DIN EN ISO 11890-2:2024-10 (E)

Paints and varnishes - Determination of volatile organic compounds (VOC) and/or semi volatile organic compounds (SVOC) content - Part 2: Gas-chromatographic method (ISO 11890-2:2020 + Amd 1:2024) (includes Amendment A1:2024)

Contents

Page

European foreword ... **4**

[A1] European foreword to Amendment [A1] ... **5**

Foreword ... **6**

[A1] Foreword to Amendment [A1] ... **7**

Introduction ... **8**

1 Scope ... **9**

2 Normative references ... **9**

3 Terms and definitions ... **10**

4 Principle ... **12**

5 Required information ... **12**

6 Apparatus ... **12**

7 Reagents ... **15**

8 Procedure ... **16**
8.1 Sampling ... 16
8.2 Analysis ... 16
8.2.1 Sample preparation ... 16
8.2.2 Data acquisition for sample measurement ... 16
8.3 Calibration ... 17
8.3.1 General ... 17
8.3.2 Preparation of calibration solutions ... 17
8.3.3 Analysis of the multi-point calibration ... 17
8.4 Quality assurance ... 18
8.5 Gas chromatographic conditions ... 18
8.6 Density ... 18
8.7 Water content ... 19

9 Data analysis ... **19**
9.1 Integration and identification of compounds ... 19
9.2 Classification of compounds ... 21

10 Quantitative determination of compound content ... **23**
10.1 General ... 23
10.2 Quantitative determination of compound content ... 25
10.2.1 Quantification with respect to CSRF ... 25
10.2.2 Quantification with respect to surrogate standard ... 25

11 Calculation of VOC and SVOC content ... **25**
11.1 General ... 25
11.2 Method 1 — VOC content and/or SVOC content, as a percentage by mass, of the product “ready for use” ... 26
11.3 Method 2 — VOC content and/or SVOC content, in grams per litre, of the product “ready for use” ... 26
11.4 Method 3 — VOC content and/or SVOC content, in grams per litre, of the product “ready for use” less water ... 27
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 ... 27

12 Data evaluation and calculation of final results **28**
13 Precision **29**
13.1 General 29
13.2 Repeatability limit, *r* 29
13.3 Reproducibility limit, *R* 29
14 Test report **29**
Annex A (normative) **Non-exhaustive list of VOC, SVOC and NVOC compounds** **30**
Annex B (informative) **Information on thermal unstable products** **36**
Annex C (informative) **Examples for GC method conditions** **43**
Annex D (informative) **Results of the round robin test for the determination of precision data** **45**
Bibliography **47**