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Qualitative analysis of isocyanates in material samples

Order No: 9684908

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Comment and clarification of test result ID 9684908

Upon heating the sample to 500°C, we see a departure of the following monoisocyanates: methyl isocyanate, ethyl isocyanate, propyl isocyanate and isocyanate acid. These, however, are to be regarded as combustion products formed by thermal destruction of the hardened bicomponent material. It is a normal finding in combustion of a material of this kind.

We can not measure any amounts indicating that any of the diisocyanates included in the assay range, 1,6-Hexamethylene diisocyanate, 2,4-Toluenediisocyanate, 2,6-Toluenediisocyanate, Isophorone diisocyanate or 4,4'-methylenediphenyl diisocyanate would have been used as a raw material for the product in question. The product in question is considered as isocyanate free with regard to the above diisocyanates.

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Materials – Sample list

Sample No	Type of material and area of use	Work-up procedure
1	Two components cured sample: SB100H + SB100R	50 milligrams of the sample are heated to 500 °C for a period of 10 minutes. The fumes are sampled with the impinger-filter method, using Dibutylamine as a derivatizing agent.

Sampling method:

Type of sample: material, to be analyzed for the emission of isocyanates during heating of the sample.
For details concerning the sampling method: See references 1 - 7.

Analysis results

Sample No	MIC	EIC	PIC	PHI	ICA	Unit
1	X	X	X	-	X	X alt. -

Analysis method:

Analyzed by using: Liquid Chromatography - Mass Spectrometry - Mass Spectrometry (LC - MS - MS - ES+).

Reporting limits:

MIC, EIC, PIC, PHI: 0.010 µg. ICA: 0.050 µg. X = Detected. - = Not detected.

Abbreviations:

MIC: Methyl isocyanate, EIC: Ethyl isocyanate, PIC: Propyl isocyanate, PHI: Phenyl isocyanate,
ICA: Isocyanic acid.

For details concerning the analysis method: See references 1 - 7.

Sample No	1.6-HDI	2.4-TDI	2.6-TDI	IPDI	4.4'-MDI	Unit
1	-	-	-	-	-	X alt. -

Analysis method:

Analyzed by using: Liquid Chromatography - Mass Spectrometry - Mass Spectrometry (LC - MS - MS - ES+).

Reporting limits:

1.6-HDI, 2.4-TDI, 2.6-TDI, IPDI, 4.4'-MDI: 0.005 µg. X = Detected. - = Not detected.

Abbreviations:

1.6-HDI: 1.6-Hexamethylene diisocyanate, 2.4-TDI: 2.4-Toluene diisocyanate, 2.6-TDI: 2.6-Toluene diisocyanate, IPDI: Isophorone diisocyanate, 4.4'-MDI: 4.4'-Methylenediphenyl diisocyanate.

For details concerning the analysis method: See references 1 - 7.

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