Sources

- DIN EN 13972 of Jan. 2003 – Rigid plastic drums – definition of brimful capacity and total capacity as well as measurement of brimful capacity and total capacity.

1. Purpose

The test serves the determination of the capacity of industrial shipping containers.

2. Terms

- Nominal volume: volume used for nominal description of packaging.
- Package volume: inside space of closed ready-for-dispatch package.
- Brimful volume (= overflow capacity): space within the package and discharge outlet that can be filled with liquid in its position for use.
- Container weight: weight with fix-mounted additional parts (e.g. handles), without closure elements.
- Dimension unit (kg): 1 kg weight corresponds to 1 litre volume of water (at $12 \pm 2\ °C$). A correction factor has to be used at other water temperatures.
- Gross weight: container weight plus weight of contents.

3. Test devices

- A calibrated scales is used, covering the weight area of both the empty and the filled sample and having a measuring accuracy of min. 0.1% of the predetermined measuring range.

4. Procedure

4.1 Brimful capacity
- The container weight is determined individually
- The package is filled with water, in its position for use, up to overflow of the first drop
- Overflowed water is removed
- The gross weight is determined individually
- The difference between gross weight and container weight is calculated; the arithmetic mean value (Xq) and standard deviation (s) are determined

4.2 Package volume
- The container weight is determined individually
- The package is filled with water until all the cavities are full
- The gross weight is determined individually
- The difference between gross weight and container weight is calculated; the arithmetic mean value (Xq) and standard deviation (s) are determined

5. Test report

With reference to these test and specification guidelines, the following is to be stated in the test report:
- Type and number of test samples (e.g. packaging type, packaging number, date of manufacture, tool, form, etc.)
- The calculated difference between gross weight and container weight
- Conversion of weight into litres
- All individual values, arithmetic mean value (Xq), standard deviation (s)
- Date of test, place of test, name of tester