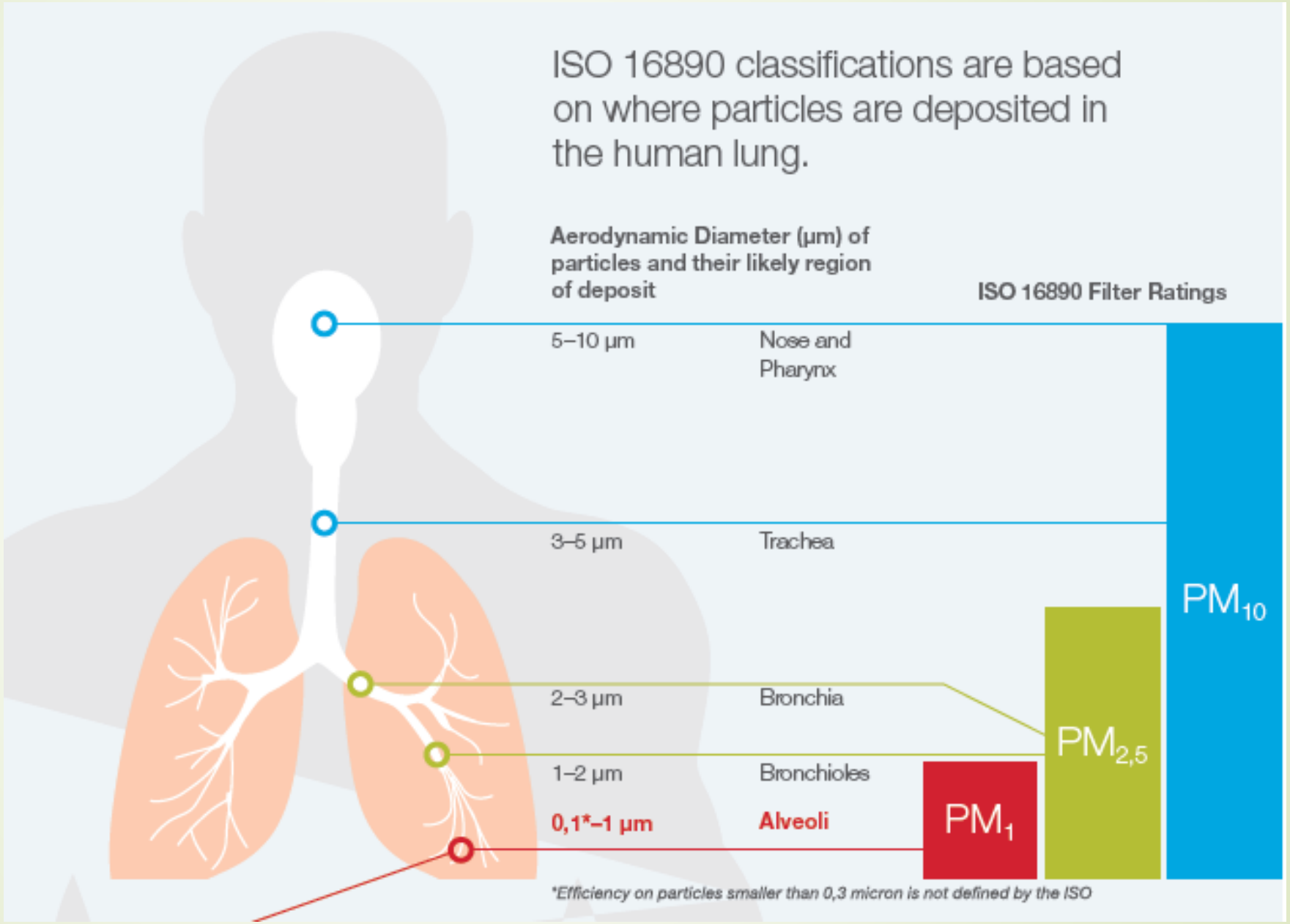
AAF | America Air Filter

Air Purifying System | **CYCLONE**


ISO 16890 classifications are based on where particles are deposited in the human lung.
Aerodynamic Diameter (µm) of particles and their likely region of deposit
ISO 16890 Filter Ratings
5–10 µm
Nose and Pharynx
3–5 µm
Trachea
2–3 µm
Bronchia
1–2 µm
Bronchioles
0,1*–1 µm
Alveoli
PM10
PM2,5
PM1
*Efficiency on particles smaller than 0,3 micron is not defined by the ISO


Controlled Environment
Cyclone draws contaminated air from a controlled environment; cleans the air; and then returns the cleaned air back into the space.

