

## DATASHEET ELECTRODE, CL

TO LAST LONGER AND REDUCE INTERFERENCES

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## MU9196 OL

**Use:** This electrode cartridge is for *in vitro* use only. It is used for the quantitative determination of chloride on Olympus AU series chemistry analyzers.

**Type:** Silver chloride matrix  
**Life Span:** 2 months or 10,000 tests minimum from installation date.

**Storage:** Store a room temperature in provided packaging.  
**Shelf Life:** 24 months from manufacture date.

-30 C  70 C

### PERFORMANCE CHARACTERISTICS:

**Slope:**  $-52 \pm 2$  mv per decade (serum-typical)  
**Within-run SD:** <0.64  
**Within-run CV:** <0.8%  
**Total SD:** <0.9  
**Total CV:** <1.0%  
**Linearity:** 50-200 mmol/l (serum) 15-400 mmol/l (urine)  
**Linear error:** <0.75% variance due to non-linear response over 50-200 mM sensitivity range.

### INTERFERENCES:

There are definite differences in the way this electrode responds or does not respond to interferences. See Note 3 below.

### CLEANING/MAINTENANCE

Follow OEM recommended procedure(s) in instrument operators manual. Procedure will vary depending on the specific analyzer model.

### PRECAUTIONS:

This electrode has been tested for control recoveries using BioRad Lypocheck serum/urine, Roche Precipath, N.I.S.T. SRM 909C and Vital Scientific Align linearity standards/controls. *Some control shifts may be encountered due to differences in interferences and control constituents!* Example - a control containing salicylates will elevate the values obtained for the Olympus Chloride Electrode, and not for the PVI electrode (the PVI chloride will read lower) - controls containing iodide will cause the PVI chloride to read higher than the Olympus electrode (see note 3 below). PVI recommends that an independent correlation study be considered to confirm the appropriate operational parameters for your laboratory before utilizing this product in compliance with good laboratory practices. Our studies indicate that you can expect a more consistent adherence to literature *coulometric* values. A Pearson Correlation equal to or better than 0.999 was obtained using the controls and standards mentioned above. (See note 1 for further information.)

**Caution:** Exposure to mercury-based solutions (e.g. containing thiomersal, etc.) is not recommended. Exposure to non-recommended substances may degrade/interfere with performance and void the warranty.

### THEORY:

A solid state sensor (silver chloride matrix) detects chloride activity in aqueous, serum, or urine samples through the development of a Nernstian potential difference. An impregnated matrix of graphite, and other proprietary components prevents large protein molecules present in human serum/urine from binding to the sensing surface, reducing interferences and extending the useful lifetime of the electrode.

### REFERENCES:

Friedman, Clin. Chem. 1980, **26**, 4

Young, Clin. Chem. 1975, **21**, 5

Note 1 - A comparison of Olympus and Perphormax Brand Ion-selective Electrode Response; D. Nagahara, *Internal White Paper*; April 2008; Peripheral Visions, Inc.

Note 2 - If electrode is installed or used after 24 months from Manufacture date, Life Span duration shall be considered beginning 2 years from date of manufacture. Expiration date of electrode is 30 months from date of manufacture after which **NO WARRANTY APPLIES**. For Electrode Warranty Term, the number of months or the number of tests shall be used, whichever comes first.

| Substance                | OLYMPUS Chloride<br>RESULT | PERPHORMAX Chloride<br>RESULT |
|--------------------------|----------------------------|-------------------------------|
| Salicylate 200 mg/dl     | Increase 8%                | No Noticeable Effect          |
| Iodide 1mmol             | Increase 3%                | Increase 7%                   |
| Carbonates 50 mmol       | Increase 6%                | Decrease 2%                   |
| Ascorbic Acid 20 mg/dl   | No Noticeable Effect       | No Noticeable Effect          |
| Uric Acid 8 mg/dl        | No Noticeable Effect       | No Noticeable Effect          |
| Urea 25 mg/dl            | No Noticeable Effect       | No Noticeable Effect          |
| Cysteine 20 mmol         | No Noticeable Effect       | No Noticeable Effect          |
| Bromide 3 mmol           | Increase 6%                | Increase 2%                   |
| Bicarbonate 50 mmol      | Increase 6%                | Increase 2%                   |
| Thiocyanate 1.03 mmol    | Increase 6%                | Increase 2%                   |
| Nitrates 130 micro molar | No Noticeable Effect       | No Noticeable Effect          |

\* REFORMULATED LOT NUMBERS WILL END IN "CO" or higher

Note 3 - An in house interference study was conducted using Olympus reagents and comparing interferences to typical substances known to possibly interfere with chloride results. Level of chloride was set at 120 mmol. See table above.