

Criteria for allergy-friendly Air Purifiers

1. Basic Situation

Allergens do not stop at the front door. Pollen, mold spores and bacteria can find their way into indoor areas despite precautions such as opening windows only in special times of the day or washing one's hair before going to bed.

Air purifiers can remove allergens from the air indoors to a significant degree so that the symptoms experienced by people with hay fever or allergic asthma can be noticeably alleviated. The European Centre for Allergy Research Foundation (ECARF) certifies allergy-friendly air purifiers that are able to achieve a measurable improvement in air quality for the given room size through normal everyday use. The Criteria for allergy friendly air purifiers underlie the assumption that less exposure to allergens is generally beneficial and depict the currently highest technical standards.

The ECARF Seal of Quality certifies air purifiers as allergy friendly if they are able to archive a significant reduction of airborne pollutants.

2. Criteria

- Minimum Efficiency at the most penetrating particle size ($\geq 0.1 \leq 0.3 \mu\text{m}$): ≥ 85 %
 - Collection Efficiency at particle size at $0.5 \mu\text{m}$ (Bacteria, fine dust): ≥ 90 %
 - Collection Efficiency at particle size $\geq 3 \mu\text{m}$ (mold spores, pollen): ≥ 95 %
 - Ozone release <7 ppb
- (a proof is only necessary for devices with ozone emitting components)
- Temperature difference (room temperature compared to exhaust air) < 0.3° K
 - The exhaust air has a neutral odor.
 - All devices bear an instruction plate which gives information about the maximum room size for which 95 % of all particles $\geq 3 \mu\text{m}$ are filtered out within 1 hour. This figure has also to be emphasized in the manual.
E.g. *In a room with up to 50 m³/1,750 cubic feet the air purifier XY can filter out at least 95 % of all pollen and mold spores within 60 minutes.*
 - Devices with a ventilation system performance of less than 200 m³/hour (7,000 cubic feet/hour) have ≤ 32 dB on the lowest setting.

3. Measurements

- **Determination of the Fractional Collection Efficiency for KCl or DEHS particles in the particle size range 0,1 - 3 µm on complete devices.**
 - Determination filtration performance rate at highest blower level for particles in the ranges $\geq 0.1 \leq 0.3 \mu\text{m}$, 0.5 and 3.0 µm
 - Test of the complete device with installed and conditioned* filter elements.
 - Devices with humidifier function will be tested according to the same procedure with empty water reservoir.
- * conditioning procedure: putting the filter elements for 24 hours in a climate chamber with 50° C and 95 % humidity. Equal aging simulation can be agreed.
- **Ozone release:**

Proof is only required if the system contains components that may emit ozone.
Test at lowest air flow mode of the room air cleaner with installed and conditioned* filter elements.
Ozone concentration determined with suitable ozone detector, capable to detect < 3 ppb.
- **Temperature difference**

test of all blower levels
- **Test conditions (temperature and humidity)**

test of all blower settings measured at a temperature of 20° C +/- 1.5° and a humidity of less than 70 %
- **Neutral Odor**

Assessment by three neutral and qualified persons following VDA 270
- **Noise emission:** acc. manufacturer confirmation (no extra measurement)

4. Quality Control and Complaint Management

The manufacturer has established a functional system of quality control that responds effectively to consumer complaints. The following aspects and components are in place:

- The general conditions of sale and the warranty conditions don't limit legal consumer rights.
- Product information given to the consumers is complete and easy to understand.
- Contact information such as manufacturer telephone number or e-mail address is easy to find on the packaging of the product.
- A personal response by experienced personnel is guaranteed in the case of any complaint.