Why Use *CYCLONE* ?

Cyclone Air Purifying System (CAPS) is designed to efficiently remove dust particles and chemical contaminants to create a hygienic and odorless environment, providing a comfortable and homey surrounding.

SPECIAL FEATURES

- Recirculating And Cleaning Of Air
- Remove Bacteria And Dust
- Remove Chemical Contaminants
- Eliminate Virus And Bacteria
- Exterior Custom Design And Extremely Portable
- Safety Features
- Filter Lifespan Indicator
- Speed Adjustable
- Auto Off Energy Saving

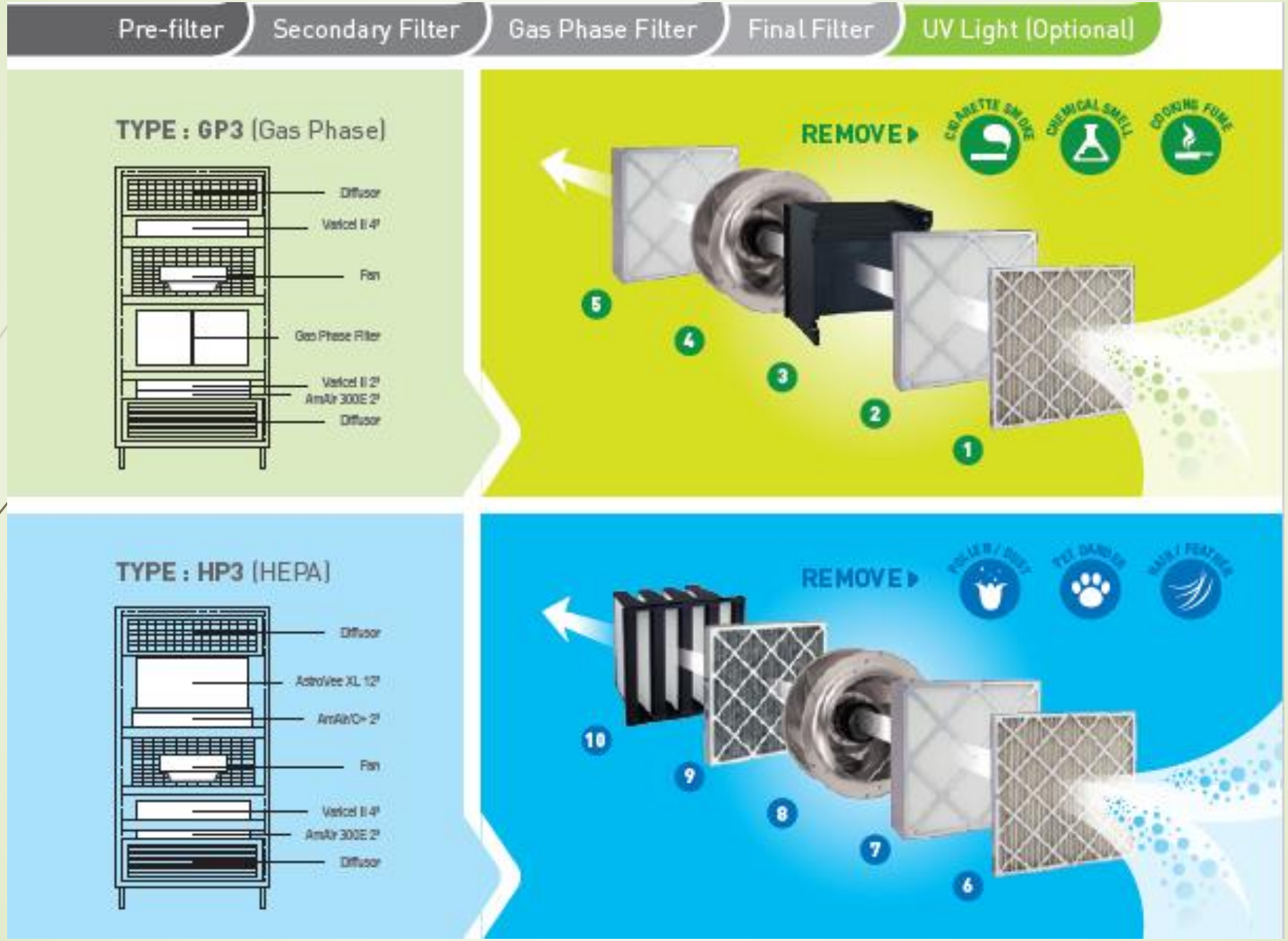
IMPROVE INDOOR AIR QUALITY

- Smog / Dust / Waste Particles / Large Smoke Particles

- Food Odor / Pollen

- Bacteria / Fungus / Molds

- Virus / Germs

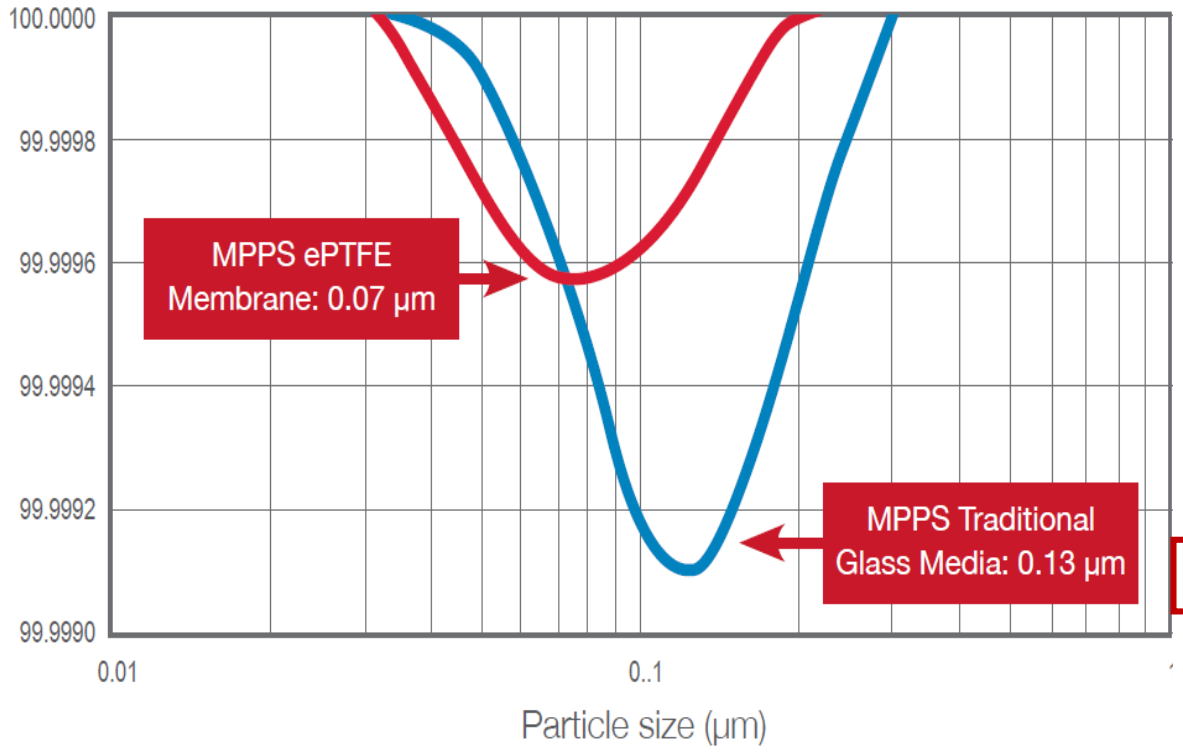

Pre-filter
Secondary Filter
Gas Phase Filter
