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**VET-BUN REAGENT STRIPS**
**Test for Urea Nitrogen in Whole Blood**

## VET-BUN REAGENT STRIPS

For the determination of urea nitrogen in whole blood.

## INTRODUCTION

Urea is the major end product of protein nitrogen metabolism. It is synthesized in the liver from ammonia, which is produced by amino acid deamination. The determination of blood urea nitrogen is an important index of kidney function. Impaired renal function or increased tissue protein breakdown are associated with increased urea nitrogen levels, whereas liver damage or pregnancy are associated with decreased levels.[1]

The dry chemical pathway utilized in the VET-BUN Reagent Strips has been described by Ormerod, T.P. in 1968.[2] This procedure is a quick, convenient way to semi-quantitatively approximate Blood Urea Nitrogen levels in whole blood. **VET-BUN Reagent Strips utilize Patent Pending enhancers yielding superior accuracy and precision.**

Care must be taken to follow the directions in this insert to obtain accurate results. Any discrepancies between normal test results should be conformed by more accurate laboratory methods. VET-BUN Reagent Strips do not replace laboratory methods.

## PRINCIPLE

The chemical principle behind these strips utilizes urease to hydrolyze the blood urea to carbon dioxide and ammonium hydroxide. The ammonium hydroxide increases the alkalinity and the change in pH is indicated by color change of the Bromthymol Blue (BTB) indicator.

$$\text{Urea} + H_2O \xrightarrow{\text{Urease}} 2\,NH_4OH_{(aq)} + CO_2$$

## REAGENT COMPOSITION

The reagent for the VET-BUN Reagent Strips contains the following:
1. Urease: 9.6 I.U.
2. BTB: 53 mcg

## WARNINGS AND PRECAUTIONS

1. For *in vitro* diagnostic use only.
2. Urease and BTB Indicator not be ingested.
3. Reagents may be irritating to the skin. Avoid contact.
4. Whole Blood specimens should be considered infectious and handled appropriately.

## STORAGE AND HANDLING

NOTE: All warnings, precautions, and proper storage procedures must be followed to avoid deterioration of VET-BUN Reagent Strips.
1. Store bottle at temperatures between 15°-30°C (59°- 86° F) and out of direct sunlight.
2. All unused strips must store in original bottle. Do not transfer to any other container.
3. Do not remove the white packet (desiccants) from bottle. Replace cap quickly and tightly after use.
4. Do not touch test areas of the strip.
5. Protect against exposure to light, moisture, and heat which will alter reagent activity.

## SPECIMEN COLLECTION

A large drop of capillary or venous blood is necessary to completely cover reagent area. Anti-coagulants, with the exception of those containing fluoride or ammonium salts, will not affect test result. Specimen must be applied to strip at room temperature. These strips are not intended for use with serum or plasma.

## DIRECTIONS

1. Remove from the bottle only enough strips for immediate use and replace cap tightly.
2. Apply a large drop of venous or capillary blood to completely cover reagent pad.
3. Wait exactly 90 seconds using a stop-watch to keep time.
4. After 90 seconds, wash off blood from strip with a sharp stream of water from the wash bottle, for 1 to 2 seconds.
5. Immediately after washing, compare pad to color chart and record result. Care must be taken to read results before colors fade.

## RESULTS

Results are given directly in mg urea nitrogen /dL on color chart. To convert to mg urea / dL multiply urea nitrogen value by 2.14. Normal values for BUN vary between species and should be verified by laboratory determined normal range values.

## MATERIALS PROVIDED

1. One bottle containing 50 strips of VET-BUN Reagent Strips
2. A color chart for reading test results is printed on the bottle label

## OTHER REQUIRED MATERIALS

1. Stop-watch for precise timing
2. Wash bottle to quickly wash blood off strip

## REFERENCES


1. Henry, J.B., Todd, Sanford, Davidsohn: *Clinical Diagnosis.. and Management by Laboratory Methods.,* 16th ed., W. B. Saunders and Co., Philadelphia, PA. p260 (1974).
2. Ormerod, T.P.: A rapid bedside method for measuring blood urea; Practitioner 201: 921, 1968.


**If you have a problem or question, please call our Customer Service Department at toll free 1-800-222-9880.**