

ISO 16702:2007-12 (E)

Workplace air quality - Determination of total organic isocyanate groups in air using 1-(2-methoxyphenyl)pi perazine and liquid chromatography

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	2
3	Terms and definitions	2
4	Principle	3
5	Reagents and materials	3
6	Apparatus	6
7	Sampling	7
7.1	Calibration of pump	7
7.2	General	7
7.3	Preparation of sampling equipment (general)	8
7.4	Preparation of sampling equipment (filters)	8
7.5	Preparation of sampling equipment (impingers)	8
7.6	Collection of filter samples (vapour phase samples)	8
7.7	Collection of impinger backed by filter samples (isocyanate aerosols)	9
7.8	Measurements to be made at the end of the sampling period	9
7.9	Sample logging and field desorption of samples	9
7.10	Transportation	9
7.11	Field Blanks	10
8	Procedure	10
8.1	Safety precautions	10
8.2	Cleaning of glassware	10
8.3	Prereaction of impinger samples before HPLC analysis	10
8.4	Prereaction of filter samples before HPLC analysis	10
8.5	HPLC conditions	10
8.6	Determination of airborne isocyanate for monomeric isocyanates (UV detection)	11
8.7	Identification of polymeric isocyanates: EC/UV ratio approach	11
8.8	Confirmation of identification for polymeric isocyanates (prepolymers)	12
8.9	Quantification of airborne isocyanate for polymeric isocyanates (EC detection)	13
8.10	Sampling efficiency	13
9	Calculations	14
10	Interferences	14
11	Uncertainty of measurement	14
11.1	Introduction	14
11.2	Assessment of performance characteristics of the method -- Sampling considerations (detailed ISO/IEC Guide 98:1995 approach)	16
11.3	Assessment of performance characteristics of the method -- Other considerations -- (detailed ISO/IEC Guide 98:1995 approach)	17

11.4	Mass of compound in field sample blank	21
11.5	Between-laboratory uncertainty contributions	22
11.6	Combined uncertainty	22
11.7	Expanded uncertainty	22
12	Stability	22
13	Test report	22
14	Quality control	23
	Annex A (informative) Determination of sampling efficiency	24
	Annex B (informative) Data used for uncertainty estimates	25
	Annex C (informative) Combined uncertainties for isocyanate formulations	26
	Annex D (informative) Sample chromatograms	28
	Bibliography	34