Abstract

In this study, a hardness tester was modified by attaching a metal blade to its testing area to obtain the minimum forces required to subdivide tablets along their diameters (*F'*). Moreover, the tensile strengths of subdividing tablets (*TS'*) were calculated. Tablets of microcrystalline cellulose (MCC) weighing 0.5 g were produced at applied compression pressures of 21, 31, 41, 50, and 60 MPa. In addition, tablets of Ludipress®, and a 5:2 mixture of paracetamol to MCC weighing 0.7 g were produced at applied compression pressures of 77, 116, 154, 193, and 232 MPa. It was found that *F'* increased as the applied compression pressure used to produce the tablets increased until a maximum value was reached. This maximum value was at around 100 N for MCC and Ludipress® tablets and at around 76 N for paracetamol/MCC tablets. Moreover, a maximum value of *TS'* was reached at a porosity of 0.37 for MCC, 0.15 for Ludipress®, and 0.11 for paracetamol/MCC tablets. The maximum *TS'* values were at around 1.5 MPa for MCC and Ludipress® tablets and at around 0.9 MPa for paracetamol/MCC tablets. Therefore, both inter particulate bonding (tablet strength) and porosity (packing) affected the magnitudes of *F'* and *TS'*.