



## UREA KIT

(DAM method)

For the determination of Urea in serum, plasma and urine.

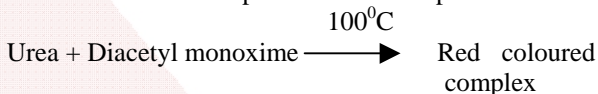
(For Invitro Diagnostic Use only)

### Summary

Urea is the end product of the protein metabolism. It is synthesised in the liver from the ammonia produced by the catabolism of amino acids. It is transported by the blood to the kidneys from where it is excreted. Increased levels are found in renal diseases, urinary obstructions, shock, congestive heart failure and burns. Decreased levels are found in liver failure and 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.



### Normal reference values

Serum, Plasma : 14 – 40 mg/dl

Urine : upto 20 g/Liter

It is recommended that each laboratory establish its own normal range representing its patient population.

**Contents** 50 Tests  
 R1 : Acid Reagent 50 ml  
 R2 : Dam Reagents  
 R3: Urea Standard (50 mg/dl) 5 ml

### Storage /Stability

All reagents are stable at R.T. till the expiry mentioned on the labels.

### Reagent Preparations

Reagents are ready to use. Do not pipette with mouth.

### Sample material

Serum, plasma or urine. Urine should be of 24 hrs collection. Dilute the urine specimen 1:20 with distilled/deionised water before the assay. Urea is reported to be stable in serum for 5 days at 2-8°C.

### Procedure

Wavelength/filter: 505 nm(Hg 520 nm)/ Green

Temperature :. 100°C

Light path : 1 cm

Pipette into clean dry test tubes labeled as Blank (B), Standard (S) and Test (T):

Addition Sequence	B (ml)	S (ml)	T (ml)
Distilled water	1.0	1.0	1.0
Acid Reagent (R1)	1.0	1.0	1.0
DAM Reagent (R2)	1.0	1.0	1.0
Distilled water	0.02	-	-
Urea Standard (R3)	-	0.02	-
Sample	-	-	0.02

Mix well and keep the test tubes in boiling water (100°C) for 10 min. Cool under running tap water and measure the absorbance of the Standard (Abs.S), and Test Sample (Abs.T) against the Blank.

### Calculations

$$\text{Urea in mg/dl} = \frac{\text{Abs. T}}{\text{Abs. S}} \times 50$$

$$\text{Urine Urea in g/Litre} = \frac{\text{Abs. T}}{\text{Abs. S}} \times 8$$

### Linearity

This procedure is linear upto 70 mg/dl. If values exceed this limit, dilute the serum with distilled water and repeat the assay. Calculate the value using the proper dilution factor.

### Note

**The presence of ammonia does not interfere in this test.**

System Parameters			
Reaction	: End Point	Interval	: ----
Wavelegh	: 505 nm	Sample Vol.	: 0.02 ml
Zero Setting	: Reagent Blank	Reagent Vol.	: 3.00 ml
Incub. Temp.:	100°C	Standard	: 50 mg/dl
Incum. Time	: 10 min	Factor	: ----
Delay Time	: ----	React.Slope	: Increase
Read Time	: ----	Linearity	: 70 mg/dl
No. of read.	: ----	Units	: mg/dl

### References

Fearon, W.R. (1939) Biochem. J. 33 : 902

Martinek, R.G., (1969) J. Amer. Med. Tech. 31 : 678

Wybenga, D.R. (1971) Clin. Chem 17 : 891