

GASEOUS COMPONENTS IN THE AIR **Determination and monitoring of air quality**

TASK

The industrial production of plastics is generally associated with the generation of by-products. Some of these by-products are gaseous and need to be monitored in the workplace. Gases are often collected prior to analysis by first adsorbing them through a solid. The collected substance is then extracted, possibly chemically modified (derivatized) and then its quantity is determined. However, this type of measurement poses a particular challenge, as the composition and/or concentration of the adsorbed gases can change over time.

SOLUTION

At Analytik Service Obernbuurg, direct measurement of gaseous substances is preferred, as these are less prone to error. Measurements can be carried out using various portable gas analyzers (e.g. a portable GC-PID, an FID device or an FTIR gas analyzer).

Industries

Chemical companies
Plastics processors
Automotive suppliers
Chemical fibers
Coatings and paints

Analysis Objectives

Quantification of hazardous substances, risk assessment

Materials

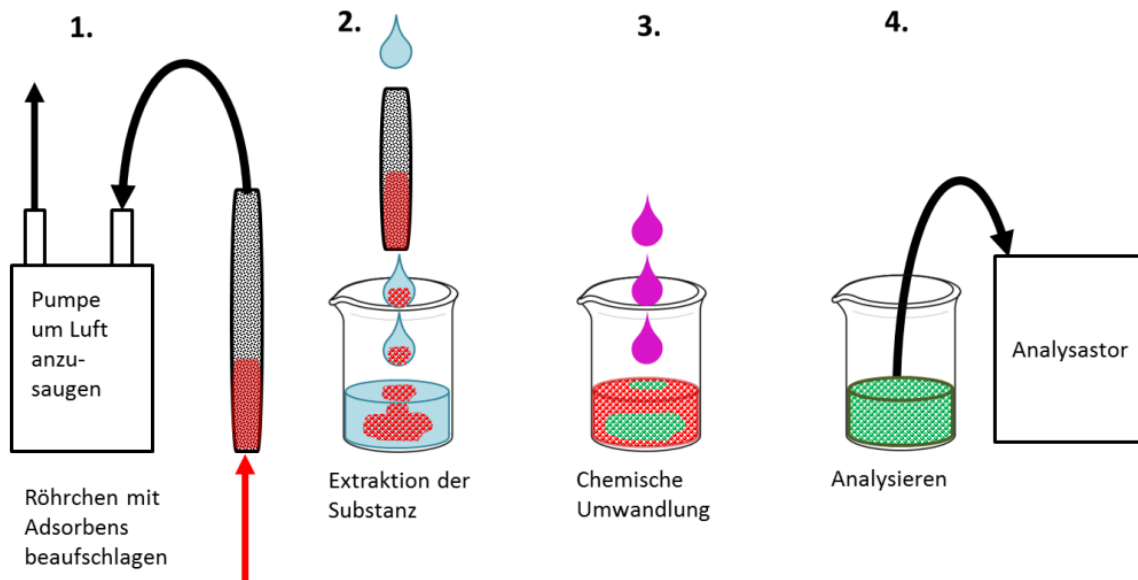
Indoor air

Analysis method

Gas chromatography
Ion chromatography
Spectroscopy
gravimetry

Related questions

Emission measurements
Volume flow measurements



A possible analysis process of a gaseous substance:

1. Collection of the substance by adsorption using a sampling pump on an adsorbent tube
2. Extraction of the substance from the adsorbent
3. Derivatization to enable the analysis
4. Analysis of the substance

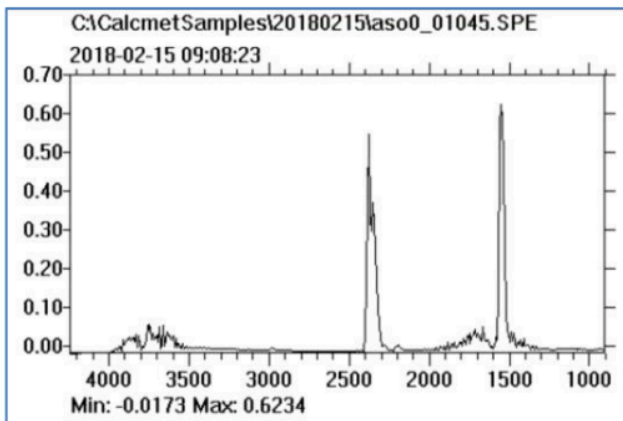
SOLUTION

The FTIR gas analyzer detects gaseous compounds based on their absorption of infrared radiation. The gaseous sample is sucked unchanged directly into the analyzer's measuring cell via an internal pump. This even allows the simultaneous measurement of several components, as each molecular structure has a unique combination of atoms and generates a specific infrared spectrum. The device enables both identification and quantitative analysis of gaseous substances at the same time.

SOLUTION

The measurements can be carried out close to or at the emission source. The direct measurement (no sample preparation required) of the gaseous components keeps process errors to a minimum. In addition, a direct concentration display can be used to clarify customer problems quickly and effectively.

FIG 2: FTIR GAS ANALYZER GASMET DX4015 INCLUDING LAPTOP FOR DATA RECORDING



Kanal	Komponente	Konzentrati...	Einheit
1	Water vapor H2O	0.02	vol-%
2	Carbon dioxide CO2	73.87	ppm
3	Methane CH4	0.006	ppm
4	Nitrous oxide N2O	0.0260	ppm
5	Ammonia NH3	0.031	ppm
6	Carbon monoxide CO	0.000	ppm
7	CS2_low	20.55	ppm
8	COS	0.01	ppm
9	SO2	0.00	ppm
10	Aceton	0.00	ppm
11	CS2_high	0.00	ppm

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