

# ISO 19628:2017-04 (E)

## Fine ceramics (advanced ceramics, advanced technical ceramics) - Thermophysical properties of ceramic composites - Determination of specific heat capacity

---

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>4</b>	<b>Method A - drop calorimetry .....</b>	<b>2</b>
4.1	Principle .....	2
4.2	Apparatus .....	2
4.3	Standard reference materials .....	2
4.4	Test specimens .....	2
4.5	Calibration of calorimeter .....	3
4.5.1	General .....	3
4.5.2	Electrical calibration .....	3
4.5.3	Calibration using standard reference material .....	3
4.6	Test procedures .....	3
4.6.1	Test without a crucible .....	3
4.6.2	Test with a crucible .....	4
4.6.3	Description of test .....	4
4.7	Calculations .....	5
4.7.1	General .....	5
4.7.2	Determination of the calorimetric calibration factor .....	5
4.7.3	Determination of mean specific heat capacity $C_p$ .....	5
<b>5</b>	<b>Method B - differential scanning calorimetry .....</b>	<b>6</b>
5.1	Principle .....	6
5.1.1	General .....	6
5.1.2	Stepwise heating method .....	6
5.1.3	Continuous heating method .....	7
5.2	Apparatus .....	8
5.3	Standard reference materials, SRM .....	8
5.4	Test specimens .....	8
5.5	Temperature calibration .....	8
5.6	Test procedure for the determination of $C_p$ .....	8
5.6.1	General .....	8
5.6.2	Method 1: Measurements requiring the knowledge of the K factor .....	9
5.6.3	Method 2: measurements requiring the use of a reference standard material (SRM) .....	11
5.7	Calculation of results .....	14
5.7.1	Method requiring the knowledge of the K factor .....	14
5.7.2	Method using an SRM .....	16
<b>6</b>	<b>Test report .....</b>	<b>17</b>
<b>Annex A (normative) Drop calorimetry - determination of the calibration factor using standard reference material .....</b>		<b>18</b>
<b>Annex B (informative) Standard reference material .....</b>		<b>20</b>
<b>Annex C (informative) Materials for calorimeter calibrations .....</b>		<b>25</b>
<b>Bibliography .....</b>		<b>26</b>