

DIN EN ISO 16181-2:2021-10 (E)

Footwear - Critical substances potentially present in footwear and footwear components - Part 2: Determination of phthalate without solvent extraction (ISO 16181-2:2021)

| Contents | Page |
|--------------------------------------------------------------------------------------------------------------------------|-------------|
| European foreword | 3 |
| Foreword | 4 |
| 1 Scope | 5 |
| 2 Normative references | 5 |
| 3 Terms and definitions | 5 |
| 4 Principle | 5 |
| 5 Apparatus | 6 |
| 6 Reagents and materials | 6 |
| 7 Sampling | 7 |
| 8 Test procedure | 7 |
| 8.1 Test sample preparation | 7 |
| 8.2 Calibration | 7 |
| 8.3 Chromatographic analysis | 8 |
| 8.3.1 The chromatography parameters for gas chromatograph - mass spectrometer equipped with a pyrolyzer | 8 |
| 8.3.2 Qualitative and quantitative analysis by gas chromatograph - mass spectrometer equipped with a pyrolyzer | 8 |
| 9 Calculation of phthalate compounds in the sample | 8 |
| 9.1 Calculation of the phthalate compounds in the sample | 8 |
| 9.2 Performance of the test method | 9 |
| 10 Detection limit | 9 |
| 11 Test report | 9 |
| Annex A (informative) List of phthalates specified in CEN/TR16417 | 10 |
| Annex B (informative) Sampling guidelines | 13 |
| Annex C (informative) Chromatography parameters for gas chromatography mass spectrometry equipped with a pyrolyzer | 16 |
| Annex D (informative) Verification of the evolved gas analysis (EGA) thermal desorption zone | 18 |
| Annex E (informative) Examples of chromatogram for phthalate by Py/TD-GC-MS | 20 |
| Annex F (informative) Comparative test results of ISO 16181-1 and this document (i.e. ISO 16181-2) | 22 |
| Bibliography | 26 |