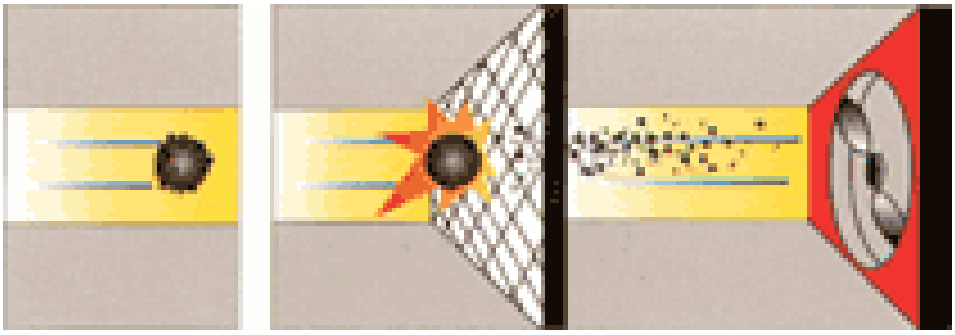
Colswe Consulting

sempore®

Sempore Method - Simple Air Sampling

The method works as well on air as liquid. It is now used both for research purposes and for different types of air quality control measurements. Examples of this are quality assurance of supply air in fan controlled ventilation systems and for the determination of particulate pollutants in indoor air in connection with "sick house investigations".

The filter installations found on most ventilation systems are such that they are able to stop the large particles contained in the air such as, for example, pollen, but passes through the smallest particles.



1. Pollen grains with allergenic particles come into the plant.
2. Poll corne is stuck in the filter ...
3. … but the dangerous particles continue past the filter and further into the ventilation system.

Particles down to 0.1 µm are concentrated on the filter holder either by sucking air with a pump through the membrane or by electrostatic enrichment with the Airpoint air ionizer.

In order to facilitate the practical and safe handling of the filter holders to be sent for analysis, a storage carousel for 10 filters has been designed.

For the air sampling, a pump with a constant airflow of 1,0 l/min is used under 25 min as standard measurement. A typical measurement takes place on several points, usually on four measuring points. By comparing the results with each other and with a sample of the outside air as a reference you can localise the source of the problem.

Electrostatic sampling with the air ionizer Airpoint can be used in some situations when sampling needs to be extended for a period of time. By air ionization the particles contained in the air are negatively charged to the electrically conductive and positively charged filter electrode.

Analysis

The design of the filter electrode saves time during the subsequent analysis work using a scanning electron microscope (SEM) after gold coating of the membrane. The filter electrodes in their carousel are thus the first part of an integrated rapid diagnostic analysis system.

Through careful examination of the samples via the SEM microscope display, detailed information of the obtained particles is found on the sample, their number, size and shape can be clearly displayed. The screen review determines the final diagnosis and a representative image is chosen for illustration. If necessary, identification of the composition of certain particles can be done by means of EDAX, X-ray analysis.

Scope of applications

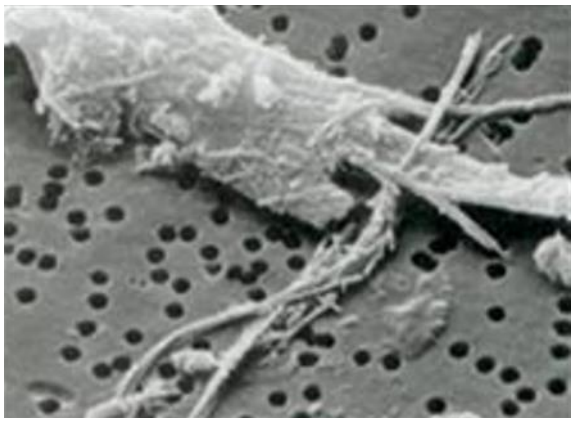
The Sempore method can be used to detect mold, bacteria, fiber and dust in the ventilation system or in the room air, which makes the method especially suited as a quality assurance of supply air. It can be used to search for leaks in the ventilation system, damage or soiling of the filter and as a check after duct cleaning.

Mold growth due to moisture damage in the building material can also be revealed. As a quick and easy environmental diagnostic method, it is one valuable aid in the fight against asthma and allergy increase in society. Many applications are also available in the field of occupational health and safety, specially in the field of occupation, where the production of fibers such as asbestos and dust occur

Sempore sampling and analysis method assures the quality assures indoor air

- Easy air sampling
- Fast and reliable answers without laboratory cultures
- Control of: Outdoor air
  Air supply in ventilation system
  Filter function
  Supply air ducts in rooms
  Room air
  Air spaces in walls and floors

