National Standard of the People’s Republic of China

GB 5413.33—2010

National food safety standard

Determination of specific gravity in raw milk

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Forward


Replaced previous published standards:


——GB/T5416-85;
National food safety standard
Determination of specific gravity in raw milk

1 Scope
This standard specifies the method for the determination of specific gravity in raw milk.
This standard applies to the determination of specific gravity in raw milk.

2 Principle
Determine the sample by densimeter and the result could be obtained by table lookup based upon the reading of the densimeter.

3 Apparatus
3.1 Densimeter: 20°C/4°C
3.2 Glass cylinder or graduated cylinder of 200 mL-250 mL capacity: the cylinder should be higher than the densimeter, and the distance between densimeter and the inner wall of the cylinder should not be shorter than 5 mm.

4 Procedure
Cautiously pour the sample which has been mixed evenly and adjusted to 10°C-25°C previously into the cylinder and measure the temperature. Foam should be avoided during the procedure. Cautiously put the densimeter into the sample till the place of scale 30° and let it float freely but keep it away from the inner wall of the cylinder. After standing for 2-3 min, read by keeping eyes horizontal to the milk surface. The density at 20°C could be obtained by looking up table 1 according to the reading and the temperature of the sample.

5 Expression of results
The specific gravity(ρ_{420}) could be calculated by following formula:

\[
\rho_{420} = \frac{X}{1000} + 1.000 \quad (1)
\]

where:
\(\rho_{420}\) — the specific gravity of the test sample
X — the reading of densimeter

When using 20°C/4°C densimeter, if the temperature is 20, the specific gravity could be calculated directly by the reading of the densimeter through formula (1); if the temperature is not 20°C, the reading of the densimeter should be converted to density at 20°C by
looking up table 1 and then the specific gravity could be calculated through formula (1).

Table 1  The reading of densimeter –The density at 20°C conversion tables

<table>
<thead>
<tr>
<th>The reading of densimeter</th>
<th>Temperature of raw milk/°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>23.3</td>
</tr>
<tr>
<td>26</td>
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<tr>
<td>29</td>
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<td>33.5</td>
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