

# MEDICA

Results Within Reach Since 1983

## **EasyLyte<sup>®</sup>** [medicacorp.com](http://medicacorp.com)

**Na<sup>+</sup>/K<sup>+</sup>**

Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup>

Na<sup>+</sup>/K<sup>+</sup>/Li<sup>+</sup>

Na<sup>+</sup>/K<sup>+</sup>/Ca<sup>++</sup>/pH

Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup>/Ca<sup>++</sup>

Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup>/Li<sup>+</sup>



# EasyLyte®

*easy inside and out*

- **Easy to Use**

Simple, menu-driven, Yes/No prompted operation

Whole blood, serum, plasma or urine samples

Results printed automatically in less than 60 seconds

Automatic or on-demand calibration

Automatic probe wiping

- **Easy to Maintain**

All calibrants contained in convenient, disposable solutions pack

All waste collected in solutions pack

Disposable electrodes require no maintenance

Modular design makes maintaining analyzer simple and fast

- **Easy to Afford**

Low analyzer purchase price

Low cost per test

- **Available in five models:**

- **EasyLyte**  $\text{Na}^+/\text{K}^+$

- **EasyLytePLUS**  $\text{Na}^+/\text{K}^+/\text{Cl}^-$

- **EasyLyteLithium**  $\text{Na}^+/\text{K}^+/\text{Li}^+$

- **EasyLyteCalcium**  $\text{Na}^+/\text{K}^+/\text{Ca}^{++}/\text{pH}$

- **EasyLyteExpand**  $\text{Na}^+/\text{K}^+/\text{Cl}^-/\text{Ca}^{++}$  or  $\text{Li}^+$







Modular, maintenance-free electrodes



Pressing Yes or No buttons is all that is required to analyze serum, plasma or whole blood



Self-contained Solutions Pack contains liquid calibrants and collects all waste, eliminates sample contact



# Cl<sup>-</sup>



Internal printer prints patient results, calibration values, quality control data, and results summaries, flagging abnormal results

# K<sup>+</sup>



Capillary sampler is removable and disposable



### EasySampler

The modular EasySampler connects quickly to EasyLyte analyzers, enhancing laboratory performance.

- 21 sample positions
- Dedicated Stat position
- Normal/Abnormal QC positions
- Optional auto-repeat of out-of-range values

Li+

pH

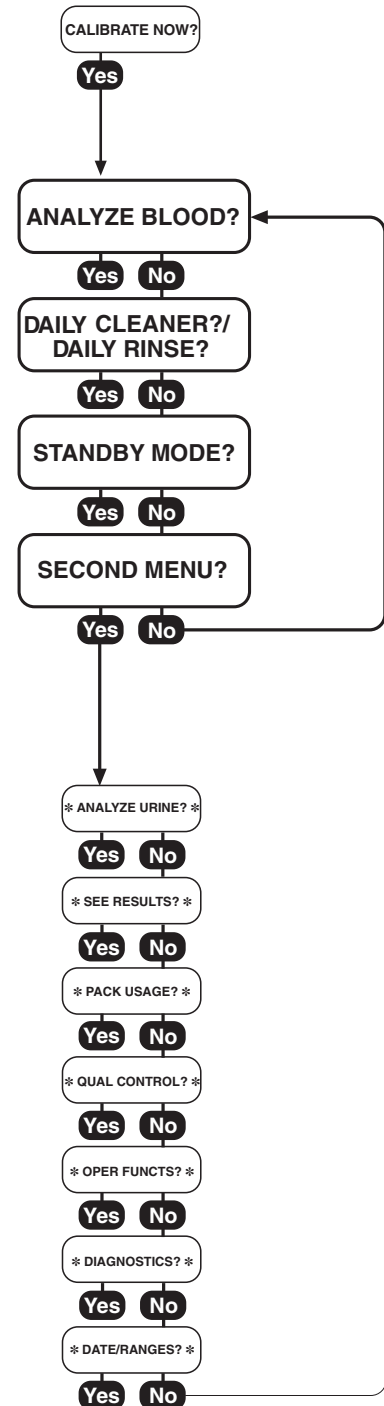
### Analyzer software insures ease of operation

Software computes quality control statistics, flags abnormal results, and monitors performance.