Final Filter
UV Light (Optional)
TYPE : GP3 (Gas Phase)
Diffusor
Vericel II 4"
Fan
Gas Phase Filter
Vericel II 2"
AmAir 300E 2"
Diffusor
REMOVE
CIGARETTE SMOKE
CHEMICAL SMELL
COOKING FUME
5
4
3
2
1
TYPE : HP3 (HEPA)
Diffusor
AstroVee XL 12"
AmAir/C> 2"
Fan
Vericel II 4"
AmAir 300E 2"
Diffusor
REMOVE
10
9
8
7
6

60nm=0.06um, 140nm=0.14um

Fractional efficiency curve for ePTFE / eFRM

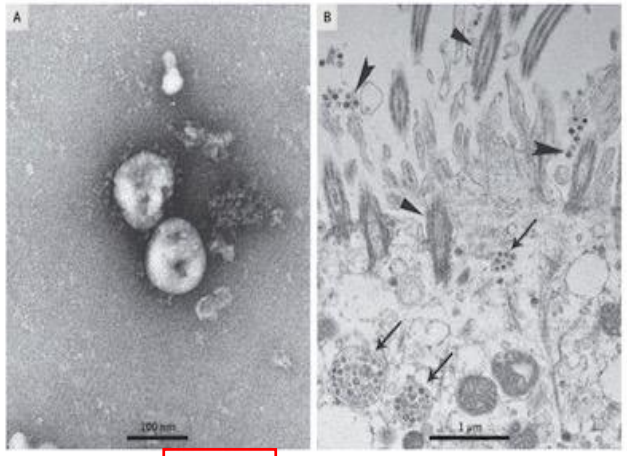
Filter Efficiency

MPPS Filter Designations Microglass and Membrane Media



Filtration efficiency @MPPS determined according to:
EN1822-5-2009 - Annex A, alternative procedure for testing membrane media with MPPS < 0.1µm

Figure 3.



Visualization of 2019-nCoV with Transmission Electron Microscopy.

Electron micrographs of negative-stained 2019-nCoV particles were generally spherical with some pleomorphism (Figure 3). Diameter varied from about 60 to 140 nm. Virus particles had quite distinctive spikes, about 9 to 12 nm, and gave virions the appearance of a solar corona. Extracellular free virus particles and inclusion bodies filled with virus particles in membrane-bound vesicles in cytoplasm were found in the human airway epithelial ultrathin sections. This observed morphology is consistent with the Coronaviridae family.

Air filtration Vs virus

- Air filtration captured Virus as size base
- Virus always enclosed in larger droplets in the air (mixing)
- Move in the form of an aerosol
- During coughing, the droplets are ten time large (over 10um)
- For said droplet, Hepa filter with H14 (eFRM) efficiency is good recommendation

