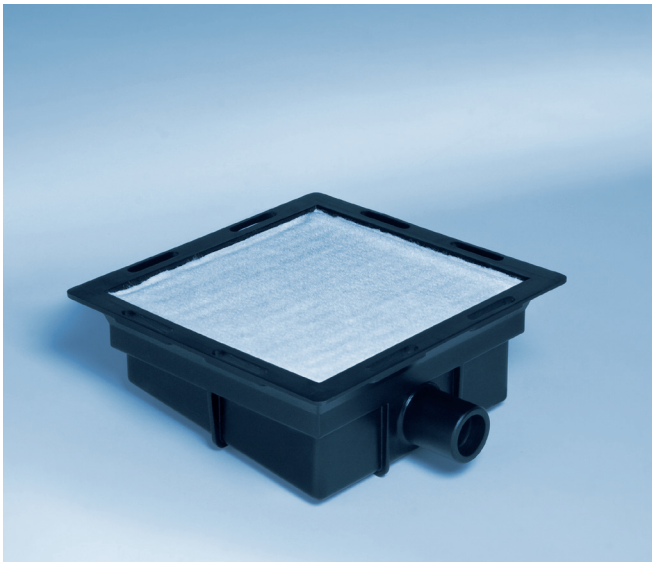
FREUDENBERG FCCT SE & CO. KG

# FREUDENBERG VILEDON® FUEL CELL FILTERS NEW HIGH CLASS N-MEDIUM

## THE NEW FFCCT HIGH CLASS FUEL CELL FILTER MEDIA N-TYPE FOR ADDITIONAL PROTECTION AGAINST AMMONIA



Filter Type FC F-0414-N

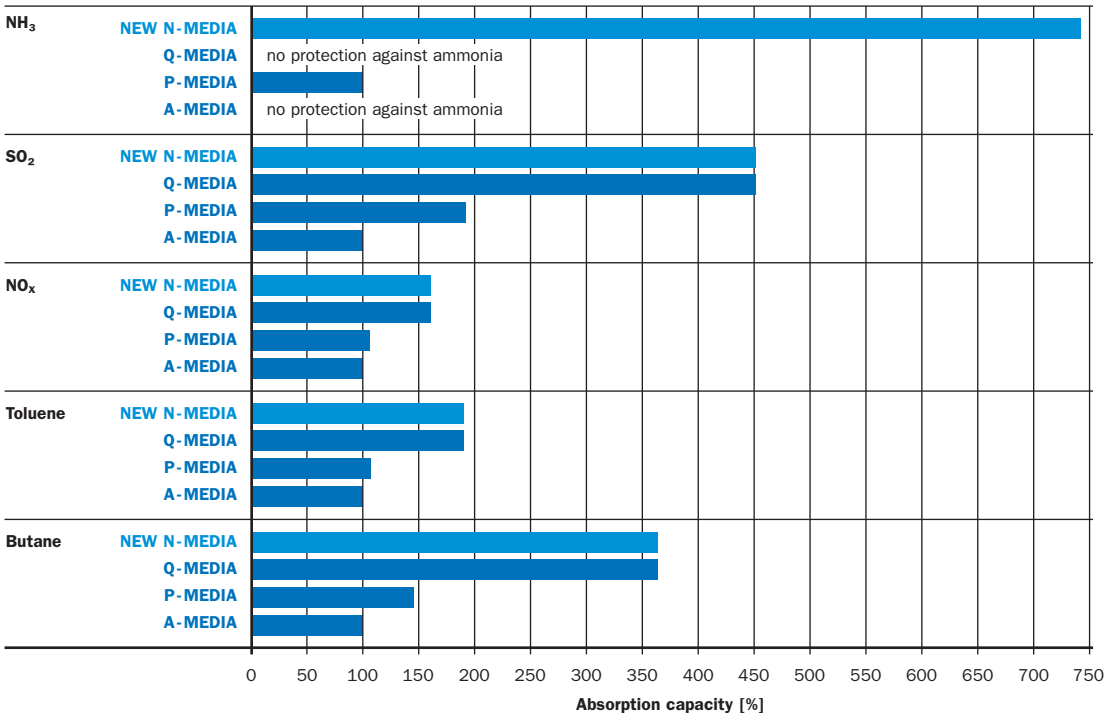
## SIGNIFICANT IMPROVEMENT OF:

- Additional Protection against Ammonia
- Hazardous Gas Absorption Capacity
- Particulate Filtration Efficiency
- Dust Holding Capacity

## BENEFITS:

- Longer Filter Life Time
- Better Fuel Cell Protection
- Lower Costs of Ownership

**THE NEW FFCCT HIGH CLASS FUEL CELL FILTER MEDIA (N-TYPE)** comes with an significant improved absorption capacity compared to the High-Performance-Media (P-Type) and the Base-Media (A-Type) and additional protection against ammonia compared to Q-Media.