- Two button operation
- Automatic calibration
- User-friendly menu

Ca++

Na+



## Specifications

(**Na<sup>+</sup>/K<sup>+</sup>**, Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup>, Na<sup>+</sup>/K<sup>+</sup>/Li<sup>+</sup>, Na<sup>+</sup>/K<sup>+</sup>/Ca<sup>++</sup>/pH, Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup>/Ca<sup>++</sup>, Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup>/Li<sup>+</sup>)

# MEDICA

Medica Corporation  
5 Oak Park Drive  
Bedford, MA 01730-1413  
USA

**CLIA Classification:** Moderate Complexity  
**Sample Type:** Whole Blood, Serum, Plasma or Urine  
**Sample Size:** 100 µL Whole Blood, Serum, Plasma, 60 µL capillary or 400 µL diluted (1:10) Urine  
**Method:** Direct measurement by Ion Selective Electrode (ISE)

USA 800 777 5983

Global +1 781 275 4892

Fax 781 275 2731

medicacorp.com

**Measurement Range:**

Blood	Urine
Na <sup>+</sup> : 20 – 200 mmol/L	Na <sup>+</sup> : 25 – 1000 mmol/L
K <sup>+</sup> : 0.2 – 40 mmol/L	K <sup>+</sup> : 1.0 – 500 mmol/L
Cl <sup>-</sup> : 25 – 200 mmol/L	Cl <sup>-</sup> : 25 – 500 mmol/L
Li <sup>+</sup> : 0.2 – 5.0 mmol/L	
Ca <sup>++</sup> : 0.1 – 6.0 mmol/L	
pH: 6.0 – 8.0 Units	

**Display Resolution:**

Na <sup>+</sup> : 0.1 mmol/L	K <sup>+</sup> : 0.01 mmol/L	Cl <sup>-</sup> : 0.1 mmol/L
Li <sup>+</sup> : 0.01 mmol/L	Ca <sup>++</sup> : 0.01 mmol/L	pH: 0.005 units

	<b>Na<sup>+</sup>/K<sup>+</sup></b>	<b>Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup></b>	<b>Na<sup>+</sup>/K<sup>+</sup>/Li<sup>+</sup></b>	<b>Na<sup>+</sup>/K<sup>+</sup>/Ca<sup>++</sup>/pH</b>	<b>Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup>/Ca<sup>++</sup></b>	<b>Na<sup>+</sup>/K<sup>+</sup>/Cl<sup>-</sup>/Li<sup>+</sup></b>
<b>Analysis time (blood)</b>	55 sec	55 sec	55 sec	60 sec	60 sec	60 sec
<b>Urine Mode</b>	Yes	Yes	Yes**	No	Yes*	Yes**
<b>Analysis time (urine)</b>	90 sec	90 sec	90 sec	N/A	90 sec	90 sec
<b>Vet Mode</b>	Yes	Yes	No	No	No	No
<b>EasySampler</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Capillary Samples</b>	Yes	Yes	Yes	No	No	No
<b>Bar Code Reader (Sample ID)</b>	No	Yes	Yes	Yes	Yes	Yes

**Data Storage:** Patient results — up to 128 samples  
QC results — up to 20 each Normal, Low, and High

**Calibration:** Automatic or On-Demand

**Output:** 128 x 64 pixel graphic display  
24 column thermal printer  
Serial port (RS-232), EasySampler port  
Serial Y cable, connects barcode reader / PC

**Ambient Conditions:** 15–32°C (60–90°F), <85% humidity

**Power:** 100-240 VAC 50/60 Hz, 0.8A

**Size & Weight:** 9.5"W x 16.5"H x 8.0"D (24 cm W x 42 cm H x 20 cm D) 13 lbs. (5.8 kg)

\* Calcium Results Not Reported

\*\* Lithium Results Not Reported

## EASYLYTE Na<sup>+</sup>/K<sup>+</sup> SOLUTIONS PACK

REF 2109 400mL

REF 2120 800mL

### INTENDED USE

The EasyLyte Na<sup>+</sup>/K<sup>+</sup> Solutions Pack is intended for the quantitative determination of sodium (Na<sup>+</sup>) and potassium (K<sup>+</sup>) in human serum, plasma, whole blood and urine using the MEDICA EasyLyte<sup>®</sup> Analyzer.

