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T.S. Refractometer - Royal Oak

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

The T.S. Meter is a Goldberg Refractometer, which has been designed specifically for use in the medical and paramedical fields. Although the actual measurement is refractive index, the scales of the instrument have been calibrated in terms of specific gravity for urine, and protein concentrations of plasma or serum (gms/dL). The value is read on the appropriate scale as seen through the eyepiece where the sharp boundary between the dark and the light fields crosses the scale.

II. SPECIMEN COLLECTION AND HANDLING:

Determinations require only a drop of fluid sample.

III. QUALITY CONTROL (QC):

A. A STANDARD SOLUTION OF NACL WILL BE CHECKED MONTHLY AND RECORDED ON QC SHEETS and in UNITY. Dissolve 2.8 grams of dessicated NaCl in a 100 mL volumetric flask containing approximately 50 mL deionized water. Quantity sufficient (QS) to 100 mL with deionized water. Stable indefinitely. Refrigerate.

B. Expected specific gravity (s.g.) for this QC is 1.014-1.016.

IV. PROCEDURE:

A. Rotate the instrument to a horizontal position, and place the sample liquid on the exposed portion on top or bottom of the measuring prism, so that the liquid will be drawn into the space between the prisms by capillary action.

B. To take a reading, keep the cover plate in contact with the prism and point the instrument toward the illuminating light source. The instrument should be tilted with respect to the light source until best results are obtained.

C. Bring the scale seen in the eyepiece into best focus by rotation of the eyepiece.

D. Make the reading on the appropriate scale at the point where the dividing line between bright and dark fields crosses the scale.

E. Use a soft cloth or soft tissue moistened with distilled water for wiping the prism. Dry the prism with a soft cloth or tissue.

V. INTERPRETATIONS:

A. If the reading is greater than 1.035, then report out > 1.035 for specific gravity.

VI. REFERENCE RANGE:

1.001-1.030

VII. REPORTABLE RANGE:

Specific Gravity 1.000-1.035

VIII. REFERENCES:

1. American Optical Manual – T.S. Refractometer

Approval Signatures

Step Description	Approver	Date
Medical Director	Ann Marie Blenc: System Med Dir, Hematopath	2/1/2023
Policy and Forms Steering Committee Approval (if needed)	Colette Kessler: Mgr, Division Laboratory	1/27/2023
Policy and Forms Steering Committee Approval (if needed)	Gail Juleff: Project Mgr Policy	1/26/2023
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