

## FOOD ANALYSIS / MILK AND DAIRY PRODUCTS

The use of HettCube incubators and cooled incubators to detect the presence of inhibitors in milk and dairy products for infants

Inhibitors prevent the growth of micro-organisms or destroy them, and are present in veterinary products and other products. Their use is subject to statutory regulation. Milk and dairy products therefore have to be tested for the presence of inhibitors.

### — Methods of detection

The method specified under the German Lebensmittel- und Futtermittelgesetz (LFGB) [Food and Feedstuff Act] involves a test system with the test organism *Bacillus stearothermophilus* and agar medium. This micro-organism is particularly sensitive to penicillin. Assay discs of filter paper are immersed in the sample under test and then laid on the agar. If the sample contains an inhibitor then a clear, transparent ring will form around the disc because of the inhibition of growth.

#### Importance of the the inhibitor test

Bulk milk must be tested every two weeks under § 2 of the Milchgüte-Verordnung [Milk Quality Regulations] for the presence of inhibitors. One aim is to protect consumers, who may be allergic to certain antibiotics. Furthermore, the excessive use of antibiotics may lead to an increased resistance to their action. A further important reason for testing is that the presence of inhibitors can adversely affect the production of fermented dairy products. Fermentation may be stopped and complete failure of the production process may result.

#### Incubation conditions according to the analytical method given in § 64 LFGB \*

	Temperature	Duration
<b>initial culture of the test strain</b>	63 °C	48 h
<b>incubation of the culture for use</b>	63 °C	16 – 18 h
<b>demonstration of inhibitor presence</b>	63 °C	2,5 – 5 h

### — Advantages of HettCube incubators

- Maximal validated usable space on a small footprint
- 4.3 inch touch display for intuitive operation
- Very homogeneous and stable temperature, as well as precise temperature control
- True "one-hand-operation" and flexible positioning of the shelves
- Minimal energy consumption of < 0.06 kW/h at 37 °C
- Low noise level of ≤ 44 dB(A)
- Optimized loading capacity through unique accessories and options



Fig. 1: The inhibitor test

\* Official collection of test methods in accordance with § 64 of the LFGB (previously § 35 of the LMBG), Vol. I (L) L 01.00-6: Demonstration of inhibitors in milk; the agar diffusion test (assay disc test). 1997

### Hettich solution

Model	Cat. No.
HettCube 200	<b>62000</b>
HettCube 400	<b>64000</b>
HettCube 600	<b>66000</b>
HettCube 200 R	<b>62005</b>
HettCube 400 R	<b>64005</b>
HettCube 600 R	<b>66005</b>

Model without IVD	Cat. No.
HettCube 200	<b>62001</b>
HettCube 400	<b>64001</b>
HettCube 600	<b>66001</b>
HettCube 200 R	<b>62006</b>
HettCube 400 R	<b>64006</b>
HettCube 600 R	<b>66006</b>