

# Polyacrylamide (PAA) Copolymer as a Super Absorbent Polymer

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**Abstract:** *This work is devoted to the study of the synthesis, properties and practical applications of the class of superabsorbent polymers based on the acrylate Polyacrylamide (PAA). Solution, emulsion/gel polymerization techniques were used for the synthesis. Each absorbent was characterized primarily by its equilibrium water absorption capacity and absorption rate. The swelling characteristics of the polymers were evaluated in terms of changes in polymerization variables, which include the type and amount of crosslinker, monomer composition and polymerization process, temperature, initiator concentration, monomer concentration, mixing speed, and product particle size. The rapidly growing nanotechnology has led to further exploration of SAP and SAPC for biomedical, biotechnology, and advanced technology applications. Examples of SAP and SAPC research work published in peer-reviewed, peer-reviewed articles are listed..*

**Keywords:** PAA superabsorbent polymers; swelling properties of SAP. Superabsorbent polycomposites; Water absorption capacity; cross-linking reaction;

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