PD CEN/TR 17511:2020

BSI Standards Publication

# Materials obtained from End-of-Life Tyres — Odour of ELT granulates — Origin and remediation possibilities



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# National foreword

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The UK participation in its preparation was entrusted to Technical Committee PRI/73, Industrial rubber products.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2020

ISBN 978 0 539 13013 3

ICS 13.160

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 July 2020.

**Amendments/corrigenda issued since publication**

| Date | Text affected |
|---|---|

TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

# CEN/TR 17511

July 2020

ICS 13.160

English Version

# Materials obtained from End-of-Life Tyres - Odour of ELT granulates - Origin and remediation possibilities

Matériaux produits à partir de pneus usagés non réutilisables (PUNR) - Odeur des granulats - Origine et possibilités de remédiation

Materialien aus Altreifen - Geruch von ELT-Granulaten - Ursprungs- und Sanierungsmöglichkeiten

This Technical Report was approved by CEN on 22 June 2020. It has been drawn up by the Technical Committee CEN/TC 366.

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## European foreword

This document (CEN/TR 17511:2020) has been prepared by Technical Committee CEN/TC 366 “Materials obtained from End-of-Life Tyres (ELT)”, the secretariat of which is held by UNI.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

## Introduction

The odour of ELTs granulates can be an obstacle to their use. This is particularly critical at high temperatures, e.g. in the case of a plastic injection.

In order to solve this problem, the origin of the odour is identified to the extent that this is possible. Then it is quantified under normal conditions of use or at higher temperatures.

The identification of the exact origin of the odour would allow the possibility of reducing or eliminating it.

# 1 Scope

The purpose of this document is to provide a review of the studies that were performed on odour of ELT granulates.

# 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14243-1, *Materials obtained from end of life tyres — Part 1: General definitions related to the methods for determining their dimension(s) and impurities*

# 3 Terms, definitions and symbols

## 3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14243-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

## 3.2 Symbols and abbreviated terms

For the purposes of this part, the following symbols apply.

VOC Volatile Organic Compound

NR Natural Rubber

# 4 Determination of the intensity

## 4.1 Methods

In a first study [3], granulates from six different suppliers were used. The techniques that were assessed for the determination of the intensity of the odour were the following:

— **Renault D49-3001**: this is one of the standardized tests for odour and smell that are commonly used by the automotive industry. In this method, the samples in solid form are placed in a sealed container between 70 °C and 100 °C during 2 h. A jury of at least five trained panellists then gives an intensity on a scale from 1 to 5. The nature of the smell is then placed in a family. The scale is defined as:

  — 0: no perceptible odour;

  — 1: weak odour, demanding extra attention and hard to describe;

  — 2: the subject perceives by simple smelling, without any other information;

  — 3: odour perceived even when the attention of the subject is elsewhere;

  — 4: powerful odour attracting the attention of the subject and hindering his other activities;

  — 5: unavoidable odour, focusing the attention of the subject.