

OREGON HEALTH & SCIENCE UNIVERSITY  
Hospitals and Clinics  
Point of Care

**pH, Urine by Nitrazine Paper**

Principle

The determination of urine pH by using Nitrazine paper is a useful screening test for determining the acid-base status of a patient. Acidosis may result from starvation diets, severe diarrhea, diabetes mellitus, and respiratory diseases. Alkalosis may result from excess alkali ingestion, severe vomiting, and respiratory hyperventilation. A urinary tract infection associated with urea-splitting organisms (Proteus or Pseudomonas) may also cause alkaline urine.

Specimen Requirements

1. Urine.

Interferences

1. None.

Reference Range

1. Normal urine has a pH range of 5 to 8.

Alert Values

1. None.

Quality Control

1. Quality Control (QC) will be performed by the POC staff every six months on all Nitrazine paper. pHydrion buffers obtained from the Core Laboratory will be used.
2. Tear off pieces of Nitrazine paper of the desired length.
3. Apply 1 drop of buffer to the strip of Nitrazine paper. Shake off excess fluid.
4. Immediately match the strip color with the closest color on the dispenser color chart.
5. Record date, initials, department, Nitrazine paper lot number and expiration date, pHydrion buffer lot number and expiration date, and QC results on the QC logsheet kept in the POC Office.
6. Buffer pH results must be identical to manufacturer result.

7. If QC fails, repeat. If QC fails a second time, do not use Nitrazine paper for patient testing.
8. Repeat for subsequent buffers if necessary.

### Procedure

1. Tear off a piece of Nitrazine paper of the desired length.
2. Apply patient sample to Nitrazine paper.
3. Immediately match the strip color with the closest color on the dispenser color chart.

### Results Reporting

1. Record patient result in patient's chart.
2. Abnormal results must be confirmed by sending a specimen to the Core Laboratory. Specimen must be greater than 1mL for analysis.

### Reagents

1. Nitrazine pH paper:
  - a. Stable at room temperature in the original container until 2 years from open date.
  - b. Store out of direct light.
2. pHDrion Buffers:
  - a. Stable at room temperature for 1 month from the date they are made.

### References

1. Todd and Sanford, Clinical Diagnosis and Management by Laboratory Methods, 16<sup>th</sup> ed., vol 1, pp. 559-631.
2. Freeman and Beeler, Laboratory Medicine Clinical Microscopy, 1974, 99. 166-377.
3. Free, A. and Free, H. Urinalysis in Clinical Laboratory Practice, 1975, p. 206.