

ATTENTION! IMPORTANT INFORMATION ABOUT FILTRATION



TRIPLE PROTECTION  
FOR PEOPLE,  
ENVIRONMENT AND  
MACHINES

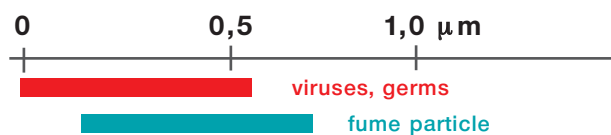
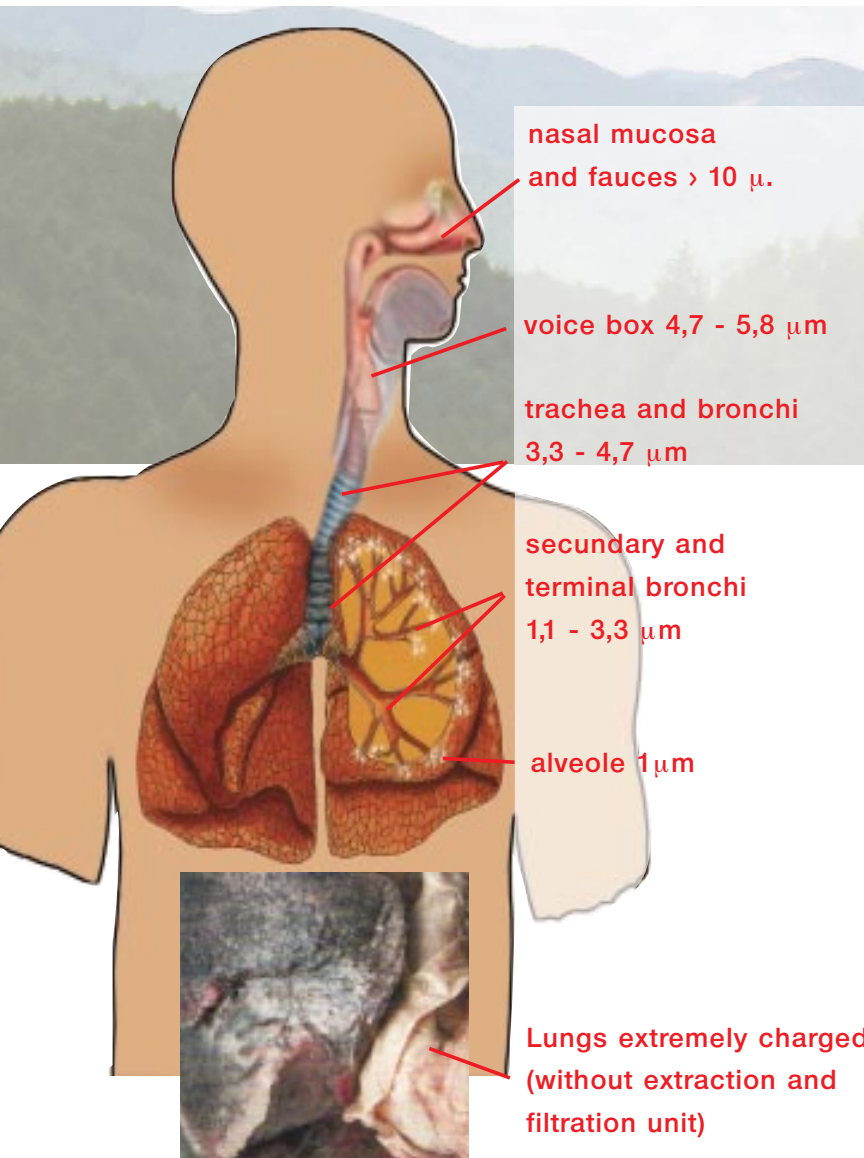


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ORIGINAL OUT OF THE BLACK FOREST

## WHY DO WE HAVE TO USE EXTRACTION AND FILTRATION SYSTEMS?



**Important!** The most dangerous particle size is those that can expand into the lung and will have a particle size < 1  $\mu$ m.

