

Air measurement using passive samplers

Sampling: Badge type

Instructions

Introduction

Measurement using passive samplers involves both sampling at the designated site and subsequent analysis of the samplers in a laboratory. During the sampling phase, the passive sampler accumulates pollutants from the air throughout the entire exposure period. The sampler is then analysed in the laboratory to determine the amount of pollutants collected.

This document describes the **sampling procedure specifically for badge-types passive samplers**, including those for **CH₂O** (SP06), **SO₂** (SP10), **NH₃** (SP11), **NO₂** (SP15), **H₂S** (SP18), **O₃** (SP20), **HCl** (SP21), **HF** (SP22) and **CO** (SP23).

Set up measuring sites

For ambient air measurements, passive samplers are placed inside a **protective shelter** to mitigate the effects of weather conditions. Each shelter can accommodate up to 3 badge-type samplers and if required additional tube-type or glass-type samplers.

We advise positioning the shelters at the predetermined measurement sites **at a height of 2 to 2.5 meters**, ensuring unobstructed airflow. Suitable installation options include street lamps or custom-built wooden posts. The protective shelter can be affixed using cable ties, string, or wire. It's essential to choose a measurement location that minimizes the risk of vandalism.



Sampling



Ensure that the passive samplers remain open throughout the entire exposure period.

Starting the sampling process:

- Remove the transparent cap (1) and store it in a safe location
- Place the passive sampler inside the protective shelter using the metal brackets (2). Ensure that the opening of the sampler points downwards.

Completion of the sampling process:

- Take out the passive sampler from protective shelter
- Seal the passive sampler using the stored transparent cap

Protocol – Documentation of sampling

Recording the details of your sampling is mandatory when using a passive sampler for measurements.

Please use our **Excel template** for documenting the sampling process. This template is available for download on our website, or we can send it to you upon request.

General Customer Information:	
1 Organisation / Company:	
Customer ID:	
Contact Person:	
Measurement Campaign:	
Measurement Period:	
Report sent to (e-mail):	
Remark:	

2 Sampler type:	NO2 tube (SP01)
Protective filter used?	

3 measuring site	4 passive sampler label	5 exposure				6		7 optional information comments
		start date	start time	end date	end time	Temp [°C]	P [hPa]	
Monitoring Site 1		24.12.2021	13:00	07.01.2022	12:45	10°		Pole height = 2.8 m
Monitoring site 2		24.12.2021	13:00	07.01.2022	12:30	12.5°		double measurements

- (1) Details about the organization and the measurement campaign.
- (2) Selection of the sampler type via a dropdown menu.
- (3) Designation of uniquely identifiable measurement locations.
- (4) Passive sampler identification (you can find this on the label; the identification corresponds to the customer code and a consecutive number).
- (5) Start and end date as well as the respective times of day of the sampling.
- (6) Temp and P: Through these fields, you can capture the average air temperature (Temp) and pressure (P) during the measurement period. While entering these data is not mandatory, they can be used to adjust pollutant concentration calculations. If you consider such an adjustment, please contact us in advance. Together, we will discuss the impact of this correction.
- (7) Comments: Notes, such as special occurrences during exposure or more detailed information about the measurement location, etc. (optional).

Shelf life and storage of the passive samplers

Please be aware of the specific storage conditions and shelf life both before and after sampling for each passive sampler. This information is provided on the product data sheet for the respective passive sampler. Additionally, the shelf life prior to sampling (or the **expiry date**) is indicated on the sampler's label.

Always store passive samplers in a **sealable plastic bag** and **avoid extreme heat**, such as can occur in a heated car in summer.

Return instructions

Please send back the passive samplers and the sampling protocol as follows:

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

Sampling protocol: Email the Excel file to passam@passam.ch

