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Investigation of Solvent Effect on Viscosity of Lubricant in Disposable Medical Devices

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Abstract : The effects of type and amount of solvent on lubricant which is used in disposable medical devices are investigated in this article. Two kinds of common solvent, n-Hexane and n-Heptane, are used. The mechanical behavior of syringe has shown that n-Heptane has better mixing ratio and also more effective spray process in the barrel of syringe than n-Hexane because of similar solubility parameter to silicon oil. The results revealed that movement of plunger in the barrel increases when pure silicone is used because non-uniform film is created on the surface of barrel, and also, it seems that the form of silicon is converted from oil to gel due to sterilization process. The results showed that the convenient mixing ratio of solvent/lubricant oil is 80/20.

Keywords : disposal medical devices, lubricant oil, solvent effect, solubility parameter
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