

Air measurement using passive samplers

Sampling: tube type

Instructions

Introduction

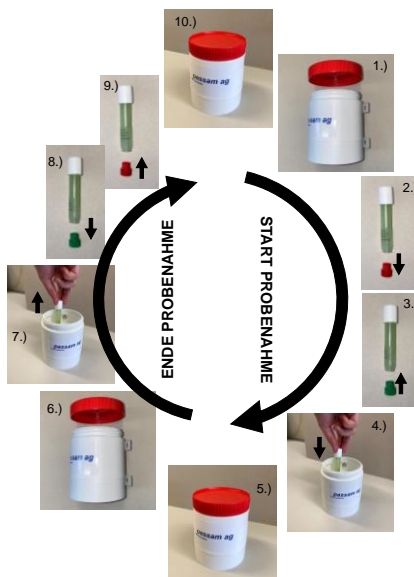
Measurement with passive samplers consists of sampling at the measurement site and analysis of the passive samplers in the laboratory. During sampling, the passive sampler collects pollutants from the air over the entire exposure period. Subsequently, the passive sampler is analysed in the laboratory and the amount of pollutant is determined. These instructions describe the **sampling procedure with passive samplers of the tube type**, i.e. NO₂ (SP01), NO_x (SP12) as well as NO_x-Set (SP12-S).

Set up measuring site

For ambient air measurements, passive samplers are exposed in a **protective shelter** to minimise the effect of weather. This shelter provides space for up to 6 passive samplers of the tube type. We recommend installing the shelters at the selected measurement sites **at a height of 2 to 2.5 m so that the air can flow freely** towards them. Installation options such as street lamps or self-assembled wooden posts are suitable for this. The protective shelter is attached by means of cable ties, string or wire. The measurement location should be as safe as possible from vandalism.



Sampling



During sampling, the passive samplers must remain open for the entire exposure period:

Start sampling:

- 1) open protective shelter (red lid)
- 2) remove red cap from the passive sampler (keep it in a safe place!)
- 3) attach protective filter (green cap) *
- 4) place the passive sampler in the protective shelter
- 5) close protective shelter (red lid)

End sampling:

- 6) open protective shelter (red lid)
- 7) remove passive sampler from protective shelter
- 8) remove the protective filter (green cap) from the passive sampler *
- 9) close the passive sampler with the red cap
- 10) close protective shelter (red lid)

* in exceptional cases, the use of protective filters can be dispensed with. In this case, the tubes remain open during sampling

Protocol – Documentation of sampling

For a measurement by means of a passive sampler, the logging of the sampling is mandatory.

Please use our **Excel template sampling protocol** for the documentation. It is available on our homepage or we will gladly send it to you on request.

In the template, you can enter your information on the measurement campaign in the **customer information** section.

In the next section, the corresponding **passive sampler type is selected** via a drop-down menu:

Sampler type:	NO2 tube (SP01)
Protective filter	NO2 tube (SP01) NOX tube (SP12) NOX tube Set (SP12-S) NO2 badge (SP15) NO2/SO2 badge (SP19) SO2 badge (SP10) O3 badge (SP20)
measuring site	

Indicate whether a **protective filter** (green cap) was used. This information is relevant for the calculation of the pollutant concentration.

In the main part of the protocol, all data concerning the sampling are recorded. To do this, enter a unique designation for the **measuring site** in the first column.

In the second column, the passive sampler is identified and assigned to the measurement location via the **passive sampler label**. This identifier corresponds to your customer code with a consecutive number and can be found on the label of the passive sampler.

Under **exposure**, the start and end dates, as well as the corresponding times, of the sampling are recorded.

measuring site	passive sampler label	exposure				Temp [°C]	P [hPa]	optional information comments
		start date	start time	end date	end time			
main station	ABC-123	02.05.2021	10:35	17.05.2021	09:20			

Comments: Notes, remarks, e.g. special events during exposure or more detailed information on the measurement site, etc. (optional).

Temp and **P** refer to the mean air temperature and mean air pressure during exposure. This information can be taken into account when calculating the pollutant concentration in order to relate the result to the ambient conditions of the measurement period. The correction is made when the data is specified (optional).

Shelf life and storage of the passive samplers

Please note the individual storage conditions as well as the shelf life before and after sampling of the passive samplers. You will find this information on the product data sheet of the respective passive sampler. The shelf life before sampling, **expiry date**, can also be found on the label of the sampler.

Always store passive samplers in a **sealable plastic bag**.

Avoid **extreme heat**, such as can occur in a heated car in summer.

Return

Return the passive samplers and the sampling protocol to us:

Passive samplers to: passam AG, Schellenstrasse 44, 8708 Männedorf, Switzerland.

Sampling protocol: the Excel file by e-mail to passam@passam.ch