For professional use only. For *in vitro* diagnostic use only.

### SUMMARY AND EXPLANATION

Electrolyte measurements in biological fluids were traditionally performed using flame photometry. The development of selective organic compounds for sodium, potassium and other electrolytes has permitted the development of sensors capable of the direct measurement of biological fluids throughout the physiological range. These sensors are known as ion-selective sensors.

Sodium is the major cation in extracellular fluid and has a major effect on osmotic pressure and water distribution between cells, plasma and interstitial fluid. Low sodium imbalance (Hyponatremia) is associated with diarrhea, server polyuria, metabolic acidosis, Addison's disease and renal tubular disease. High sodium imbalance (Hypernatremia) is associated with hyperadrenalism, severe dehydration, brain injury, diabetic coma and excess treatment with sodium salts.

Potassium is a major cation in intracellular liquid. Potassium imbalance has a direct effect on muscle irritability, myocardial function and respiration. Some conditions that effect potassium levels in blood include hypoaldosternism, diarrhea, vomiting and therapy with diuretics for hypertension or cardiac disease. Unlike sodium, there is no mechanism to maintain a threshold potassium level in the body.

### PRINCIPLE OF THE PROCEDURE

The EasyLyte analyzer measures sodium and potassium in human serum, plasma, whole blood and urine using ion-selective electrode technology. The flow-through sodium electrode uses a selective membrane that is specially formulated to be sensitive to sodium ions. The potassium electrode employs a similar design with appropriate selective membrane materials. The potential of each electrode is measured relative to a fixed and stable voltage that is established by the double-junction silver/silver chloride reference electrode. An ion-selective electrode develops a voltage that varies with the concentration of the ion to which it responds. The relationship between the voltage developed and the concentration of the sensed ion is logarithmic, as expressed by the Nerst equation:

$$E = E^{\circ} + \frac{RT}{nF} \log (g C)$$

where: E = The potential of the electrode in sample solution  
E<sup>°</sup> = The potential developed under standard conditions  
RT/nF = A temperature dependent "constant", termed the slope(s)  
n = 1 for sodium, potassium  
Log = Base ten logarithm function  
g = Activity coefficient of the measured ion in the solution  
C = Concentration of the measured ion in the solution

## REAGENTS

### 400mL Solutions Pack (REF 2109)

#### Standard A Solution, 400mL

140.0 mmol/L Na<sup>+</sup>

4.0 mmol/L K<sup>+</sup>

Buffer

Preservative

Wetting Agent

#### Standard B Solution, 130mL

35.0 mmol/L Na<sup>+</sup>

16.0 mmol/L K<sup>+</sup>

Buffer

Preservative

Wetting Agent

#### Wash Solution, 50mL

0.1 mol/L Ammonium bifluoride

#### Waste Container

### 800mL Solutions Pack (REF 2120)

#### Standard A Solution, 800mL

140.0 mmol/L Na<sup>+</sup>

4.0 mmol/L K<sup>+</sup>

Buffer

Preservative

Wetting Agent

#### Standard B Solution, 180mL

35.0 mmol/L Na<sup>+</sup>

16.0 mmol/L K<sup>+</sup>

Buffer

Preservative

Wetting Agent

#### Wash Solution, 80mL

0.1 mol/L Ammonium bifluoride

#### Waste Container

## PRECAUTIONARY STATEMENTS



May cause skin irritation (H315)

May cause eye irritation (H319)

If on skin, wash with plenty of soap and water (P302 + P352)

If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing. (P305 + P351 + P338)



When used, the Solutions Pack contains human body fluids and is considered biohazardous. Handle and dispose of the Solutions Pack using the same precautions as with any biohazardous material. Discard according to local regulations.

