



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

National foreword

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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





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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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

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]