



Housing for Absorption Filters ADF-170 / ADF-300 (Ammonia Filter)

Gas analysis is a complex field. The sample gas to be analysed must be extracted and handled under quite diverse conditions to yield representative and reliable analysis results.

There frequently is a need to remove gaseous components from the sample gas through ad-/absorption.

For applications where the incidence of interfering components may fluctuate or the materials must have a long life-time, the ADF-170/300 model housings are the top choice.

All-purpose, in various sizes

Available with high-efficiency NH₃ absorber filling

Up to 38.000 hours life time for NH₃ absorber

Quick and easy maintenance (tool-less)

Chemical and temperature-resistant materials

Condensate output optional



Absorbent granules

NH₃ absorber

The residual ammonia slip primarily causes problems in flue gas analysis when removing nitrogen from flue gas in DeNOx systems (catalytic reduction of nitric oxides; SCR). Ammonium chlorides may particularly form in temperatures below 230 °C, which frequently cause irreversible deposits along the sample gas path or analyser. In addition, ammonia generally promotes the formation of acidic aerosols. The processes may permanently damage both the components in the gas conditioning system as well as the gas analyser. Only selective removal of ammonia parts from the sample gas can ensure a long measurement system life along and low maintenance costs.

The NH₃ absorber is the very easy and cost-effective option to selectively and reliably remove traces of ammonia from the sample gas. Of course they do not affect the gas components to be monitored, such as SO₂, NO, NO₂, CO₂, CO.

- Reliable, selective NH₃ removal from the sample gas
- Long life of up to 38.000 h
- NH₃ absorber refill pack

Filter material life in hours (h) per ppm NH₃ per volume flow (l/min):

$$\text{ADF 170 life} = \frac{20.000 \text{ h}}{1 \text{ ppm} * 1 \text{ l/min}} \text{ for the filter with 170 mm filter length}$$

$$\text{ADF 300 life} = \frac{38.000 \text{ h}}{1 \text{ ppm} * 1 \text{ l/min}} \text{ for the filter with 300 mm filter length}$$

The housing size and volume flow can be selected so as to control maintenance intervals.

Example: Sample gas contains 2 ppm NH₃ at a flow rate of 2 l/min. For the 300 mm long filter, for example, this means:

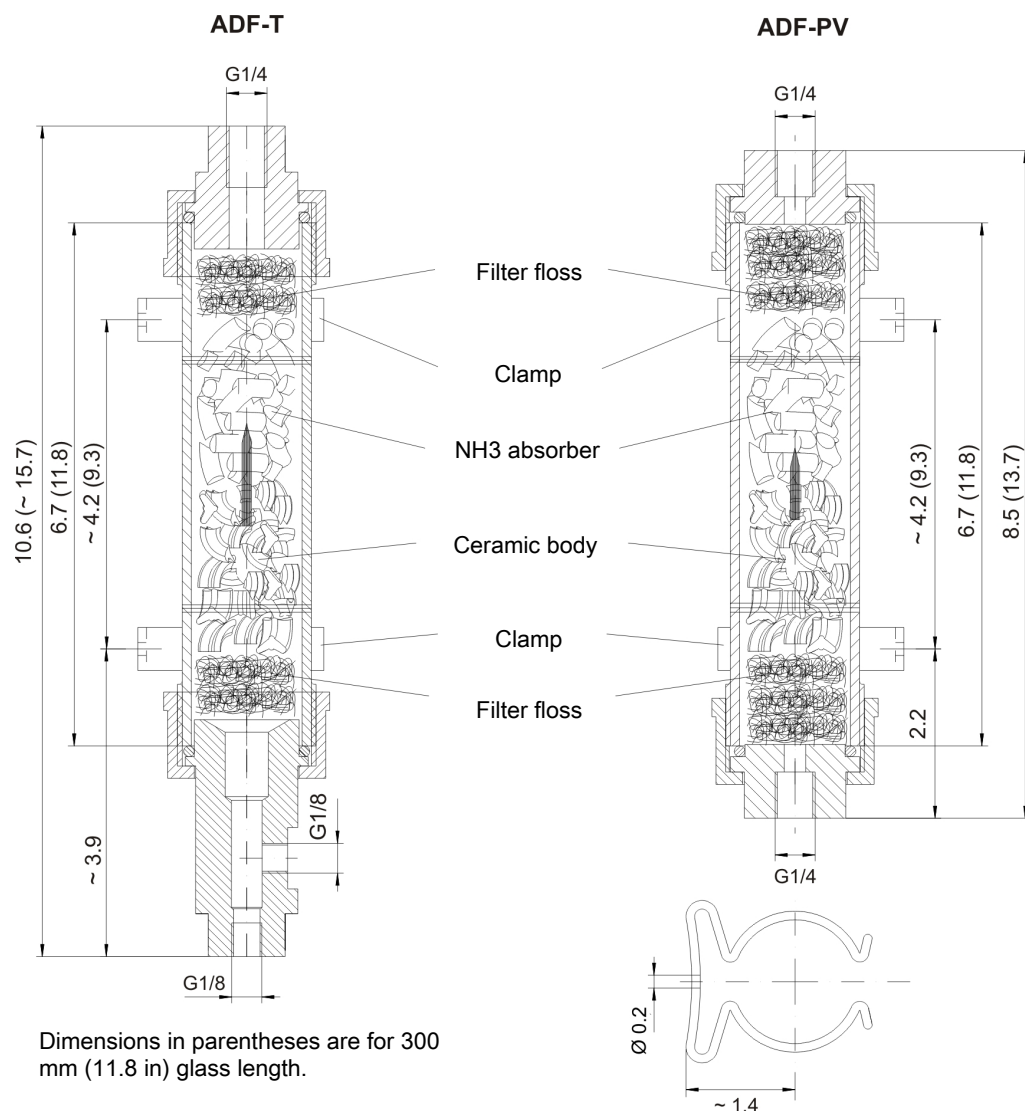
$$\text{ADF 300 life} = \frac{38.000 \text{ h}}{2 \text{ ppm} * 2 \text{ l/min}} = 9.500 \text{ h}$$

