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BSI Standards Publication

# Rubber — Trapping and identification of volatile components of rubber fumes with active sampling on a poly(2,6-diphenylphenylene oxide) type sorbent, using thermodesorption and gas chromatographic method with mass spectrometric detection

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**National foreword**

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TECHNICAL SPECIFICATION

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# Rubber — Trapping and identification of volatile components of rubber fumes with active sampling on a poly(2,6-diphenylphenylene oxide) type sorbent, using thermodesorption and gas chromatographic method with mass spectrometric detection

*Caoutchouc — Piégeage et identification des composés volatils des fumées de procédés du caoutchouc, par échantillonnage actif sur un sorbant de type poly(oxyde de 2,6-diphénylphénylène), en utilisant une méthode par thermodésorption et chromatographie en phase gazeuse avec détection par spectrométrie de masse*

Reference number
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# Foreword

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The committee responsible for this document is ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

TECHNICAL SPECIFICATION ISO/TS 17796:2013(E)

# Rubber — Trapping and identification of volatile components of rubber fumes with active sampling on a poly(2,6-diphenylphenylene oxide) type sorbent, using thermodesorption and gas chromatographic method with mass spectrometric detection

## 1 Scope

This Technical Specification specifies a qualitative method of thermodesorption – gas chromatography – mass spectrometry (TD-GC-MS) for the identification of volatile components in rubber fumes, after trapping on a solid sorbent based on 2,6-diphenylphenylene-oxide polymer resin. It is applicable to a screening of emissions from the processing of rubber compounds in the ambient workplace and storage environment.

**CAUTION — Persons using this Technical Specification should be familiar with the procedures for gas chromatography – mass spectrometry measurement and analysis. All the operative details for the application and set-up of the GC-MS are assumed to be in agreement with the operative instructions provided by the manufacturer. Therefore, the detailed procedure for the operation is not included in this Technical Specification. This Technical Specification specifies a qualitative method which is not aimed at quantitative analyses.**

## 2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**2.1**
**semi-volatile organic compound**
**SVOC**
organic compound whose boiling point is in the range from (240 to 260) °C to (380 to 400) °C

Note 1 to entry: This classification has been defined by the World Health Organization.[4]

Note 2 to entry: Boiling points of some compounds are difficult or impossible to determine because they decompose before they boil at atmospheric pressure. Vapour pressure is another criterion for the classification of compound volatility that may be used for the classification of organic chemicals. SVOCs have vapour pressures of between $10^{-2}$ kPa and $10^{-8}$ kPa.

**2.2**
**volatile organic compound**
**VOC**
organic compound whose boiling point is in the range from (50 to 100) °C to (240 to 260) °C

Note 1 to entry: This classification has been defined by the World Health Organization.[4]

Note 2 to entry: Boiling points of some compounds are difficult or impossible to determine because they decompose before they boil at atmospheric pressure. Vapour pressure is another criterion for the classification of compound volatility that may be used for the classification of organic chemicals. VOCs generally have saturation vapour pressures at 25 °C greater than $10^2$ kPa.

**2.3**
**very volatile organic compound**
**VVOC**
organic compound whose boiling point is in the range from <0 °C to (50 to 100) °C

Note 1 to entry: This classification has been defined by the World Health Organization.[4]