

# 034-EFA

## Urea Kit



**Enzymatic method using difference in pH**

Reference method according to ISO 14637:2004 / FIL 195:2004

V034-EFA-21031

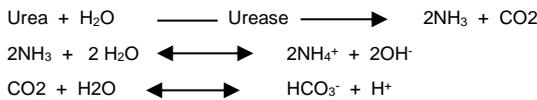
### INTENDED USE

034-EFA Urea kit is intended to be used for the quantification of urea in raw milk, pasteurized milk, and UHT milk.

The kit is designed to be used only with the EC Microlab EFA instrument. This kit is not to be used in any human clinical or veterinary diagnostic application.

### ASSAY PRINCIPLE

Urease catalyses the following reaction:



The variation of H<sup>+</sup> is proportional to the amount of urea in the sample.

### KIT COMPONENTS

**R1** : Phosphate buffer pH 6.7, stabilizers  
2 bottles with 180 mL each  
Stable at 2-8 °c until expiry date

**R2** : Urease 2100 U/mL, stabilizers  
2 vials with 1.8 mL each  
Stable at 2-8 °c until expiry date

**CAL** : Urea calibrator, 100 mg/dL, stabilizers  
2 vials with 1.8 mL each  
Stable at 2-8 °c until expiry date

### REAGENT PREPARATION

Important: allow the reagents to come to room temperature (18-30 °C).

All reagents are ready to use.

### SAMPLE PREPARATION

Important: Allow the samples to come to room temperature (18-30 °C).

In order to get accurate results all samples should be homogenized before testing. If particles larger than 0.3mm are present, filtration or centrifugation is necessary.

Dispense 0.5 mL minimum sample volume in the Microlab® EFA cups in order to prevent fat, which floats on the surface of the liquid, from affecting the assay results. Fat can stick to the dispensing needle and not be properly washed away. Whenever this happens sample may be underestimated.

### TEST PROCEDURE

- 034-EFA Urea kit is specific method to be used on EC Microlab EFA instrument and is included in the EFA Instrument Software (regarding the use of this software please consult the EC Microlab EFA User Manual).
- Positioning on deck :  
R1 to be connected with peripump no. 3  
R2 Enzyme rack  
CAL Calibrator rack
- Press the *Edit Test Settings* button and make sure that all parameters for UreaFIL given in the tables below are set correctly.
- Prime needle and electrodes (BeginWork).
- Start the method by clicking the UreaFIL method execution button.
- The blank signal must be within ±4 mpH. If this is not the case, perform the calibration again.

If the result is out of specifications, run a cleaning session using the Regenerating Solution (#034B) or the Polif Solution (#034A).

### TEST SETTINGS

#### Volumes and Positions

#### Reagent Positions

The positions CalibPos, EnzymePos, ControlStart and SampleStart are freely defined by user (default is I). Make sure that all positions match the current state of the deck.

#### Specials

#### Number of Jobs

Blank	3	ControlSet	0
Calibs	1	ControlFreq	0
CalibCheck	1	Replicas	1
CalibFreq	100	PreLoad	0

The number of repetitions can be freely defined by user (default is I); this refers to the number of duplications for each sample.

### CALCULATION

The reaction is linear and the calculation is automatically done by software according to the following equations:

$$\text{Slope} = \text{Calibrator Concentration} / \text{Calibrator Signal}$$

$$\text{Sample Concentration} = \text{Slope} \times \text{Sample Signal}$$

## UNITS

The concentration of the calibrator in the kit is expressed in mg/dL. Units may be changed only for samples by editing the conversion factor and Sample User Units in the Excel sheet.

This operation must be carried out before starting a method. In the EFA Instrument application select *Milk book* and press the button *Go to Excel book*. On Excel edit the *Sample User Units* and the conversion factor and save the file. Example: If the desired unit is g/L instead of mg/dL, edit g/L in the cell adjacent to the *Sample User Units* cell and enter 0.01 in the cell adjacent to *Conversion Factor* cell. NOTE: do not edit the other cells!

Conversion Factor	User Units
1	mg/dL
10	mg/L
0.01	g/L
0.1665	mM

## SPECIFICITY

The reaction is specific for urea.

## TEST SPECIFICATIONS

Linearity:	3 - 400 mg/dL (0.5 - 66.6 mM)
Precision on calibrator:	± 1.5 mg/dL at 100 mg/dL (±0.25 at 16.66 mM)

## NO. OF TESTS RATIONALE

The composition of the present 034-EFA Urea kit is calculated for 4 series with 25 samples, 3 blanks, 1 calibration, 1 calibration check and 2 controls each. Consider that the number of determinations for this test goes below 100 if the number of series will be more than 4.

## CONTAMINATION CHECK

When the DI value of the calibrator shifts 2 mpH more than previous sample DI, Urease contamination is present. . Whenever this happens, clean the mixing cell with regenerating solution (reagent not supplied with the kit, use Regenerating Solution — #034B).

If the zero Milk Standard is higher than 3 mg/dL, it is necessary to perform a strong regeneration of the electrodes (Use Strong Regenerating Solution — #034C. **CAUTION: Corrosive reagent!** Refer to the respective MSDS, available upon request).

**Attention:** after using the regenerating solution, both normal and strong, add 1 mL of milk into the mixing chamber during washing procedure (Polif Solution — #034A).

## SAFETY

Good laboratory practice should be employed when using this kit. Safety clothing should be worn and skin contact with reagents avoided. Do not ingest.

Material safety data sheets are available on request.

**EXP** use before  
Date d'expiration

**LOT** Lot  
N° de lot

**REF** catalogue number  
N° dans le catalogue

 2°C - 8°C  
Store at 2-8°C  
Conserver à 2-8°C



Attention



Notice utilisation  
Operation note



Biosentec  
48 chemin des Palanques Sud  
31120 Portet sur Garonne