So the lives are then:

- 9.500 hours (approx. 13 months) for the ADF 300
- 5.000 hours (approx. 7 months) for the ADF 170

NOTICE! Other absorbent materials available upon request!

Dimensions



Technical Data

ADF-170 / ADF-300

Filter gas connections	PTFE - body (ADF-T-...), gas inlet: G1/8, gas outlet G1/4, condensate out connection G1/8 PVDF body (ADF-PV-...), gas inlet and outlet G1/4
Filter glass	Duran glass
Gasket material	Viton
Temperature max.	300 °F (gas) / 212 °F (ambient)
Pressure max.	2 bar abs. at 300 °F
Fill volume	approx. 7.6 in ³ for ADF-...-170 approx. 15.3 in ³ for ADF-...-300
Weight (without fill)	approx. 0.7 lb for ADF-...-170 approx. 0.9 lb for ADF-...-300
Weight (ceramic fill)	approx. 0.1 lb for ADF-...-170 approx. 0.2 lb for ADF-...-300
Weight (NH ₃ absorbent material)	approx. 0.1 lb for ADF-...-170 approx. 0.2 lb for ADF-...-300

Ordering instructions
Absorption filter with NH₃absorbent material

(The filter housings are filled with absorbent material)

Item no.	Model	Length	Material	Miscellaneous
41 57 599 KG	ADF-PV-170 KG	170 mm (6.7 in)	PVDF	
41 57 699 KG	ADF-PV-300 KG	300 mm (11.8 in)	PVDF	
41 57 799 KG	ADF-T-170-A KG	170 mm (6.7 in)	Teflon	
41 57 899 KG	ADF-T-300-A KG	300 mm (11.8 in)	Teflon	
46 222 167	Glass fibre filter floss			Package containing 0.2 lb
41 57 299 12	NH ₃ ceramic granule refill pack			1 pack required for 170 mm (6.7 in) filter length 2 pack required for 300 mm (11.8 in) filter length

Absorption filter without absorbent material

Item no.	Model	Length	Material	Miscellaneous
41 57 599	ADF-PV-170	170 mm (6.7 in)	PVDF	
41 57 699	ADF-PV-300	300 mm (11.8 in)	PVDF	
41 57 799	ADF-T-170-A	170 mm (6.7 in)	Teflon	with condensate output
41 57 899	ADF-T-300-A	300 mm (11.8 in)	Teflon	with condensate output
46 222 167	Glass fibre filter floss			Package containing 0.2 lb

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