

## Studying the effect of nitrogen content when Preparation (CMS PAAM –PMBA) graft copolymer using redox system

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### Abstract

In order to create grafting polymer, at first, CMS was prepared with starch and chloroacetic acid in an alkali – methanol media, and Carboxymethyl starch (CMS) was prepared by different DS, then AAM was grafted on CMS by redox system using oxidant and reductant. For investigation of the effect of reaction variables on nitrogen content N%, the synthetic conditions were systematically optimized through studying the influential factors.

### Research background

In order to study the nitrogen content N% for a crosslinking polymer (CMS PAAM – PMBA) prepared by the redox system, Kjeldahl method was used

### Research objective

Studying the effect of nitrogen content (N%) of (CMS PAAM –PMBA) which prepared by using the redox system

### Research importance

Studying the nitrogen content N% by to a Kjeldahl method of a grafting polymer by using

- 1- Different DS of CMS
- 2- Using redox system on CMS with AAM to make crosslinking substance

### Methodology

Experimental analytical approach

### Research results

The reactions of grafted copolymer variables that affect the nitrogen content N% of the grafted polymer were studied. It is seen that with increasing the amount of CMS, the grafting decreasing, and that may have attributed to the increasing of the carboxy groups and hydrophilic group which the residue monomer concentration in the reaction mixture which leads to increasing of radical centers, causing high crosslinking points grafted polymer.

The higher nitrogen content of CMS PAAM –PMBA graft copolymer, APS =0.08g, Sod thiosulfate =0.5g, MBA= 0.8 g, AAm = 5 g, water = 1 ml, H<sub>2</sub>SO<sub>4</sub> = 3 ml, temp. (90°C) and Time = until reaction completes (1.50 min)

**Key words:** Carboxymethylation, DS, CMS, grafting polymerization, redox system and nitrogen content N%