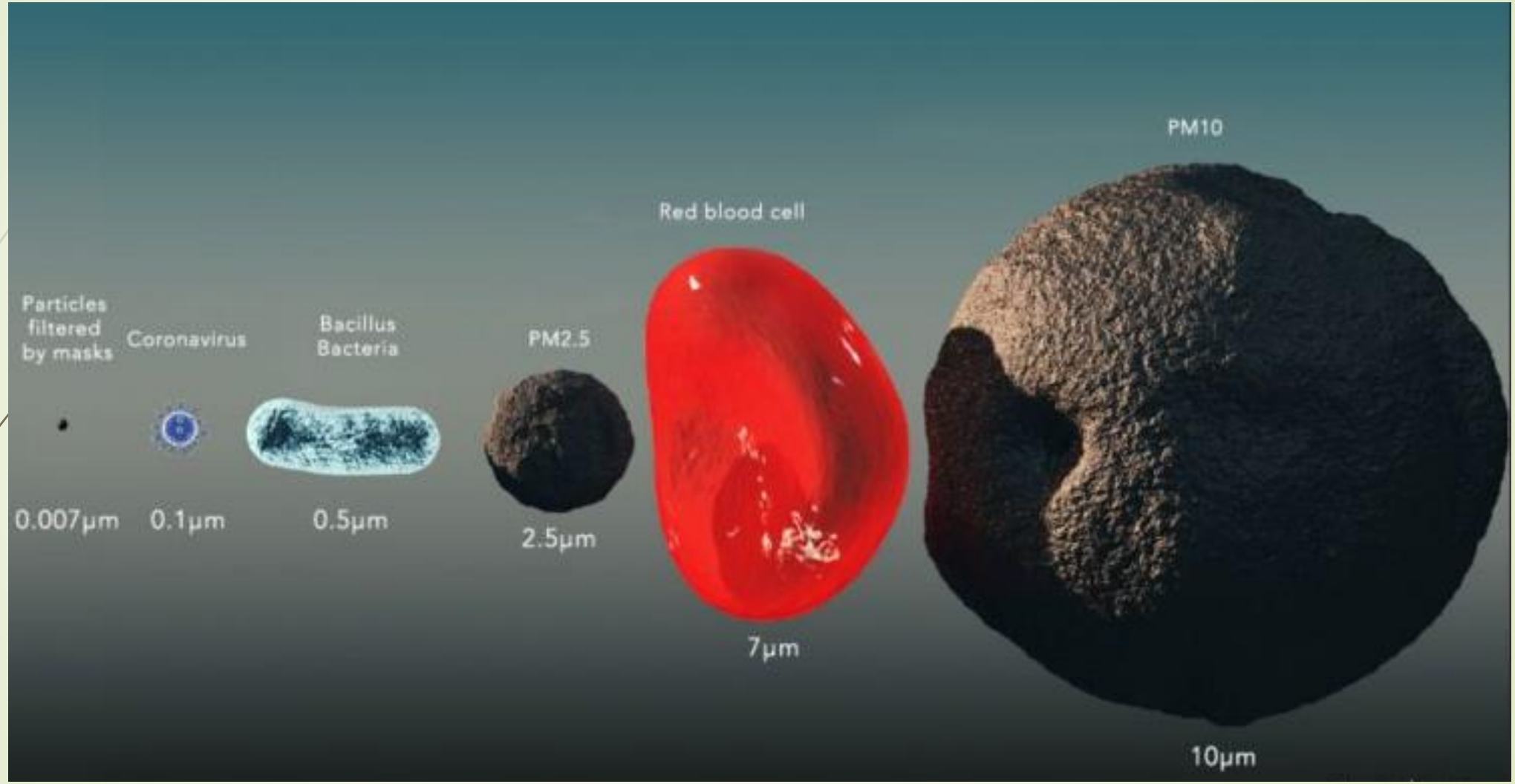
- "Like influenza viruses, coronaviruses are probably also detectable in an infected person's exhaled air. Viruses such as B. Influenza (with a size of 120 nm) and corona (with a maximum of 160 nm) do not fly occasionally in the air, but are always enclosed in larger droplets in the air, so they move in the form of an aerosol. When breathing, everyone emits tiny droplets (1 µm in size). Each breath can contain 1,000-50,000 droplets. When coughing, the droplets are ten times larger (over 10 µm). This means that over 90% of the aerosols also get caught in filters with a mesh size of 2 µm."
- For said droplet sizes HEPA filters provide quite good protection.

COVID-19 belongs to a family of viruses known as coronaviruses. The 2013 SARS epidemic was also caused by a coronavirus, which was 0.1 microns in size. According to Dr. Mariea Snell, Assistant Director of the Online Doctor of Nursing Program at Maryville University, the size of COVID-19 is approximately 0.125 microns.

Corona Virus Size : appx **0.125** microns

Normal HEPA Filter (H13) MPPS apprx. **0.12**

micron while PTFE Apprx. **0.007** micron


Particles filtered by masks
Coronavirus
Bacillus Bacteria
PM2.5
Red blood cell
PM10
0.007μm
0.1μm
0.5μm
2.5μm
7μm
10μm