Abstract

The size and shape of bulk solid particles is an important factor which affects its flow and consolidation behaviour. In this thesis, the properties of sorbitol size fractions ranging from 80 to 500 μm were studied by using helium pycnometry, optical microscopy and changes in the volume of the powder bed during the initial phase of consolidation. A significant influence ($p \leq 0.01$) of the sample drying on the density of solid sorbitol was detected. Porosity of sorbitol size fractions ranged from 56.6 to 62.3%; with the increasing in the particle size the porosity decreased. For the consolidation of the powder bed, the first 10 taps were critical when the volume decreased most dramatically. This is particularly evident for the size fraction of 100 μm and 158 μm.