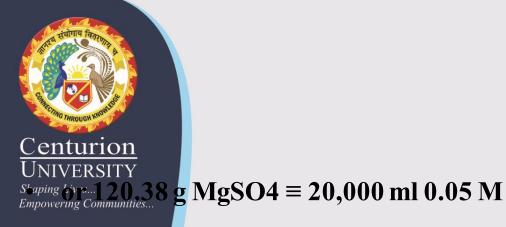


# ESTIMATION OF MAGNESIUM SULPHATE, AND CALCIUM GLUCONATE

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### Centurion UNIVERSITES FIMATION OF MAGNESIUM SULPHATE Shaping Lives... Empowering Communities...

- MATERIALS REQUIRED: Magnesium sulphate heptahydrate: 0.3 g; strong ammonia-ammonium chloride solution (6.75 g NH4Cl in 74.0 ml strong ammonia solution add water q.s. to produce to 100 ml); 0.05 M disodium edetate; Mordant Black II mixture (mixture of 0.2 part mordant black II with 100 parts of NaCl): 0.1 g.
- <u>EQUATIONS</u>: The assay of MgSO4.7H2O is based upon the reactions designated by the following equations:
- $Mg2++[H2X]2-\rightarrow [MgX]2-+2H+$
- or MgSO4.7H2O  $\equiv$  Mg2+  $\equiv$  Na2H2X, 2H2O



• or 0.00602 g MgSO4 = 1 ml of 0.05 M Disodium Edetate

#### • PROCEDURE:

Weigh accurately about 0.3 g of magnesium sulphate heptahydrate and dissolve in 50 ml of DW. Add to it 10 ml of strong ammonia-ammonium chloride solution, and titrate with 0.05 M disodium ethylene diamine tetracetate employing 0.1 g of mordant black II mixture as indicator, until the pink colour is discharged from the blue. Each ml of 0.05 M disodium ethylene diamine tetracetate is equivalent to 0.00602 g of MgSO4.



#### Shaping Lives...STANDARDIZATION OF 0.05 M DISODIUM EDETATE SOLUTION

<u>Procedure</u>: Weigh accurately about 0.8 g of granulated zinc, dissolve by gentle warming in 12 ml of dilute hydrochloric acid and 5 drops of bromine water. Boil to remove excess bromine, cool and add sufficient DW to produce 200 ml in a volumetric flask. Pipette 20 ml of the resulting solution into a flask and neutralize carefully with 2 N sodium hydroxide. Dilute to about 150 ml with DW, add to it sufficient ammonia buffer (pH 10.0) to dissolve the precipitate and add a further 5 ml quantity in excess. Finally add 50 mg of Mordant Black II mixture and titrate with the disodium edetate solution until the solution turns green. Each 0.003269 g of granulated zinc is equivalent to 1 ml of 0.05 M disodium ethylenediaminetetracetate.

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#### **CALCULATIONS:**

Empower of Contract  $\equiv Zn2 + \equiv 1000 \text{ ml M}$ 

- or 65.38 g Zn = 1000 ml M
- or  $3.269 \text{ g Zn} \equiv 1000 \text{ ml } 0.05 \text{ M}$
- or 0.003269 g Zn  $\equiv$  1 ml of 0.05 M Disodium ethylenediaminetetracetate.

ESTIMATION OF CALCIUM GLUCONATE is same as magnesium sulphate.



### THANK YOU