

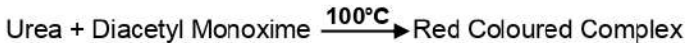
**Reagent kit for quantitative estimation of Urea in Serum, Plasma, or Urine.**

**DIAGNOSTIC SIGNIFICANCE:**

Increased urea levels can occur in liver diseases, congestive heart failure, diabetes, infections and in diseases which impair kidney functions. It is also increased in adrenocortical insufficiency, acute intestinal occlusion; various poisonings, shocks, urine retention, and raised protein break down. Decreased levels are seen in malnutrition, hepatic failure & pregnancy.

**PRINCIPLE:**

Urea in an acidic medium condenses with Diacetyl Monoxime at 100°C to form a red coloured complex. Intensity of the colour formed is directly proportional to the amount of Urea present in the sample. The intensity of colour produced is measured photometrically at 520 nm (510-530 nm) or GREEN Filter.



**SPECIMEN COLLECTION:**

Serum, Plasma or Urine is required.  
Urine should be of 24 hours collection. Dilute the urine specimen 1:20 with distilled / deionised water before the assay. Multiply the final results by 20.

**KIT PRESENTATION:**

PACK SIZE	2 X 50 ml	4 X 50 ml
R1-Urea (DAM Reagent)	1 X 50 ml	2 X 50 ml
R2-Urea (Acid Reagent)	1 X 50 ml	2 X 50 ml
Urea Standard (40mg/dl)	1 X 01 ml	1 X 02 ml

**PREPARATION OF WORKING REAGENT:**

R1-Urea (DAM Reagent) & R2-Urea (Acid Reagent) are Ready To Use.

**REAGENT STORAGE & STABILITY:**

All reagents included in the kit are stable at RT until the expiry date stated on the label.

**ASSAY PARAMETERS:**

Reaction	: End point	Zero Setting	: Reagent Blank
Wavelength	: 520 nm (510-530)	Sample Vol.	: 10 µl
Filter	: GREEN	R1 + R2 Vol.	: 1.0ml + 1.0ml
Incub. Temp	: 100 °C (Boiling)	Std Conc.	: 40 mg/dl
Incubation	: 10 minutes	Linearity	: 200 mg/dl

**PROCEDURE:**

Pipette into TT	Blank	Standard	Test
R1-Urea (DAM Reagent)	1.0 ml	1.0 ml	1.0 ml
R2-Urea (Acid Reagent)	1.0 ml	1.0 ml	1.0 ml
Urea Std (40 mg/dl)	--	10 µl	--
Sample (Test)	--	--	10 µl
Distilled Water	10 µl	--	--

Mix well and keep the test tubes in boiling water (100°C) for 10 minutes. Cool for 5 minutes under running tap water and measure the absorbance of the Standard (Abs. Std) and Test Sample (Abs. Test) against the Reagent at 520 (510-530) nm or GREEN filter.

**STABILITY OF REACTION MIXTURE:**

The colour of final reaction mixture is stable for 30 minutes.

**CALCULATION:**

$$\text{Serum / Plasma Urea (mg / dl)} = \frac{\text{Abs. Test} \times 40}{\text{Abs. Std.}}$$

$$\text{Urine Urea (gms/liter)} = \frac{\text{Abs. Test} \times 40 \times 20}{\text{Abs. Std.} \times 100}$$

$$\text{BUN Concentration (mg/dl)} = 0.467 \times \text{Urea (mg/dl)}$$

$$\text{Urea concentration (mg/dl)} \times 0.167 = \text{Urea (mMol/L)}$$

**NORMAL VALUES:**

Serum/Plasma Urea : 10 - 40 mg/dl  
Serum/plasma BUN : 4.6 - 18 mg/dl  
Urine Urea : 20 -35 gm / 24 hrs.  
Each laboratory should establish its own reference range.

**LINEARITY:**

The method is linear up to 200 mg/dl. For Urea concentration higher than linearity limit, mix one volume of sample with one volume of 0.9 % saline and repeat the assay. Multiply the results obtained by two.

**REFERENCE:**

1. Fearon, W.R. (1939) Biochem.J. 33:902.
2. Martinek, R.G. (1969) J. AM. Med. Tech. 31:678.
3. Wybenga, D.R. (1971) Clin. Chem. 17:891.

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Expiry Date



In-Vitro Diagnostics Use



Storage



Mfg. Date



Batch Number



Catalogue Number



See Package Insert