AMMONIA | Milk-Cheese-Cream

DEFINITION AND SCOPE OF THE TEST

Ammonia is an important indicator of the quality of milk, in all stages of the production chain. In fact the ammonia is a metabolite of microbial activity and increases with the amount of bacteria in milk.

TEST PRINCIPLE

The ammonium ions react with a phenolic derivative and form a blue-green colored complex whose intensity, measured at 700 nm, is directly proportional to the concentration of ammonia in the sample.

COMPOSITION OF THE KIT AND REAGENTS

Reagent test kit *300050, suitable for 100 tests, contains:
- 1 box includes: 10 x reagent test kit *300054.

Reagent test kit *300054, suitable for 10 tests, contains:
- R1: package with 10 pre-filled cuvettes with 1 mL of buffer.
- R2: bottle with 3 mL of starter reagent.

For information on the hazards associated with reagents, consult the product’s safety data sheet. Storage: reagents are stable up to the expiry date. Store at 2-8°C.

PROCESSING – SAMPLE VOLUME – MEASURING RANGE

Whole or skimmed milk: use as is.
Cheese: Weight 5 gr of sample, crumble it and mix in 45 mL of distilled water. Centrifuge or filter in order to separate the larger parts. The blush does not interfere. Rapidly process the sample as ammonia tends to increase.
Fresh cream: Take 4mL of cream in a centrifuge tube, add 100 uL of HCL (diluted 1:10), shake it and centrifuge for 5 minutes. Take the aqueous solution and filter it, if necessary. Use the “NH3 skimmed milk” curve to test.

<table>
<thead>
<tr>
<th>Test</th>
<th>Measuring range (ppm of NH₃)</th>
<th>Sample volume</th>
<th>Resolution (ppm of NH₃)</th>
<th>Accuracy</th>
<th>Repeatability</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH3 whole milk.</td>
<td>1 - 80</td>
<td>50 µL</td>
<td>1</td>
<td>+/- 5%</td>
<td>CV &lt;3%</td>
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</tr>
</tbody>
</table>

CALIBRATION CURVE

Comparative tests, performed on samples of whole milk, between the reference method and the FOODLAB method, performed in a leading company of production of milk, have confirmed a very good correlation between the two systems.

![Ammonia on milk](image-url)
TEST PROCEDURE

Reagent preparation

Reagent R1: prefilled test cuvette are ready to use.
Reagent R2: ready to use.

Selection of the test, addition of the sample and incubation of blank

1. Press key 3 on keyboard to display available analysis on reading cell 3 or 0 to display all available analysis. Select the proper NH3 curve, depending on the sample to test, confirm your selection by pressing ENTER (on display shows INCUBAT. 5 MIN).
2. Remove the cap of a cuvette and add in 50 µL of sample using the pipette SOCOREX 20-200. Close the cuvette and mix it gently. Place the cuvette in the incubation cell Repeat the operation for each sample to test. It is possible to analyze a maximum of 14 samples for each test session.
3. Press ENTER to start the incubation.

Note:
Homogenize the sample in the bottle before taking it.
To prevent contamination from previous samples, use a new tip for each test.
Remove excess sample by wiping the outer surface of pipette tip gently using a blotting paper.
Immerse the pipette tip in the reagent while dispensing sample. Press and release the piston of pipette several times to ensure all sample has been transferred.
Mix the sample with reagent, after adding, by inverting the cuvette several times.

Reading of the blank

4. At the end of the incubation press ENTER. The display shows INSERT BLANK.
5. Invert the incubated cuvette to mix before inserting in the reading cell with the green light. Press ENTER to start the reading. The green light turns to red for a few seconds until the reading has completed. Repeat this operation for each sample.
6. To stop the blanks reading session press ARROW KEY UP. The display shows INCUBAT. 3 MIN.

Addition of R2 and incubation of the sample

7. Using the pipette SOCOREX 20-200, add 200 µL of R2 reagent to each cuvette, mix it by inverting the cuvette 2-3 times. Repeat this procedure for each sample to test.
8. Press ENTER to start the incubation.

Notes: the addition must be carried out without touching the [R1] reagent with the tip. In the event of contact, replace the tip to avoid contaminating the R2 reagent.

Reading of the sample

9. At the end of the incubation, press ENTER. The display shows INSERT SAMPLE.
10. Invert the incubated cuvette 2-3 times to mix and place it in the reading cell with the green light. Press ENTER to start the reading. The green light turns to red for a few seconds until the reading is completed. Repeat this operation for each sample to test.
11. The results, expressed in ppm of Ammonia, will be automatically printed and displayed at the end of the session.
12. Press ENTER and ARROW KEY DOWN to return to the test menu.

SYSTEM STANDARDIZATION

The system is supplied pre-calibrated and ready for use.
Results are expressed in accordance with the reference method.
It is also possible to standardize the system using samples with a known titration.
For information on the operating procedure, see the manual provided with the system.

For in – vitro use only