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Assessment of Strength of Granules Prepared in Rotary Drum Granulator Based on their Residence Time

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Abstract : Various factors which affect the production and strength of granules prepared in Rotary drum granulator are particle size, residence time (Time of Rotation), Moisture and Binder. To get better production and strength of granules several experiments are carried out with varying time of rotation by keeping constant moisture and feed quantity. Less time of rotation leads to less formation of granules as nucleation plays an important role and more time of rotation leads to large size of granules, as in this case layering and coalescence plays major part. To determine the strength of granules a very important test i.e. Drop Test is done with repeated droppings and with varying height of dropping for different size of granules at wet and dried conditions. From the experiments and drop tests on different size of granules at different conditions, an optimum condition of time of rotation for feed is obtained which is responsible for more production and added strength of Granules.

Keywords: Strength of Granules, Time of Rotation, Moisture, Nucleation, Layering, Coalescence, Rotary drum granulator, Drop Test.

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