

## STUDY OF IRRADIATION EFFECTS ON HIGHLY CONCENTRATED PVP HYDROGELS

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Hydrogels dressings usually suffer from lack of mechanical properties for clinical and patient carelessness use. This lack of mechanical properties is attributed to high degree of hydration of the membrane under fabrication procedures. Therefore, looking for better handling properties, concentrated membranes is the most natural way to go. The objective of this work is to study the membrane structure of hydrogel prepared with PVP concentration as high as 60%, using a patented technique. The results showed that the tensile strength increase from 0.06 to 0.2 MPa as the PVP concentration was increased from 30 to 50%. Flat plateaus were also observed, mainly from 50 to 60%. Swelling degree decrease on increasing PVP concentration. Crosslinking density was calculated and was compared with data from transmission microscopy. A clear relation between both results was found, demonstrating that the crosslinking mechanism was essentially dependent on PVP concentration and not in the concentration of water radiolytic products as previously considered.