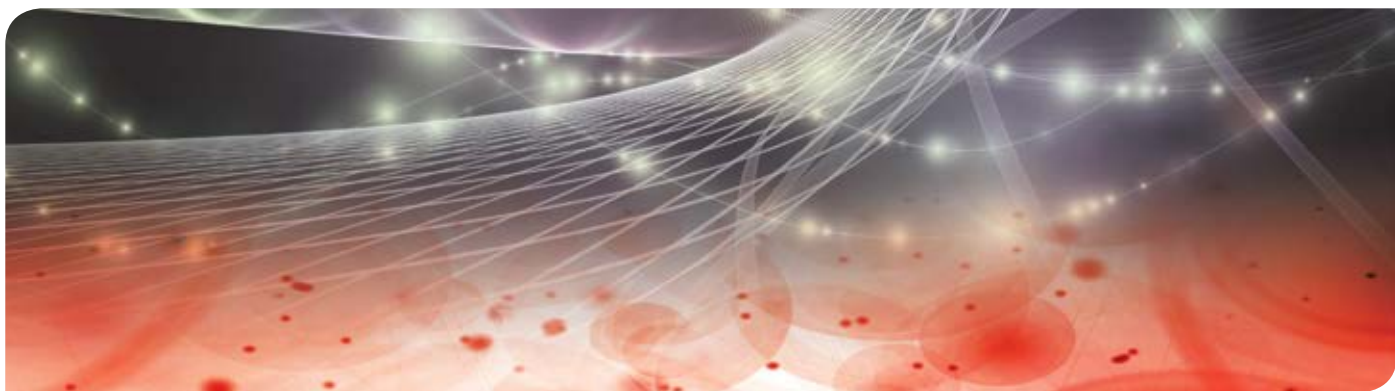


## Liquichek Serum Indices

Pre-analytical instrument monitoring for detection of HIL specimen interferences





## Pre-analytical Variation

Pre-analytical variation is a significant issue in laboratory medicine as laboratory-associated pre-analytical errors account for a large majority of all mistakes. Some regulatory agencies and laboratory medicine associations are emphasizing the importance of reducing pre-analytical errors and International Standard ISO 15189:2012 includes expanded pre-examination procedures.

Specimen interferences are a contributor to pre-analytical variation that affects clinical chemistry testing. Most major chemistry platforms include automated spectrophotometric detection technology to measure the level of common interferences, Hemolysis, Icterus and Lipemia (HIL). These specimen interferences may be caused by disease, inappropriate fasting, sample processing, transportation, and storage.<sup>1</sup>

### Advances in interference monitoring

Liquichek Serum Indices is designed to monitor an instrument's ability to detect hemolyzed, icteric or lipemic (HIL) specimens to help improve detection of pre-analytical errors. Pre-analytical detection of HIL is an important laboratory procedure to increase confidence in patient test results.

### Improve your laboratory's efficiency and reduce pre-analytical errors

Improve confidence in your instrument's performance by using Liquichek Serum Indices to help reduce your laboratory's pre-analytical HIL interference testing errors. Liquichek Serum Indices can also be used as part of the pre-analytical phase of your Individualized Quality Control Plan (IQCP). Based on a US customer survey the majority of respondents would use Serum Indices daily or once a shift, depending on the laboratory's volume of testing.

### Monitors instrument responses in detecting common HIL specimen interferences

- Based on absorbance measurements rather than subjective visual assessment (CLSI C56-A)

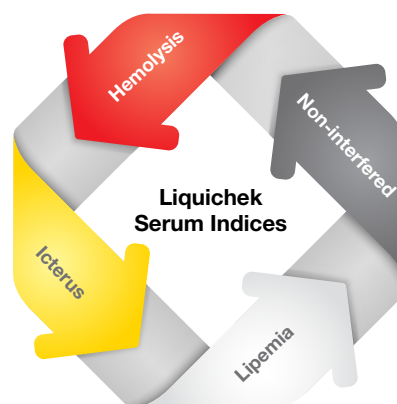
### Important part of laboratory procedure

- Provides greater confidence in reporting patient test results

### Unity Interlaboratory Program for Data Management

- Tracks instrument performance
- Powerful peer group comparison
- Easy-to-read reports

**Liquichek Serum Indices is a product that monitors pre-analytical instrument detection of HIL specimen interferences. It is not intended for use in diagnosis, cure, mitigation, treatment, or prevention of disease.**



### Regulators are taking note:

*ISO 15189:2012 includes expanded pre-examination procedures, and the IFCC\* is recommending standardized "Quality Indicators" in an effort to reduce the volume of pre-analytical errors.<sup>1</sup>*

<sup>1</sup> Mahboobe Ghaedi, PhD and Joe M. El-Khoury, PhD, "Pre-Analytical Variation," *Clinical Laboratory News (CLN)* Vol 43, no. 7 (2016): 26-30.  
\*International Federation for Clinical Chemistry and Laboratory Medicine



## Liquichek Serum Indices

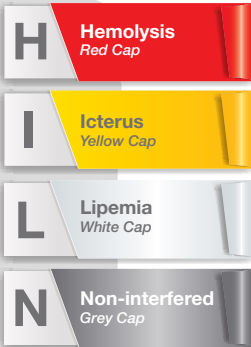
Consists of a four level kit that includes Hemolysis, Icterus, Lipemia and Non-interfered indices. The Hemolysis, Icterus, and Lipemia levels provide a positive response based on increased hemoglobin, bilirubin, and lipoproteins respectively. The Non-interfered level is human based serum and is similar to a pristine clinical patient specimen. This product is unassayed, with representative serum indices values provided as a guide.<sup>2</sup> Values include both quantitative results and qualitative interpretations compatible with major chemistry instrument platforms.

