DIN EN ISO 19628:2025-03 (E)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Thermophysical properties of ceramic composites - Determination of specific heat capacity (ISO 19628:2024)

Contents

Page

European foreword ... **3**

Foreword ... **4**

1 Scope ... **5**

2 Normative references ... **5**

3 Terms and definitions ... **5**

4 Method A – drop calorimetry ... **6**
4.1 Principle ... 6
4.2 Apparatus ... 6
4.3 Standard reference materials ... 7
4.4 Containers ... 7
4.5 Test specimens ... 7
4.6 Calibration of the calorimeter ... 7
4.6.1 General ... 7
4.6.2 Electrical calibration ... 7
4.6.3 Calibration using standard reference material ... 8
4.7 Test procedures ... 8
4.7.1 General ... 8
4.7.2 Test without a container ... 8
4.7.3 Test with a container ... 9
4.7.4 Description of test ... 9
4.8 Calculations ... 10
4.8.1 General ... 10
4.8.2 Determination of the calorimetric calibration factor ... 10
4.8.3 Determination of mean specific heat capacity $\overline{C_p}$ ... 10
4.8.4 Determination of the specific heat capacity C_p ... 11

5 Method B – differential scanning calorimetry ... **11**
5.1 Principle ... 11
5.1.1 General ... 11
5.1.2 Stepwise heating method ... 12
5.1.3 Continuous heating method ... 12
5.2 Apparatus ... 13
5.3 Standard reference materials, SRM ... 13
5.4 Test specimens ... 13
5.5 Temperature calibration ... 13
5.6 Test procedure for the determination of C_p ... 14
5.6.1 General ... 14
5.6.2 Method 1: Measurements requiring the knowledge of the *K* factor ... 14
5.6.3 Method 2: measurements requiring the use of a reference standard material (SRM) ... 16
5.7 Calculation of results ... 19
5.7.1 Method requiring the knowledge of the *K* factor ... 19
5.7.2 Method using an SRM ... 21

6 Test report ... **22**

Annex A (Informative) **Drop calorimetry – determination of the calibration factor using standard reference material** ... **23**

Annex B (informative) **Standard reference material** ... **25**

Annex C (informative) **Materials for calorimeter calibrations** ... **30**

Bibliography ... **31**