applications and is highly expensive not only in capex but also in operational costs.



Other typical surface filtration applications

- 3rd & 4th stage clean up for catalyst regeneration in refinery applications.
- Catalyst recovery in chemical fluid bed reactor processes.
- Process gas clean-up before further use.
- Emission control.

Product Retention in the production of polypropylene (PP)

Key figures

- Flow: 15 000 kg/h
- Process pressure: 10 barg
- Medium Alloy: Porofelt® HC AISI 316L

Key advantages

- The installation of an automatic filter avoids any further hazardous replacement of disposable filter bags.
- Mechanically strong & stable, the filter elements don't tear and assure a continuous and reliable protection of the downstream compressors, preventing them from fouling.
- Lifetime: the ultra-fine surface prevents particles from penetrating the filter medium, thus avoiding polymerization and clogging in the matrix of the medium.



Applications where Purolator provides surface filtration solutions

Refinery flue gas & catalyst hoppers, petrochemical olefins (propylene & ethylene), EDC oxy-chlorination, calcination processes (pigments, cement, mining & ore smelting), steel manufacturing, power generation (nuclear, coal gasification), waste treatment (waste incineration, nuclear waste treatment), ...