UDC 637.1/3

Ref. No.: ISO / R 488 - 1966 (E)

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 488

BUTYROMETERS FOR THE DETERMINATION OF THE PERCENTAGE OF FAT IN MILK BY THE GERBER METHOD

1st EDITION

July 1966

Printed in Switzerland

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

BRIEF HISTORY

The ISO Recommendation R 488, *Butyrometers for the Determination of the Percentage of Fat in Milk by the Gerber Method*, was drawn up by Technical Committee ISO/TC 90, *Apparatus for Testing Milk and Milk Products*, the Secretariat of which is held by the Deutscher Normenausschuss (DNA).

Work on this question by the Technical Committee began in 1959 and led, in 1963, to the adoption of a Draft ISO Recommendation.

In March 1964, this Draft ISO Recommendation (No. 700) 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:

Austria	Greece	New Zealand
Belgium	India	Portugal
Brazil	Ireland	Sweden
Chile	Israel	Switzerland
Colombia	Japan	Turkey
France	Korea, Rep. of	United Kingdom
Germany	Netherlands	U.S.A.

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in July 1966, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 488 July 1966

BUTYROMETERS FOR THE DETERMINATION OF THE PERCENTAGE OF FAT IN MILK BY THE GERBER METHOD

1. SCOPE

This ISO Recommendation specifies the characteristics of butyrometers for the determination of the percentage of fat in milk by the Gerber method and also those of the stoppers.

2. TYPES OF BUTYROMETERS

Six types of butyrometers are specified as follows:

0 to 4% butyrometer for testing milk
0 to 5% " " " "
0 to 6% " " " "
0 to 7% " " " "
0 to 8% " " " "
0 to 10% " " " "

3. DETAILS OF CONSTRUCTION

(See Fig. 1, page 6)

3.1 Dimensions

The butyrometers should conform to the dimensions shown in Table 1.

TABLE 1. — Dimensions of the butyrometers

Dimensions	Millimetres
Overall length	190 ± 5
Internal diameter of neck	11 ± 0.5
Length of neck	14.5 ± 1.5
Maximum external diameter of body	25
Maximum external diameter of bulb	15
Minimum wall thickness (1)	0.9

(1) The wall thickness throughout should be adequate to render the butyrometer sufficiently robust for the purpose for which it is intended.

3.2 Material

The butyrometers should be made from clear glass which should be resistant to thermal shocks and chemicals * inherent in the method and should be as free as possible from visible defects.

3.3 Neck

Two types of necks are permitted on the butyrometers:

3.3.1 *Plain neck*, preferably thickened by an outside rim at the top to a maximum of 2.5 mm (see Fig. 1, page 6);

3.3.2 *Corrugated neck* (see Fig. 2, page 6). In this type, the corrugations should be in planes at right angles to the axis of the butyrometer and not form a spiral producing a screw thread; the internal diameter of the neck (see Table 1 above) should be measured at the narrow parts of the corrugations. The number of corrugations is not specified.

* The chemical resistance characteristics should conform to the ISO Recommendations drawn up by Technical Committee ISO/TC 48, *Laboratory Glassware and Related Apparatus.*

3.4 Body

The capacity of the butyrometers between the base of the neck and the 0% graduation mark (i.e. between levels *A* and *B* in Fig. 1 below) should be as shown for the appropriate butyrometer in Table 2, page 7.

3.5 Graduated tube

The graduated tube of the six types of butyrometers for testing milk should be of the flat-scale type shown in cross-section in Fig. 1 below; the back surface of the tube should not be frosted.

Butyrometers for testing milk

(Dimensions in accordance with Table 1, page 5, and Table 2, page 7)

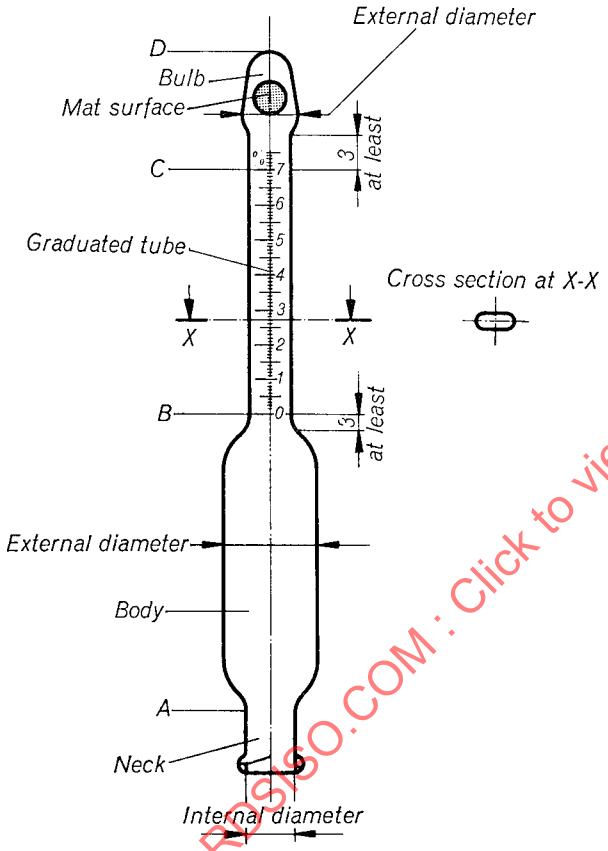

FIG. 1.

Dimensions in millimetres

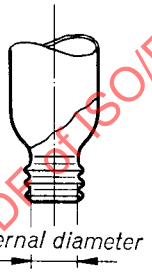

FIG. 2.

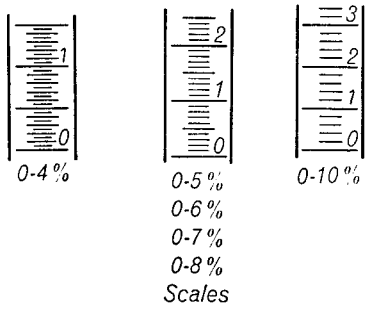

FIG. 3.

Rubber stoppers for butyrometers

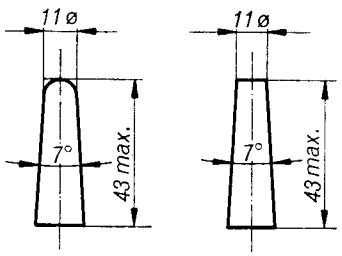

FIG. 4.

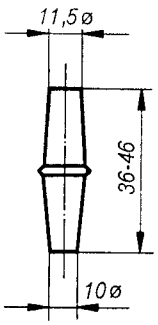

FIG. 5.