

**Element for the removal of solid contaminants in gases as a prefilter or post filter.**

Donaldson® Ultrapoly™ PE elements contain highly porous sinter polyethylene filter media. Even the finest dust particles and other contaminants in compressed air and gases are being removed effectively on the surface and in the depth of the filter medium.

By utilizing various filtration mechanisms such as direct impaction and mechanical sieving, particles are retained with an absolute retention rate in gases related to the element pore size.



**Ultrapoly PE**  
Particle Filter Element

**APPLICATIONS**

Ultrapoly PE filter elements are ideal in the following industries and applications:

- Chemical
- Petrochemical
- Pharmaceutical
- Plastic
- Food
- Beverage
- General machine fabrication
- Instrumentation and control air

FEATURES	BENEFITS
Filter surface 5.5 in <sup>2</sup> (0205) up to 480 in <sup>2</sup> 3050)	Suitable for a wide range of applications and flow rates
Void volume – porosity grade +45%	High dirt holding capacity; lower differential pressure
Permanent temperature range -4°F up to +176°F	Broad application range
Removal of contaminants down to 25 µm	Guaranteed retention grade
Regenerative	Economical, longer service lifetime

## SPECIFICATIONS

MATERIALS	
Filter Media	Pure high molecular polyethylene
Bonding	Epoxy resin
End Caps	Aluminum
Two O-Rings	Perbunan®*: silicone free and free of compound (standard)

Retention Rate	> 99.98% in gases; defined rate of particles larger than the pore size
Maximum Differential Pressure	30 psi at 68°F regardless of system pressure
Initial Differential Pressure at Nominal Flow	0.44 psi

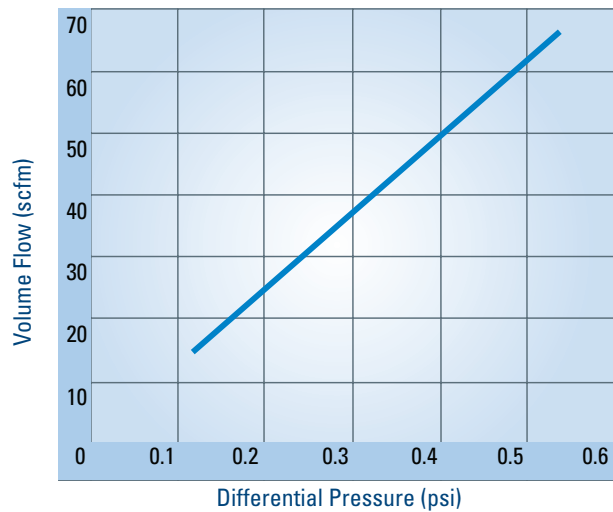
## PRESSURE DROP CALCULATIONS

Element Size	Correction Factor Filter Surface (C <sub>F</sub> )
0205	0.08
0305	0.10
0310	0.12
0410	0.17
0420	0.19
0520	0.25
0525	0.32
0725	0.47
0730	0.68
1030	1.00
1530	1.55
2030	2.10
3030	3.20
3050	5.65

The performance curve is based on 1030 element, or one ten inch equivalent (TIE), and the correction factor for filter surface C<sub>F</sub> for a 1030 = 1.00.

### Performance of PE elements — compressed air

These curves define the flow of a 1030 filter element at standard conditions (14.7 psia; 68°F. R.H.= 70%)



#### EXAMPLE 1: LOW FLOW SINGLE ELEMENT

- Given:
- Flow rate = 12 scfm
  - Pressure = 80 psig
  - Using AG0002 (1 - 0205 SB Element) (25 μm)
- Convert flow given from standard cubic feet per minute to actual cubic feet per minute
    - 12 scfm x (14.7 psia / 94.7 psia) = 1.86 acfm (through the housing and element)
  - Divide by the correction factor
    - 1.86 / 0.08 = 23.25 acfm (through each TIE)
  - Pressure drop through this element = 0.2 psid

#### EXAMPLE 2: HIGH FLOW MULTIPLE ELEMENT

- Given:
- Flow rate = 15,500 scfm
  - Pressure = 150 psig
  - Using SH2200 (27 - 3030 SB Element) (5 μm)
- Convert flow given from standard cubic feet per minute to actual cubic feet per minute
    - 15,500 scfm x (14.7 psia / 164.7 psia) = 1,383 acfm (through the housing)
  - Divide by number of elements
    - 1,383 / 27 = 51.2 acfm (through each element)
  - Divide by correction factor
    - 51.2 / 3.20 = 16 acfm (through each TIE)
  - Pressure drop through these elements = 0.24 psid

\* Perbunan® is a registered trademark of LANXESS Deutschland GmbH.



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