# **AMINES AND UREA**

28-04-2021 Lecture-9 Deg-I (Hons.)

# Topic - Properties & Uses of Urea

#### PHYSICAL PROPERTIES

- \* usea is a non-toxic, colourless, crystalline solid.
- \* Melting Point = 132°C
- \* It is soluble in water and alcohol but insoluble in non-hydroxylic solvent such as ether, chloroform or benzene.

### **CHEMICAL PROPERTIES**

#### 1. SALT FORMATION

$$H_2N - U_{-NH_2} + H_{NO_3} - H_{2N} - U_{-NH_2} = 0.41$$
 $H_2N - U_{-NH_2} + COOH$ 
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2. Reaction with the Thionyl Chloride.

2.

$$H_2N - \overset{0}{C} - NH_2 + SOC_2 \longrightarrow H_2N - C \equiv N + SO_2 + HUH$$
Urea

Cyanamide  $H_2O$ 

## 3. Reaction with Hydrazine

$$H_2N - U_{-NH_2} + U_{-N-NH_2} \rightarrow H_{2N} - U_{-N-NH_2} \rightarrow H_{2N-U_2} + U_{-N-NH_2} \rightarrow H_{2N-U_2} \rightarrow H_{2N-U_2}$$

#### 4. Reaction with Acid chloride

### **USES OF UREA**

Urea is used :-

Properties & Uses
Of Urea Completed.

- 1. In agriculture as a fertilizer.
- 2. As a protein supplement in Cattle feed
- 3. In the manufacture of barbiturates.