UDC 532.14

Ref. No. : ISO/R 758-1968 (E)

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 758

METHOD FOR THE DETERMINATION OF DENSITY OF LIQUIDS AT 20 °C

1st EDITION
June 1968

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 758, *Method for the determination of density of liquids at 20 °C*, was drawn up by Technical Committee ISO/TC 47, *Chemistry*, the Secretariat of which is held by the Ente Nazionale Italiano di Unificazione (UNI).

Work on this question by the Technical Committee began in 1956 and led, in 1962, to the adoption of a Draft ISO Recommendation.

In November 1963, this Draft ISO Recommendation (No. 657) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Hungary	Portugal
Austria	India	Romania
Belgium	Israel	Spain
Chile	Italy	U.A.R.
Colombia	Japan	United Kingdom
Czechoslovakia	Korea, Rep. of	U.S.S.R.
France	Netherlands	Yugoslavia
Germany	Poland	

Two Member Bodies opposed the approval of the Draft :

New Zealand
U.S.A.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in June 1968, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 758 June 1968

METHOD FOR THE DETERMINATION OF DENSITY OF LIQUIDS AT 20 °C

1. SCOPE

This ISO Recommendation describes a reference method for the determination of the density of liquids at 20 °C.

2. DEFINITION

The density at 20 °C of a material is the mass of unit volume of the material at a temperature of 20 °C. It is expressed in grammes per millilitre.

NOTE. – The millilitre (ml) is commonly used as a special name for the cubic centimetre (cm^3). However, for measurements of high accuracy* only the cubic centimetre (cm^3) should be used in accordance with the decision of the Twelfth Conférence Générale des Poids et Mesures.

3. PRINCIPLE

Determination of the mass at 20 °C of a volume of the material contained in a density bottle, and determination of the volume of the latter by determining the mass of a corresponding volume of water at 20 °C. The density is obtained by dividing the mass of the material by the capacity of the bottle.

4. APPARATUS

Ordinary laboratory apparatus, and

4.1 *Density bottle*, closed type, made of glass and of a size and type suitable for use with the material under test, preferably 25 or 50 ml.

4.2 *Water bath*, maintained at 20 ± 0.1 °C.

5. PROCEDURE

5.1 Clean and dry the bottle (4.1) and weigh it with its stopper to the nearest 1 mg. Fill the bottle with freshly boiled and cooled distilled water, and determine the apparent mass of the contents at 20 °C.

5.2 Clean and dry the bottle, fill it with the sample under test, and determine in a similar manner the apparent mass of sample contained in the bottle at 20 °C.

NOTE. – With volatile liquids, suitable precautions should be taken to avoid loss by evaporation.

* That is, a precision approximately equal to or better than 1 part in 36 000 (which corresponds to the difference between the cubic centimetre and the millilitre as formerly defined).