

# ISO 19628:2024-11 (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 .....	3
4.4	Containers .....	3
4.5	Test specimens .....	3
4.6	Calibration of the calorimeter .....	3
4.6.1	General .....	3
4.6.2	Electrical calibration .....	3
4.6.3	Calibration using standard reference material .....	4
4.7	Test procedures .....	4
4.7.1	General .....	4
4.7.2	Test without a container .....	4
4.7.3	Test with a container .....	5
4.7.4	Description of test .....	5
4.8	Calculations .....	6
4.8.1	General .....	6
4.8.2	Determination of the calorimetric calibration factor .....	6
4.8.3	Determination of mean specific heat capacity $C_p$ .....	7
4.8.4	Determination of the specific heat capacity $C_p$ .....	7
<b>5</b>	<b>Method B - differential scanning calorimetry .....</b>	<b>7</b>
5.1	Principle .....	7
5.1.1	General .....	7
5.1.2	Stepwise heating method .....	8
5.1.3	Continuous heating method .....	8
5.2	Apparatus .....	9
5.3	Standard reference materials, SRM .....	9
5.4	Test specimens .....	9
5.5	Temperature calibration .....	9
5.6	Test procedure for the determination of $C_p$ .....	10
5.6.1	General .....	10
5.6.2	Method 1: Measurements requiring the knowledge of the K factor .....	10
5.6.3	Method 2: measurements requiring the use of a reference standard material (SRM) .....	12
5.7	Calculation of results .....	15
5.7.1	Method requiring the knowledge of the K factor .....	15
5.7.2	Method using an SRM .....	17
<b>6</b>	<b>Test report .....</b>	<b>18</b>
<b>Annex A (Informative)</b>	<b>Drop calorimetry - determination of the calibration factor using standard reference material .....</b>	<b>19</b>
<b>Annex B (informative)</b>	<b>Standard reference material .....</b>	<b>21</b>
<b>Annex C (informative)</b>	<b>Materials for calorimeter calibrations .....</b>	<b>27</b>
<b>Bibliography .....</b>		<b>28</b>