

# DATASHEET

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## CARTRIDGE, SODIUM ELECTRODE



### 7224011 HI

**Use:** This electrode cartridge is for *in vitro* use only. It is used for the quantitative determination of sodium on Hitachi 700 series, 900 series, and Modular Analytics chemistry analyzers.

**Type:** Neutral carrier (*bis*-crown complex) in PVC matrix  
**Life Span:** 10000 tests or 3.5 months from installation\*.

**Storage:** Store a room temperature in provided packaging.  
**Shelf Life:** 1 year from manufacture typical\* 1 C  60 C

#### PERFORMANCE CHARACTERISTICS (TYPICAL WHEN NEW):

|                       |   |
|-----------------------|---|
| <b>Slope:</b>         | 59 ± 2 mv per decade  |
| <b>Within-run SD:</b> | 0.34  |
| <b>Within-run CV:</b> | 0.24%   |
| <b>Total SD:</b>      | 0.60  |
| <b>Total CV:</b>      | 0.43%   |
| <b>Linearity:</b>     | 80-250 mM   |
| <b>Linear error:</b>  | <1.0% variance due to non-linear response over 80-250 mM sensitivity range. |

#### INTERFERENCES:

**Substance Effect**  
Please refer to the references listed at bottom of this sheet for a thorough discussion of interferences seen by *bis*-crown based ion-selective electrodes

#### 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 Beckman Decision, BioRad Lypocheck serum/urine, Roche Precinorm/Precipath, N.I.S.T. SRM 909b and Hi Chem Align linearity standards/controls. *Some control shifts should be expected!* PVI recommends that an independent correlation study be performed to confirm the appropriate operational parameters for your laboratory before utilizing this product in compliance with good laboratory practices. Our studies indicate that in cases studied recovered values were equivalent to recoveries generated by an OEM sodium electrode. See note 1 for further information. **CAUTION:** OEM recommended procedures require that all electrodes including this electrode be removed and replaced with a dummy cartridge(s) prior to running any bleach through the ISE flowpath. Exposure of this electrode directly to bleach will definitely degrade/interfere with its performance and void the warranty.

#### THEORY:

A *bis*-crown impregnated pvc membrane selectively transports sodium ions to and from the diluted sample. The sodium ions that cross the membrane develop a Nernstian potential that is sensed by a silver/silver chloride wire.

#### REFERENCES:

Friedman, Clin. Chem. 1980, **26**, 4  
Young, Clin. Chem. 1975, **21**, 5

Note 1 - A comparison of Hitachi and Perphormax Brand Ion-selective Electrode Response; D. Nagahara, D. Otten; *Internal White Paper*, October, 2004; Peripheral Visions, Inc. A copy of this study can be found on our website at [www.peripheralvisions.com](http://www.peripheralvisions.com).

\* Warranty expires when either use condition is reached or expiration date is past. Warranty on tests and use periods expire at 6 months from shipment if not already consumed.