Occupational hygiene monitoring of formaldehyde using 2,4-DNPH

Principle

The procedure utilizes sampling cartridges containing silica gel coated with 2,4-dinitrophenylhydrazine (2,4-DNPH). When air is sucked through the cartridge using a calibrated precision air sampling pump, formaldehyde reacts with the 2,4-DNPH to the corresponding formaldehyde-2,4-dinitrophenylhydrazone. This hydrazone is easily analyzed using high performance liquid chromatography (HPLC).

The 2,4-DNPH procedure is the state-of-the-art procedure for monitoring formaldehyde in air.

Limit of quantification

Short term (15 min / 2,5 L air):	0,05 ppm
Long term (8 hours / 60 L air):	0,002 ppm

Note

This procedure also applies to other aldehydes and ketones.

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