

# DIN EN ISO 4499-3:2016-10 (E)

## Hardmetals - Metallographic determination of microstructure - Part 3: Measurement of microstructural features in Ti (C, N) and WC/cubic carbide based hardmetals (ISO 4499-3:2016)

---

<b>Contents</b>	<b>Page</b>
European foreword .....	3
Foreword .....	4
Introduction .....	5
<b>1 Scope</b> .....	<b>6</b>
<b>2 Normative references</b> .....	<b>6</b>
<b>3 Terms and definitions</b> .....	<b>6</b>
<b>4 Symbols and units</b> .....	<b>7</b>
<b>5 Principle</b> .....	<b>8</b>
<b>6 Apparatus</b> .....	<b>8</b>
<b>7 Calibration</b> .....	<b>9</b>
<b>8 Preparation of test samples</b> .....	<b>9</b>
8.1 Metallographic preparation .....	9
8.2 Ti(C, N) based hardmetals – cermets .....	9
8.3 WC/Cubic carbide based hardmetals .....	13
<b>9 Procedure for characterisation of structures</b> .....	<b>25</b>
9.1 Sampling of images of structure .....	25
9.1.1 General .....	25
9.1.2 Representative selection .....	25
9.1.3 Determination of homogeneity of hard phase sizes .....	25
9.1.4 Inhomogeneous materials .....	26
9.2 Phase size measurement .....	26
9.2.1 General .....	26
9.2.2 Phase measurement by intercepts .....	26
<b>10 Uncertainty of measurement</b> .....	<b>28</b>
<b>11 Test report</b> .....	<b>28</b>
<b>Bibliography</b> .....	<b>30</b>