

# Partikelfilterklassen

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Partikelfilter werden zur Reduzierung von Rußen, Stäuben oder anderen Partikeln in der Luft oder in Abgasen benutzt. Zur Vereinfachung der Filterauswahl für den Anwender werden diese nach an Hand des Abscheidegrades in insgesamt 17 **Partikelfilterklassen** eingeteilt. Die Einteilung in die Klassen G1 bis F9 für Grob- und Feinstaubfilter erfolgt nach DIN EN 779, die Einteilung in die Klassen H10 bis U17 für HEPA- und Ulpa-Filter nach EN 1822-1:1998.

*Nota bene: Diese Übersicht gibt Anhaltswerte für die verschiedenen Filterklassen. Spezifische Werte für unterschiedliche Filtertypen müssen unter Berücksichtigung der interessierenden Anströmgeschwindigkeit gemessen werden.*

## Grobstaubfilter (Partikel >10µm)

Insekten ; Textilfaser und Haare ; Sand ; Flugasche ; Blütenstaub ; Sporen, Pollen ; Zementstaub

### Filterklasse G1–G4

*unterscheidet die Abscheidegrade, kann aber aufgrund der Grobporigkeit noch nicht in Wirkungsgrade unterteilt werden*

**G1** : mittlerer Abscheidegrad (Am) 50–65%

**G2** : mittlerer Abscheidegrad (Am) 65–80%

*- (G1/2) für einfache Anwendungen (z. B. als Insektenschutz in Kompaktgeräten)*

**G3** : mittlerer Abscheidegrad (Am) 80–90%

**G4** : mittlerer Abscheidegrad (Am) >90%

*- (G3/4) Vor- und Umluftfilter für Zivilschutzanlagen, Abluft Farbspritzkabinen und Küchenabluft, Verschmutzungsschutz für Klimageräte und Kompaktgeräte (z. B. Fensterklimateure, Ventilatoren)*

*- Vorfilter für Filterklassen F 6 bis F 8*

## Feinstaubfilter (Partikel 1 bis 10µm)

Blütenstaub ; Sporen, Pollen ; Zementstaub ; Partikel, welche Flecken und Staubablagerungen verursachen ; Bakterien und Keime auf Wirtspartikel ; (ab F7) Ölrauch und agglomerierter Russ ; Tabakrauch ; Metalloxidrauch

### Filterklasse F5–F9

*unterscheidet die Filter in ihren Wirkungsgraden gemessen an 0,4 µm Partikeln*

**F5** : mittlerer Wirkungsgrad (Em) 40–60%

*- Aussenluftfilter für Räume mit geringen Anforderungen (z. B. Werkhallen, Lagerräume, Garagen)*

**F6** : mittlerer Wirkungsgrad (Em) 60–80%

**F7** : mittlerer Wirkungsgrad (Em) 80–90%

*- Vor- und Umluftfiltrierung in Lüftungszentralen; Endfilter in Klimaanlage für Verkaufsräume, Warenhäuser, Büros und gewisse Produktionsräume*

*- Vorfilter für Filterklassen F9 bis H11*

**F8** : mittlerer Wirkungsgrad (Em) 90–95%

**F9** : mittlerer Wirkungsgrad (Em) >95%

*- Endfilter in Klimaanlage für Büros, Produktionsräume, Schaltzentralen, Krankenhäuser, EDV-Zentralen*

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- Vorfilter für Filterklasse H11 bis H13 und Aktivkohle

## Schwebstofffilter (Partikel < 1µm)

siehe auch eigener Artikel: Schwebstofffilter

Keime, Bakterien, Viren ; Tabakrauch ; Metalloxidrauch ; (ab H12) Öldunst und Russ im Entstehungszustand ; Radioaktive Schwebstoffe ; (ab H14) Aerosole

## Filterklasse H10–U17

*Ermöglicht eine Unterscheidung der Filter nach Restdurchlass-Graden*

**H10** : Abscheidegrad 85% , Durchlassgrad 15%

**H11** : Abscheidegrad 95% , Durchlassgrad 5% , - Endfilter für reine Räume der Klassen 100 000 bzw. 10 000

**H12** : Abscheidegrad 99,5% , Durchlassgrad 0,5%

**H13** : Abscheidegrad 99,95 , Durchlassgrad 0,05%

**H14** : Abscheidegrad 99,995 , Durchlassgrad 0,005%

**U15** : Abscheidegrad 99,9995 , Durchlassgrad 0,0005%

**U16** : Abscheidegrad 99,99995 , Durchlassgrad 0,00005%

**U17** : Abscheidegrad 99,999995 , Durchlassgrad 0,000005%

*(H10/11/12) - Endfilter für Räume hoher und höchster Anforderungen*

*(z. B. für Labors, für Produktionsräume in Nahrungsmittel-, Pharma-, feinmechanischer-, optischer- und elektronischer Industrie sowie für die Medizin)*

*(H12/13) - Endfilter für reine Räume der Klassen 10 000 bzw. 100*

*- Endfilter in Zivilschutzanlagen*

*- Abluftfilter in kerntechnischen Anlagen*

*(H14/U15/16) - Endfilter für reine Räume der Klassen 10 bzw. 1*

Die Reinraumklassen 1 bis 100 000 sind veraltet, es gelten heute die Klassen gemäß DIN EN ISO 14644-1.

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