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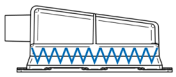
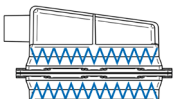
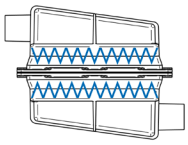
# NEW HIGH CLASS N-MEDIUM

## PRELIMINARY TECHNICAL DATA

| | FC F -0314-N | FC F -0414-N | FC F -0424-N | FC F -0415-N | FC F -0425-N | FC F -0413-N | FC F -0423-N |
|---|---|---|---|---|---|---|---|
| Housing | half open | half open | half open | half open | half open | closed | closed |
| Size (L/W/H) in mm appr. | 149 / 133 / 80 | 203 / 200 / 79 | 203 / 200 / 79 | 203 / 200 / 216 | 203 / 200 / 216 | 217 / 200 / 158 | 217 / 200 / 158 |
| Attachment Port<br>Prepared for John Guest Cartridge Insert tube in mm | – | 15 | – | 15 | – | 15 | – |
| Hose Connector in mm (OD) | 22 | – | 30 | – | 30 | – | 30 |
| Housing Burst Pressure in mbar | – | – | – | – | – | 300 | 300 |
| Screws: Maximum Fastening in Nm | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Max. Operation/Storage Temperature in °C | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Nominal Volume Flow Rate in m³/h | 0–5 | 0–20 | 0 –20 | 0–40 | 0–40 | 0–40 | 0–40 |
| **NUMBER OF FILTER ELEMENTS:** | **1** | **1** | **1** | **2** | **2** | **2** | **2** |
| **PERFORMANCE:** | **N:** | **N:** | **N:** | **N:** | **N:** | **N:** | **N:** |
| **Pressure Drop in Pa** (Begin of Life, following ISO 5011) | | | | | | | |
| 100 l/min | **135** | **110** | **80** | **140** | **110** | **310** | **160** |
| 200 l/min | **410** | **370** | **250** | **435** | **315** | **840** | **500** |
| 300 l/min | **840** | **780** | **515** | **885** | **620** | **1590** | **1025** |
| 400 l/min | | **1340** | **870** | **1490** | **1015** | **2560** | **1735** |
| 600 l/min | | **2910** | **1855** | **3155** | **2100** | **5160** | **3705** |
| **Particulate Efficiency in %** (AC-Fine Dust, following DIN 71460) | | | | | | | |
| 0.2 µm | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** |
| 0.3 µm | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** |
| 0.5 µm | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** |
| 1 µm | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** |
| 3 µm | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** |
| 5 µm | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** |
| 10 µm | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** | **>98** |
| **Adsorption Performance @ 70 m³/h** (Following DIN 71460) **Capacity in g** | | | | | | | |
| $SO_2$ @ 30 ppm | **3.3** | **7.7** | **7.7** | **15.3** | **15.3** | **15.3** | **15.3** |
| $NH_3$ @ 30 ppm | **>1.0** | **>2.3** | **>2.3** | **>4.6** | **>4.6** | **>4.6** | **>4.6** |
| $NO_x$ @ 30 ppm | **2.4** | **5.5** | **5.5** | **10.9** | **10.9** | **10.9** | **10.9** |
| Toluene @ 80 ppm | **6.2** | **14.3** | **14.3** | **28.5** | **28.5** | **28.5** | **28.5** |
| *n*-Butane @ 80 ppm | **0.8** | **1.9** | **1.9** | **3.7** | **3.7** | **3.7** | **3.7** |

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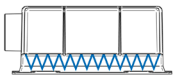
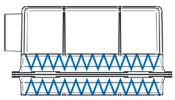
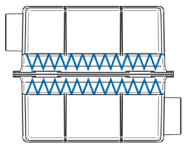
# NEW HIGH CLASS N-MEDIUM