- Liquid, human serum based matrix similar to patient specimen
- 3 year shelf life at -20 to -70°C
- 30 day unopened stability at 2-8°C
- 14 day open-vial stability at 2-8°C
- 28 day frozen aliquot at -20 to -70°C



### Indices

Hemolysis  
Icterus  
Lipemia  
Non-interfered



### Instrument Response Monitoring for HIL Interferences

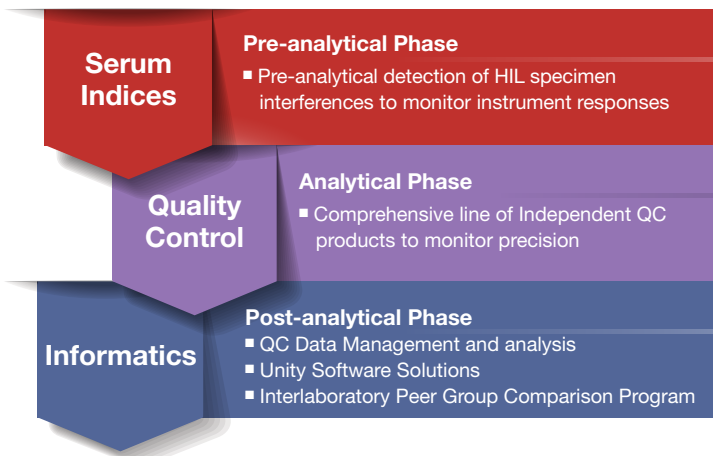
- Sodium is used as the trigger assay per level for Serum Index (HIL) measurement
- Individual levels must be run separately and in sequence HILN
- Non-interfered level is used last in order to flush the probe
- Values include quantitative results and qualitative interpretations

**Representative Values** are provided for HIL when testing is performed on the Siemens Dimension Vista<sup>®</sup> 500 using Sodium as the trigger assay for Serum Index (HIL) measurement

<sup>2</sup>Representative values are provided as a guide as tested on Dimension Vista 500 instrument platform. Based on values in CLSI 56-A. Clinical and Laboratory Standards Institute (CLSI), Approved Guideline—First Edition, CLSI document C56-A (ISBN 1-56238-799-5), Clinical and Laboratory Standards Institute, *Hemolysis, Icterus, and Lipemia/Turbidity Indices as Indicators of Interference in Clinical Laboratory Analysis*, 2012.

# Partner with Bio-Rad for a Total Quality Solution

Bio-Rad offers a comprehensive portfolio of products to cover all phases of clinical chemistry testing and data management



- Liquichek Serum Indices**  
 Pre-analytical detection of HIL specimen interferences to test instrument responses
- Quality Controls**  
 A wide range of QC products to help your lab run smoothly and maintain your quality system
- Unity Interlaboratory Program**  
 QC Data management solutions to help manage QC data and powerful peer group comparisons for greater confidence in patient test results

You can count on our consistent product quality to help assure reliability of patient results, along with expert technical support and customer educational programs.

## Product Accessories

Add dispenser tips to vials for easy handling of Liquichek Serum Indices material, and conveniently store vials in our QC Tray.



## Ordering Information

Cat #	Description
<b>Liquichek Serum Indices</b>	
12002290	Kit (1 of each level) . . . . . 4 x 4 mL
<b>Product Accessories</b>	
987000	Dispenser Tips for Screw Caps . . . . . 100/Package
12000846	Quality Control Tray . . . . . 1 Unit

<p><b>EQAS</b></p> <p>An independent, external assessment of performance in comparison to your peers.</p>	<p><b>Independent QC</b></p> <p>Ongoing, proactive, unbiased daily QC that helps identify errors as they occur or begin to trend.</p>	<p><b>Unity</b></p> <p>QC Data Management tools that help you create a strategy to reduce risk and streamline QC workflow.</p>
---	---	--



**Bio-Rad Laboratories, Inc.**

*For further information, please contact the Bio-Rad office nearest you or visit our website at [www.bio-rad.com/serum-indices](http://www.bio-rad.com/serum-indices)*

Clinical Diagnostics Group

**Web site** [www.bio-rad.com/qualitycontrol](http://www.bio-rad.com/qualitycontrol)
**USA** 1 800 224 6723 **Australia** 61 2 9914 2800 **Austria** 43 1 877 8901 **Belgium** 32 03 710 53 00  
**Brazil** 55 31 3689 6600 **Canada** 1 514 334 4372 **China** 86 21 61698500 **Czech Republic** 420 241 430 532 **Denmark** 45 4452 1000 **Finland** 358 9 804 22 00  
**France** 33 1 47 95 60 00 **Germany** 49 0 89 318 840 **Greece** 30 210 7774396 **Hong Kong** 852 2789 3300 **Hungary** 36 1 459 6100 **India** 1800 180 1224  
**Israel** 972 3 9636050 **Italy** 39 02 216091 **Japan** 81 3 6361 7070 **Korea** 82 2 3473 4460 **Mexico** 52 55 5488 7670 **The Netherlands** 31 318 540666  
**New Zealand** 64 9 415 2280 **Norway** 47 23 38 41 30 **Poland** 48 22 3319999 **Portugal** 351 21 472-7700 **Russia** 7 495 721 1404 **Singapore** 65 6415 3170  
**South Africa** 27 11 442 85 08 **Spain** 34 91 590 5200 **Sweden** 46 8 555 127 00 **Switzerland** 41 0 26 674 55 05 06 **Taiwan** 886 2 2578 7189  
**Thailand** 662 651 8311 **United Kingdom** 44 0 20 8328 2000