

# DIN EN ISO 14644-1:2016-06 (E)

## Cleanrooms and associated controlled environments - Part 1: Classification of air cleanliness by particle concentration (ISO 14644-1:2015)

---

| <b>Contents</b>   |  | <b>Page</b> |
|---|--|-------------|
| European foreword .....   |  | 3           |
| Introduction .....  |  | 5           |
| <b>1</b>  | <b>Scope .....</b>   | <b>7</b>    |
| <b>2</b>  | <b>Normative references .....</b>  | <b>7</b>    |
| <b>3</b>  | <b>Terms and definitions .....</b>   | <b>7</b>    |
| <b>3.1</b>  | <b>General .....</b>   | <b>7</b>    |
| <b>3.2</b>  | <b>Airborne particles .....</b>  | <b>8</b>    |
| <b>3.3</b>  | <b>Occupancy states .....</b>  | <b>9</b>    |
| <b>3.4</b>  | <b>Testing instrumentation (see Annex F) .....</b>                                 | <b>9</b>    |
| <b>3.5</b>  | <b>Instrument specifications .....</b>   | <b>10</b>   |
| <b>4</b>  | <b>Classification .....</b>  | <b>10</b>   |
| <b>4.1</b>  | <b>Occupancy state(s) .....</b>  | <b>10</b>   |
| <b>4.2</b>  | <b>Particle size(s) .....</b>  | <b>10</b>   |
| <b>4.3</b>  | <b>ISO Class number .....</b>  | <b>10</b>   |
| <b>4.4</b>  | <b>Designation .....</b>   | <b>11</b>   |
| <b>4.5</b>  | <b>Intermediate decimal cleanliness classes and particle size thresholds .....</b> | <b>11</b>   |
| <b>5</b>  | <b>Demonstration of compliance .....</b>   | <b>12</b>   |
| <b>5.1</b>  | <b>Principle .....</b>   | <b>12</b>   |
| <b>5.2</b>  | <b>Testing .....</b>   | <b>12</b>   |
| <b>5.3</b>  | <b>Airborne particle concentration evaluation .....</b>                            | <b>12</b>   |
| <b>5.4</b>  | <b>Test report .....</b>   | <b>12</b>   |
| <b>Annex A (normative) Reference method for classification of air cleanliness by particle concentration .....</b>         |  | <b>14</b>   |
| <b>Annex B (informative) Examples of classification calculations .....</b>  |  | <b>19</b>   |
| <b>Annex C (informative) Counting and sizing of airborne macroparticles .....</b>   |  | <b>28</b>   |
| <b>Annex D (informative) Sequential sampling procedure .....</b>  |  | <b>33</b>   |
| <b>Annex E (informative) Specification of intermediate decimal cleanliness classes and particle size thresholds .....</b> |  | <b>40</b>   |
| <b>Annex F (informative) Test instruments .....</b>   |  | <b>42</b>   |
| <b>Bibliography .....</b>   |  | <b>43</b>   |
| <b>Foreword .....</b>   |  | <b>4</b>    |