## PRELIMINARY TECHNICAL DATA

| |  |  |  |
|---|---|---|---|
| | **FC F -0514-N** | **FC F -0515-N** | **FC F -0513-N** |
| Housing | half open | half open | closed |
| Size (L/W/H) in mm appr. | 301 / 256 /122 | 301 / 256 / 186 | 314 / 256 / 244 |
| Attachment Port Inner Thread | G2" | G2" | G2" |
| Housing Burst Pressure in mbar | – | – | 120 |
| Screws: Maximum Fastening in Nm | 1.5 | 1.5 | 1.5 |
| Max. Operation/Storage Temperature in °C | 80 | 80 | 80 |
| Nominal Volume Flow Rate in m³/h | 0–50 | 0–100 | 0–100 |
| **NUMBER OF FILTER ELEMENTS:** | **1** | **2** | **2** |
| **PERFORMANCE:** | **N:** | **N:** | **N:** |
| **Pressure Drop in Pa** (Begin of Life, following ISO 5011) | | | |
| 100 m³/h | **330** | **545** | **585** |
| 150 m³/h | **590** | **965** | **1025** |
| 200 m³/h | **915** | **1480** | **1570** |
| 250 m³/h | **1300** | **2085** | **2215** |
| 300 m³/h | **1750** | **2790** | **2965** |
| **Particulate Efficiency in %** (AC-Fine Dust, following DIN 71460) | | | |
| 0.2 µm | **> 98** | **> 98** | **> 98** |
| 0.3 µm | **> 98** | **> 98** | **> 98** |
| 0.5 µm | **> 98** | **> 98** | **> 98** |
| 1 µm | **> 98** | **> 98** | **> 98** |
| 3 µm | **>98** | **>98** | **>98** |
| 5 µm | **> 98** | **> 98** | **> 98** |
| 10 µm | **> 98** | **> 98** | **> 98** |
| **Adsorption Performance @ 70 m³/h** (Following DIN 71460) **Capacity in g** | | | |
| $SO_2$ @ 30 ppm | **16.7** | **33.4** | **33.4** |
| $NH_3$ @ 30 ppm | **> 5.0** | **> 10.0** | **> 10.0** |
| $NO_x$ @ 30 ppm | **11.9** | **23.7** | **23.7** |
| Toluene @ 80 ppm | **31.0** | **62.0** | **62.0** |
| *n*-Butane @ 80 ppm | **4.0** | **8.1** | **8.1** |

# FREUDENBERG VILEDON® FUEL CELL FILTERS
# NEW CARTRIDGE FILTER

## PRELIMINARY TECHNICAL DATA

| | FC F -0824-Q | FC F -0835-Q |
|---|---|---|
| Housing | Cartridge type | Cartridge type |
| Size (L/W/H) in mm appr. | 80 / 80 / – | 191 / 84 / – |
| Attachment Port, Tube in mm | 22 | 32 |
| Housing Burst Pressure in mbar | – | – |
| Screws: Maximum Fastening in Nm | – | – |
| Max. Operation/Storage Temperature in °C | 50 | 50 |
| Nominal Volume Flow Rate in m³/h | 0–5 | 0–10 |
| **NUMBER OF FILTER ELEMENTS:** | **1** | **1** |
| **PERFORMANCE:** | **Q:** | **Q:** |
| **Pressure Drop in Pa** (Begin of Life, following ISO 5011) | | |
| 60 l/min | **20** | **20** |
| 120 l/min | **90** | **80** |
| 180 l/min | **205** | **190** |
| 240 l/min | **368** | **345** |
| 300 l/min | **580** | **545** |
| **Particulate Efficiency in %** (AC-Fine Dust, following DIN 71460) | | |
| 0.2 µm | **>98** | **>98** |
| 0.3 µm | **>98** | **>98** |
| 0.5 µm | **>98** | **>98** |
| 1 µm | **>98** | **>98** |
| 3 µm | **>98** | **>98** |
| 5 µm | **>98** | **>98** |
| 10 µm | **>98** | **>98** |
| **Adsorption Performance @ 70 m³/h** (Following DIN 71460) **Capacity in g** | | |
| $SO_2$ @ 30 ppm | **1.2** | **3.1** |
| $NH_3$ @ 30 ppm | **–** | **–** |
| $NO_x$ @ 30 ppm | **0.8** | **2.2** |
| Toluene @ 80 ppm | **2.2** | **5.8** |
| *n*-Butane @ 80 ppm | **0.3** | **0.8** |

(Rev. 00 – 03/2013)

**Secure attaching in responsibility of customer, screw locking to be used if needed. The Filter should not be used as a supporting element or primary structure.** All values represent averages which are subject to usual production tolerances. The individual filtration performance of our filter does not only depend on the quality of the respective supplied part but also on local environmental conditions such as air quality as well as temperature and relative humidity. Each customer should adequately test any product before regular use in the field. Since we are currently optimizing our products, we reserve the right to modify our product portfolio, production facilities or locations, products and respective processing procedures and respective information without prior information. The values do not represent specifications. Any warranty and liability is subject to our General Terms of Delivery and Payment applicable at the delivery date.

**CONTACT**