ISO 11890-2:2020 (E)

Paints and varnishes — Determination of volatile organic compounds(VOC) and/or semi volatile organic compounds (SVOC) content — Part 2: Gas-chromatographic method

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Principle

5 Required information

6 Apparatus

7 Reagents

8 Procedure

- 8.1 Sampling
- 8.2 Analysis
- 8.2.1 Sample preparation
- 8.2.2 Data acquisition for sample measurement
- 8.3 Calibration
- 8.3.1 General
- 8.3.2 Preparation of calibration solutions
- 8.3.3 Analysis of the multi-point calibration
- 8.4 Quality assurance
- 8.5 Gas chromatographic conditions
- 8.6 Density
- 8.7 Water content

9 Data analysis

- 9.1 Integration and identification of compounds
- 9.2 Classification of compounds

10 Quantitative determination of compound content

- 10.1 General
- 10.2 Quantitative determination of compound content
- 10.2.1 Quantification with respect to CSRF
- 10.2.2 Quantification with respect to surrogate standard

11 Calculation of VOC and SVOC content

- 11.1 General
- 11.2 Method 1 — VOC content and/or SVOC content, as a percentage by mass, of the product “ready for use”
- 11.3 Method 2 — VOC content and/or SVOC content, in grams per litre, of the product “ready for use”
- 11.4 Method 3 — VOC content and/or SVOC content, in grams per litre, of the product “ready for use” less water
- 11.5 Method 4 — VOC content and/or SVOC content, in grams per litre, of the product “ready for use” less water and less exempt compounds

12 Data evaluation and calculation of final results

13 Precision

13.1 General
13.2 Repeatability limit, r
13.3 Reproducibility limit, R

14 Test report

Annex A (normative) Non-exhaustive list of VOC, SVOC and NVOC compounds

Annex B (informative) Information on thermal unstable products

B.1 Occurrence of thermal degradation of matrices by the analytical methods from Clause 8

B.2 Example 1 — Polyurethane dispersion
B.3 Example 2 — Poly-methacrylate
B.4 Example 3 — Siloxanes
B.5 Example 4 — 1-Dodecanol

Annex C (informative) Examples for GC method conditions

C.1 Example 1 of gas chromatographic conditions
C.2 Example 2 of gas chromatographic conditions

Annex D (informative) Results of the round robin test for the determination of precision data

Page count: 39