Analys results of different samples

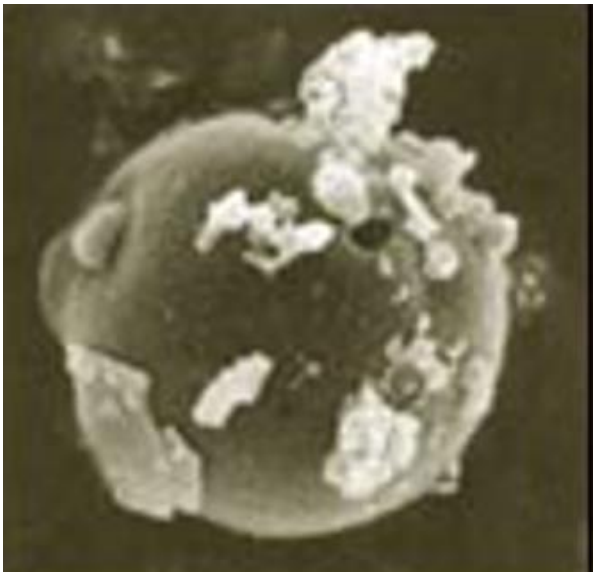


Asbestos fibers in a workplace

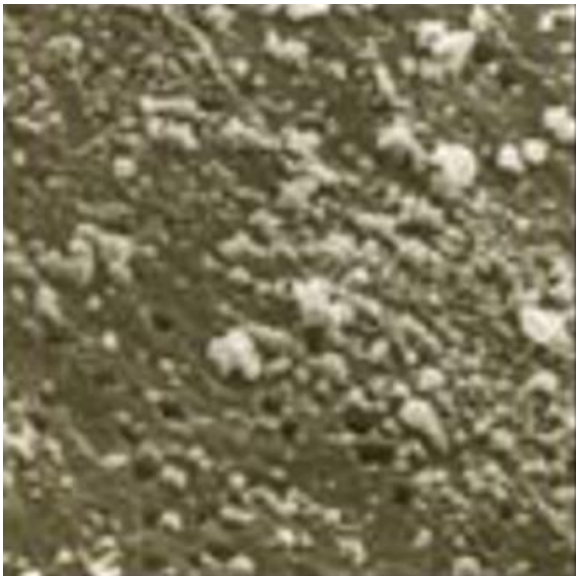
Biological material inside the supply air system

Mite

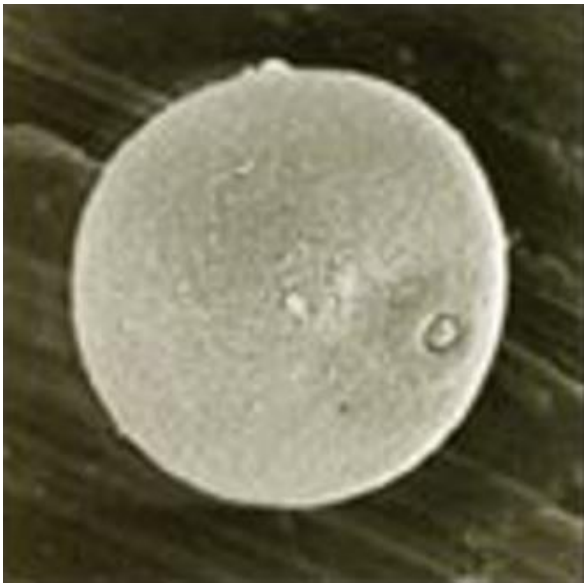
Cat hair with pollen corns



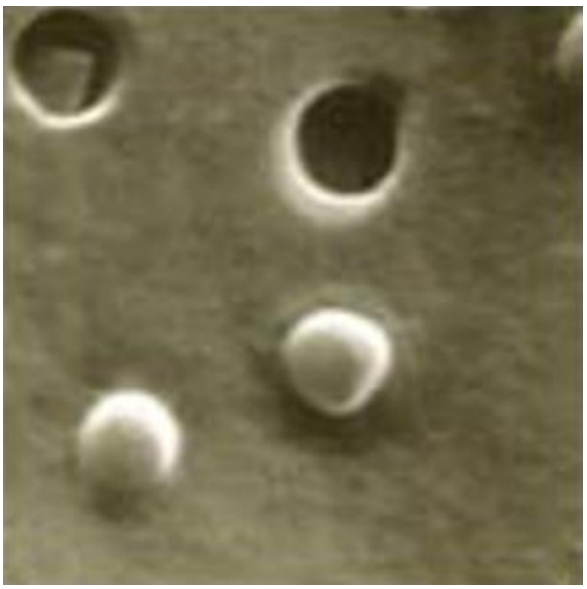
Pollen from a city environment



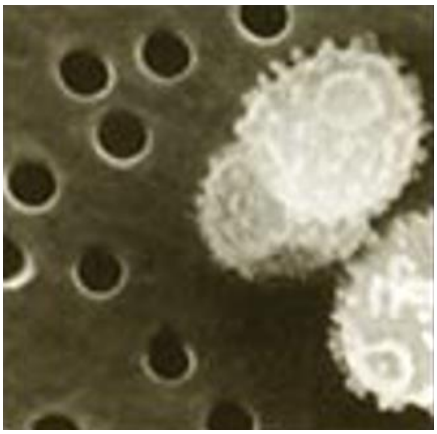
Air from a large city environment



Pollen from the countryside



Bacteria



Moulds Spores

If you have any questions about the method and need a quotation for an Air Sampling Measurement, you are welcome to contact us.

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