

DIN ISO 16000-3:2023-12 (E)

Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor and test chamber air - Active sampling method (ISO 16000-3:2022)

Contents	Page
National foreword.....	4
National Annex NA (informative) Bibliography.....	5
Foreword.....	8
Introduction.....	9
1 Scope.....	10
2 Normative references.....	10
3 Terms and definitions.....	10
4 Principle.....	11
5 Limitations and interferences.....	11
5.1 General.....	11
5.2 Ozone interference.....	12
6 Safety measures.....	13
7 Apparatus.....	13
7.1 Sampling.....	13
7.2 Sample preparation.....	13
7.3 Sample analysis.....	15
8 Reagents and materials.....	16
9 Preparation of reagents and cartridges.....	16
9.1 Purification of 2,4-dinitrophenylhydrazine.....	16
9.2 Preparation of DNPH formaldehyde derivative.....	17
9.3 Preparation of DNPH formaldehyde standards.....	17
9.4 Preparation of DNPH coated silica gel cartridges.....	18
9.4.1 General.....	18
9.4.2 DNPH coating solution.....	18
9.4.3 Coating of silica gel cartridges.....	18
10 Procedure.....	19
10.1 Sample collection.....	19
10.2 Process blanks.....	21
10.3 Sample analysis.....	21
10.3.1 Sample preparation.....	21
10.3.2 Sample desorption.....	21
10.3.3 HPLC calibration.....	22
10.3.4 HPLC analysis for formaldehyde.....	24
10.3.5 HPLC analysis of other aldehydes and ketones.....	26
11 Calculations.....	28
12 Performance criteria and quality assurance.....	29
12.1 General.....	29
12.2 Standard operating procedures (SOPs).....	29
12.3 HPLC system performance.....	30
12.4 Sample loss.....	30
12.5 Measurement plan.....	30

13	Precision and uncertainty	30
14	Test report	31
Annex A (informative) Melting points of DNPH carbonyl derivatives		32
Annex B (informative) Precision and uncertainty		33
Bibliography		35