

# ISO 16495:2022-05 (E)

## Packaging - Transport packaging for dangerous goods - Test methods

---

| <b>Contents</b>            |  | <b>Page</b> |
|----------------------------|--|-------------|
| Foreword.....              |  | v           |
| Introduction.....          |  | vi          |
| <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>Selection and preparation of packaging, IBCs and large packaging for testing</b> .....                        | <b>2</b>    |
| 4.1                        | General.....   | 2           |
| 4.2                        | Selection of packaging, IBCs and large packaging.....  | 2           |
| 4.3                        | Information to be provided with packaging, IBCs and large packaging.....   | 2           |
| 4.3.1                      | General.....   | 2           |
| 4.3.2                      | Test contents – using water and non-dangerous substances.....  | 2           |
| 4.3.3                      | Test contents – using the dangerous substance.....   | 3           |
| 4.3.4                      | Vapour pressure.....   | 3           |
| 4.3.5                      | Test contents – using articles.....  | 3           |
| 4.3.6                      | Closing instructions.....  | 3           |
| 4.3.7                      | Handling characteristics of IBCs and large packaging.....  | 3           |
| 4.4                        | Selection of contents and filling of packaging, IBCs and large packaging prior to testing.....                   | 3           |
| 4.4.1                      | General.....   | 3           |
| 4.4.2                      | Packaging, IBC, inner packaging of combination packaging and large packaging to contain liquids.....             | 4           |
| 4.4.3                      | Rigid packaging, rigid IBCs, inner packaging of combination packaging and large packaging to contain solids..... | 4           |
| 4.4.4                      | Flexible packaging, flexible inner packaging and flexible IBCs to contain solids.....                            | 5           |
| 4.4.5                      | Packaging/inner packaging designed to be used part full.....   | 5           |
| 4.5                        | Closing packaging, IBCs and large packaging.....   | 5           |
| 4.5.1                      | Drums, jerricans, composites and inner packaging, IBCs.....  | 5           |
| 4.5.2                      | Bags.....  | 6           |
| 4.5.3                      | Other packaging.....   | 6           |
| 4.6                        | Check of design type specification with requirements.....  | 6           |
| 4.7                        | Conformity check of test samples with design type specification.....   | 6           |
| <b>5</b>                   | <b>Test methods</b> .....  | <b>7</b>    |
| <b>6</b>                   | <b>Facilities for testing</b> .....  | <b>7</b>    |
| 6.1                        | General requirements.....  | 7           |
| 6.2                        | Accuracy of measurement equipment.....   | 7           |
| 6.3                        | Accuracy of measurements in testing.....   | 7           |
| 6.4                        | Climatic conditions.....   | 7           |
| 6.5                        | Reassessment when failure occurs.....  | 8           |
| <b>7</b>                   | <b>Test report</b> .....   | <b>8</b>    |
| <b>Annex A (normative)</b> | <b>Test report</b> .....   | <b>9</b>    |
| <b>Annex B (normative)</b> | <b>Packaging specifications</b> .....  | <b>11</b>   |
| <b>Annex C (normative)</b> | <b>IBC specifications</b> .....  | <b>17</b>   |
| <b>Annex D (normative)</b> | <b>Large packaging specifications</b> .....  | <b>21</b>   |

|  |           |
|--|-----------|
| <b>Annex E (informative) Type of contents</b> .....        | <b>24</b> |
| <b>Annex F (informative) Drop test</b> .....               | <b>25</b> |
| <b>Annex G (informative) Leakproofness test</b> .....      | <b>28</b> |
| <b>Annex H (informative) Hydraulic pressure test</b> ..... | <b>30</b> |
| <b>Annex I (informative) Stacking test</b> .....           | <b>32</b> |
| <b>Annex J (informative) Water spray test</b> .....        | <b>36</b> |
| <b>Annex K (informative) Bottom lift test</b> .....        | <b>37</b> |
| <b>Annex L (informative) Top lift test</b> .....           | <b>38</b> |
| <b>Annex M (informative) Tear test</b> .....               | <b>39</b> |
| <b>Annex N (informative) Topple test</b> .....             | <b>40</b> |
| <b>Annex O (informative) Righting test</b> .....           | <b>41</b> |
| <b>Annex P (informative) Puncture test</b> .....           | <b>42</b> |
| <b>Annex Q (informative) Vibration test</b> .....          | <b>43</b> |
| <b>Bibliography</b> .....                                  | <b>44</b> |