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 lifetime, the ADF-170/300 model housings are the top choice.

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

- 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):

ADF 170 life = \[ \frac{20,000 \text{ h}}{1 \text{ ppm} \times 1 \text{ l/min}} \] for the filter with 170 mm filter length

ADF 300 life = \[ \frac{38,000 \text{ h}}{1 \text{ ppm} \times 1 \text{ l/min}} \] 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:

ADF 300 life = \[ \frac{38,000 \text{ h}}{2 \text{ ppm} \times 2 \text{ l/min}} = 9,500 \text{ h} \]

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

ADF-T

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.
150 °C (gas) / 100 °C (ambient)

Pressure max.
2 bar abs. at 150°C

Fill volume
approx. 125 ml for ADF-...-170
approx. 250 ml for ADF-...-300

Weight (without fill)
approx. 0.3 kg for ADF-...-170
approx. 0.4 kg for ADF-...-300

Weight (ceramic fill)
approx. 50 g for ADF-...-170
approx. 100 g for ADF-...-300

Weight (NH₃ absorbent material)
approx. 50 g for ADF-...-170
approx. 100 g for ADF-...-300

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.
150 °C (gas) / 100 °C (ambient)

Pressure max.
2 bar abs. at 150°C

Fill volume
approx. 125 ml for ADF-...-170
approx. 250 ml for ADF-...-300

Weight (without fill)
approx. 0.3 kg for ADF-...-170
approx. 0.4 kg for ADF-...-300

Weight (ceramic fill)
approx. 50 g for ADF-...-170
approx. 100 g for ADF-...-300

Weight (NH₃ absorbent material)
approx. 50 g for ADF-...-170
approx. 100 g for ADF-...-300
Absorption filter with NH₃ absorbent material
(The filter housings are filled with absorbent material)

<table>
<thead>
<tr>
<th>Item no.</th>
<th>Model</th>
<th>Length</th>
<th>Material</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>41 57 599 KG</td>
<td>ADF-PV-170 KG</td>
<td>170 mm</td>
<td>PVDF</td>
<td></td>
</tr>
<tr>
<td>41 57 699 KG</td>
<td>ADF-PV-300 KG</td>
<td>300 mm</td>
<td>PVDF</td>
<td></td>
</tr>
<tr>
<td>41 57 799 KG</td>
<td>ADF-T-170-A KG</td>
<td>170 mm</td>
<td>Teflon</td>
<td></td>
</tr>
<tr>
<td>41 57 899 KG</td>
<td>ADF-T-300-A KG</td>
<td>300 mm</td>
<td>Teflon</td>
<td></td>
</tr>
<tr>
<td>46 222 167</td>
<td>Glass fibre filter floss</td>
<td></td>
<td></td>
<td>Package containing 100g</td>
</tr>
</tbody>
</table>
| 41 57 299 12 | NH₃ ceramic granule refill pack |        |          | 1 pack required for 170 mm filter length  
|            |                    |        |          | 2 pack required for 300 mm filter length           |

Absorption filter without absorbent material

<table>
<thead>
<tr>
<th>Item no.</th>
<th>Model</th>
<th>Length</th>
<th>Material</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>41 57 599</td>
<td>ADF-PV-170</td>
<td>170 mm</td>
<td>PVDF</td>
<td></td>
</tr>
<tr>
<td>41 57 699</td>
<td>ADF-PV-300</td>
<td>300 mm</td>
<td>PVDF</td>
<td></td>
</tr>
<tr>
<td>41 57 799</td>
<td>ADF-T-170-A</td>
<td>170 mm</td>
<td>Teflon</td>
<td>with condensate output</td>
</tr>
<tr>
<td>41 57 899</td>
<td>ADF-T-300-A</td>
<td>300 mm</td>
<td>Teflon</td>
<td>with condensate output</td>
</tr>
<tr>
<td>46 222 167</td>
<td>Glass fibre filter floss</td>
<td></td>
<td></td>
<td>Package containing 100g</td>
</tr>
</tbody>
</table>

NOTICE! Other absorbent materials available upon request!