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## PREPARATION OF BIO-COMPATIBLE AND UV-CURABLE ELASTIC MATERIALS WITH HEMA AS A DILUENT

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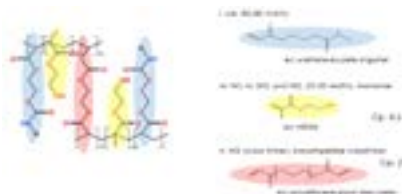
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The biocompatible photo-curable elastic materials were synthesized with urethane acrylate oligomer, 2-hydroxyethyl methacrylate (HEMA), and polyethylene glycol diacrylate (PEGDA) using 2-Hydroxy-4'-(2-hydroxyethoxy)-2-methylpropiophenone (Irgacure 2959) as an initiator. We could obtain elastic materials with different properties such as softness, tensile strength, and elasticity by changing the input molar ratio of HEMA, urethane acrylate with PEGDA. Generally, urethane oligomer with a higher PEGDA ratio has higher elasticity and higher viscosity properties. On the other hand, as the content ratio of HEMA increases in urethane oligomer, the viscosity and physical properties decrease. We studied various properties such as tensile properties, hardness, biocompatible properties, and viscosity to find the critical point of higher elasticity and lower viscosity according to HEMA/PEGDA ratio. Also, the chemical structures of the synthesized polymers were characterized using Fourier Transform Infrared spectroscopy (FT-IR) and nuclear magnetic resonance (NMR).



### Recent Publications

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### Biography

Ji Eun Jang is currently a graduate student in Chungang University and a researcher in Korea Institute of Industrial Technology (KITECH) at the same time. Her major is integrative engineering and she is consistently learning how to do experiments and manage novel materials. She is currently researching biocompatible materials applied for 3D printing. In KITECH, she held experiments regarding superabsorbent polymers and 3D printing resins. This study aimed for innovative experimental results such as biocompatibility and high elasticity for the application of 3D printing materials.

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