## INSTRUCTIONS FOR SOLUTIONS PACK HANDLING, STORAGE AND STABILITY

The Solutions Pack is ready to use as supplied. Unopened Solutions Pack is stable until the expiration date listed on the label if stored at 4–25°C. After installation, the Solutions Pack is stable on-board the EasyLyte analyzer until the expiration date listed on the label. DO NOT FREEZE.

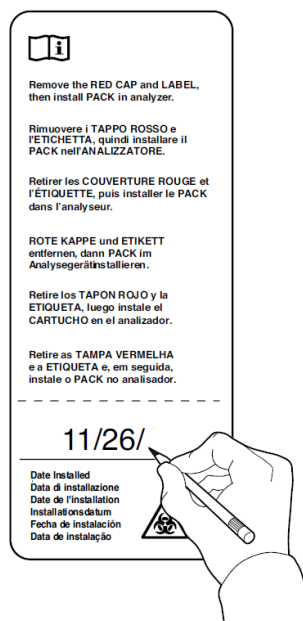
## REMOVAL OF USED SOLUTIONS PACK

Following standard laboratory precautions, grasp the Solutions Pack firmly and pull away from the analyzer. DO NOT SQUEEZE SOLUTIONS PACK. Place the red cap over the four connectors and discard according to local regulations.



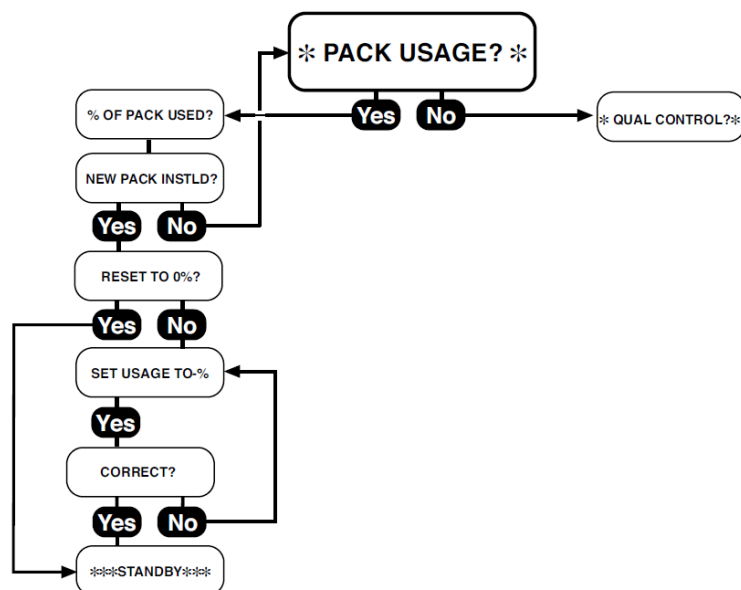
## INSTALLATION OF NEW SOLUTIONS PACK

Remove the new Solutions Pack from the shipping container. Remove the orange label, record the date on the tear off tab and affix to the front of the Solutions Pack. This records the Solutions Pack installation date. Remove the red cap. Install the new Solutions Pack until it fits firmly into the solutions valve.



## RESET COUNTER INSTRUCTIONS

The EasyLyte analyzer has an internal counter, which keeps track of the Solutions Pack usage. The % counter must be set to zero (0) each time a new Solutions Pack is installed. When installing a new Solutions Pack, enter the **SECOND MENU** and select the **\*PACK USAGE?\*** option. Upon answering YES to **\*PACK USAGE?\***, the EasyLyte analyzer displays and prints the percentage of the Solutions Pack. Press YES again and the EasyLyte analyzer software automatically recognizes and selects the pack size (400mL or 800mL). Answer YES to **RESET TO 0%?** for the Solutions Pack you are installing. The EasyLyte analyzer will then automatically enter **\*\*\*STANDBY\*\*\***. When the EasyLyte analyzer is recalibrated, it will automatically purge the fluid lines of the new Solutions Pack to insure a successful calibration.



## ADDITIONAL INFORMATION

See EasyLyte Operator's Manual for detailed information and performance data.



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