It is known that dust is affecting the working output and will lead to noxious effects:

- ▶ Inflammation of the breath organs and skin
- ▶ Damage by fabric change in the lungs
- ▶ Astma, allergies
- ▶ Destruction of the self cleaning ability of the lungs, disturbances of the lung function, lung cancer

### DANGEROUS AEROSOLS

Aerosols consist of a multitude of dust and smoke particles with different sizes and are generated during the following production processes like grinding, drilling, laser marking and engraving, soldering or medical laser attendance. The particle size is measured in micrometer ( $\mu$ m =  $1/1000$  mm).

**Aerosol** (generic term)  
comprises dust, smoke and exhalation

### Dust - particle size 1-10 $\mu$ m

- ▶ firm particles hover in the atmosphere

### Smoke - particle size > 1 $\mu$ m

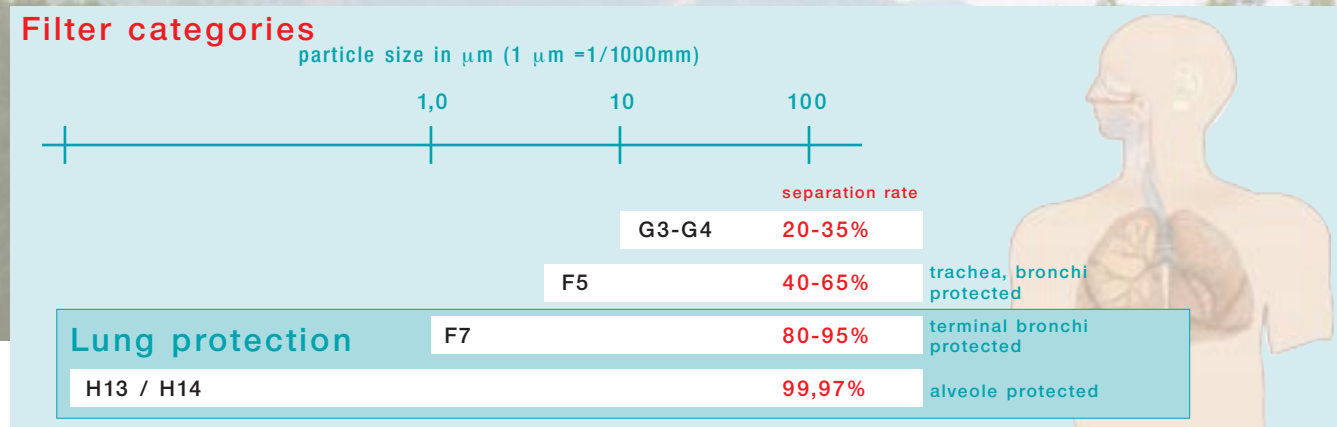
- ▶ particle from uncompleted burning, evaporation or oxidation of firm material

### Fog

- ▶ drops in the atmosphere arouse through the process of condensation, boiling and splashing



## WHAT FILTER CONFIGURATION IS REQUIRED TO ACHIEVE A WHOLESOME WORKING ENVIRONMENT?



To eliminate gaseous pollutants of different production processes it is useful to work with active carbon filters. Active carbon consists of organic substances like carbon, peat etc. Via the formations of finest pores and capillaries the absorbability of the surface can reach till  $1700 \text{ m}^2$  per gramme active carbon. The outcome of this is an excellent separation rate and a high adsorption capacity, which results in a long lifetime. Depending on application the replacement intervals are between 4-12 months.

### WHAT MAINTENANCE HAS TO BE DONE TO KEEP A WHOLESOME WORKING ENVIRONMENT?

Depending on the dust quantity a good designed extraction and filtration system has the following replacement intervals for the different filter types:

pre-filter	2 - 4 weeks
particle filter	4 - 8 month
carbon filter	6 - 12 month

### Adsorbition results of active carbon filters result

soldering fume	3
laser machining of rubber	2
laser machining of plastic	3
laser machining of polyvinyl chloride	2
suction cleaning at clueing workstations	1
laser arosoles in the medical area	3
laser welding of metal	3
laser engraving of metal	3

results: 1=good, 2=very good, 3=excellent



**Important!**  
Without filter replacement none protection of your health.



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