



# Milk Diluent • Milk Fix

## Diluent and Fixation Solutions for Electronic Cell Counting of Somatic Cells of Natural Milk Samples

For use see also instruction manual of the cell counter.

### Principle

Somatic cells are particles of raw-milk, which after establishing of the lower threshold and after elimination of the size of somatic cells overlapping fat-particles can be counted with an electronic cell counter. Therefore the disturbingly fat particles become dissolved with MILK DILUENT.

### Milk Diluent

is a buffered emulsifier electrolyte solution for electronic counting of somatic cells and posses an excellent stability of pH value.

This instant diluent solution is stabilized against microbial growth. It contains no carcinogenic formalin which would disintegrate to formic acid and make the diluent solution unusable.

MILK DILUENT contains also no ethanol/alcohol or other easily fleeting substances, which may evaporate in time of storage and utilisation and may change the composition negatively.

MILK DILUENT warrants therefore eminently long shelf life.

The osmotic pressure and the electrolytic conductivity are adjusted to the milk-samples respectively to the measurement properties of the cell-counters.

MILK DILUENT is ready for use and has original closed a shelf life at room temperature (+10...+25 °C) up to the imprinted expiry date. After opening use within 2 month. Close bottle/container well. Protect solution from particle contamination out of air; use a micro-Filter ≤0.22 µm as venting valve.

### Milk Fix & Milk Fix Color

Milk Fix & Milk Fix Color are fixation solutions based on sodium azide (NaN<sub>3</sub>) (colourless or with colour indicator). The advantage is the simple mixing contrary to sodium azide tablets and avoidance of particles from tablet additives (1 tablet 0,1 g = 100 mg contains only 8 mg sodium azide, but 92 mg = 92 % tablet additives!)

MILK Fix is ready for use and has original closed a shelf life at room temperature (+10...+25 °C) up to the imprinted expiry date. After opening use within 6 month, not longer than until the imprinted expiry date. Close bottle/container well.

### Risks und Safety

Please observe the necessary precautions for use of laboratory reagents. Applications should be performed by expert personnel only. Follow the national and laboratory internal guidelines for work safety. Wear suitable protective clothing, safety eyewear and disposable gloves while handling.



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For additional safety information please refer to the information on the label and the corresponding Safety Data Sheet (SDS).

Download by QR-Code or link:

[www.sds-id.com/100-7](http://www.sds-id.com/100-7) (Milk Diluent)

[www.sds-id.com/100-7](http://www.sds-id.com/100-7) (Milk-Fix & Milk Fix Color)

### Main Components

004921-...	Cont.	Buffer solution, emulsifiers, detergents, stabilizers
004931-...	Cont.	30 µL = 1...2 drops contains 8 mg sodium azide
004932-...	Cont.	30 µL = 1...2 drops contains 8 mg sodium azide + Indicator
004921-1010	1x	1.0 L Milk Diluent (Diluent solution)
004921-1100	1x	10.0 L Milk Diluent (Diluent solution)
004931-0025	1x	25 mL Milk-Fix (sodium azide solution)
004932-0025	1x	25 mL Milk-Fix Color (sodium azide solution + Indicator)



1. MilkDiluend + raw-milk
2. MilkDiluend + raw-milk after not sufficient incubation.
3. + 4. MilkDiluend + raw-milk after sufficient incubation of 15 min at 80 ± 1°C and cooling down to +20°C.

### Fixation of the samples

Mix the samples thoroughly and avoid foam formation. Give to 10 mL of sample 30 µL (1...2 drops) MILK-FIX or MILK FIX COLOR and mix well (dilution 1 : 1.003). Fixedated samples are colored identifiable.

Other fixation methods are also possible but must be evaluated.



## Procedure

The fixed samples will be brought on ambient temperature (+20 ... +25 °C) and mixed carefully. Then dilute 0.1 mL sample to a final volume of 10 mL with MILK DILUENT (dilution 1 : 100 = 0.1 mL sample + 9.9 mL MILK DILUENT).

Close the samples well (evaporation!) and incubate in a water bath for 15 minutes at  $80 \pm 1$  °C. The tubes must be placed so in the water bath that the samples are always fully immersed.

After incubation cool the samples in an other water bath to +15 ... +25 °C. The diluted sample will now be clear. A lightly opalescent glimmer will be evoked by casein-micelles and does not affect the measurement.

The prepared samples has to be counted within 1 h after re-cooling. Directly before measurement mix the sample by inversion for several times. Avoid mini air bubbles, bigger air bubbles are drafting up quickly!).

For cell-counting see the instruction-manual of the cell-counter. Use a cell-counting-cell with a 100 µm capillary port.

## Evaluation

For a dilution of 0.1 mL raw milk with 9.9 mL MILK DILUENT (dilution 1 : 100) and a counting volume of 0.1 mL sample dilution, the cells get in 1000 /mL (thousand per milliliter) raw-milk.

For other dilution e.g. 100 : 101 (0.1 mL raw milk + 10 mL MILK DILUENT) multiply the value with the correspond factor (e.g. factor = 1.01) for receive cells as 1000 /mL.

Please note the dilution of your device, as well as the additional dilution caused by the fixation! The last is quite insignificant, as it is only included in the calculation with a factor of 1.003 (0.3 %).

## Precision

The coefficient of variation (CV) should be lower than 7.5% by a cell result of 400000 ... 600000/mL and a quote of White Blood Cells (WBC) of approx. 80 %.

## Notes

This product information exclusively relates to the product described in this leaflet. In particular, this product information cannot be applied to similar reagents from other manufacturers.

Periodically check for updates of this product information on our website.

### **Instruction for use**

For professional use only.

To avoid errors, the use of qualified personnel is carried out. National guidelines for work safety and quality assurance must be followed.

The used equipment must comply with the state of technology and the laboratory requirements.

All samples and used tubes/vials must be marked clearly identifiable to exclude any confusion.

### **Recommendations**

For reasons of accuracy, the use of automatic pipetting equipment (dilutors) is recommended for the preparation of dilutions.

To stabilize the water baths against microbial growth we recommend the addition of "ThermoClean". Further information on request.

### **Support / Information service**

For methodological and technical support, please contact us by E-Mail at [support@bioanalytic.de](mailto:support@bioanalytic.de) (German, English).

Periodically check for updates of this product information on our website.

### **Feedback**

Information from users can be reported to [support@bioanalytic.de](mailto:support@bioanalytic.de) (German, English).

Suggestions for further developments will be considered.

### **Waste Management**

Please observe your national laws and regulations.

Used and expired solutions must be disposed of in accordance with your local regulations.

Inside the EU, national regulations apply that are based on the current, amended version of Council Directive 67/548/EEG on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances.

Decontaminated packaging can disposed of as household waste or recycled, unless otherwise specified.

### **Unused Remains**

These are usually hazardous wastes that must be recycled or disposed of. After consultation we take back such residual materials in the original container.

## Literature & Footnotes

Legends for the graphic symbols and tags used follow relevant norms or are available on our internet pages.