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Tablet manufacturing involves rigorous quality control measures to guarantee the final product meets regulatory standards for safety, effectiveness, and quality. This process is divided into two primary categories: in-process tests and finished product assessments. In-process inspections monitor production stages to prevent defects and ensure consistency. One such test aims to evenly distribute active pharmaceutical ingredients (API) within powder blends by sampling and analyzing different batch segments using techniques like HPLC or NIRS. Quality checks also evaluate granule quality, assessing particle size distribution, moisture content, and bulk density through methods including sieve analysis, Loss on Drying, and Karl Fischer titration. Furthermore, these inspections ensure tablets are compressed according to specifications, as determined by hardness tests, weight variation assessments, and thickness measurements using instruments like micrometers. Quality control in the tablet coating process involves measuring coating thickness and uniformity with tools such as micrometers or non-destructive testing equipment. Abrasion resistance is evaluated through mechanical agitation in a friability tester, while drug release rates are measured by placing tablets in a dissolution apparatus. Finished product quality checks verify that each tablet meets regulatory requirements before distribution. These assessments confirm the identity of the tablet through chemical reactions and spectroscopy techniques such as IR or UV Spectroscopy. The concentration of API is typically determined using HPLC or UV Spectroscopy, ensuring each tablet contains the correct amount within specified limits by analyzing samples from a batch. Tablet Testing Methods for Quality Control To ensure the quality and consistency of tablets, various tests are conducted to evaluate their physical and chemical properties. Our Exponent Texture Analyser software features a wide array of test methods specifically designed for POWDER AND GRANULE PRODUCTS, allowing for streamlined testing and analysis. With just one click, you can access a range of measurements that include: Powder Flow Analysis, Cohesion, Caking Potential, Flow Speed Dependence, Compaction, and Granule Compaction to assess compressibility and friability. Additionally, we offer Single Particle Mechanical Strength testing. When necessary, we even develop new test solutions from scratch, as seen with the Powder Flow Analyser and Unconfined Yield Stress Measurement System. Our commitment is to providing a comprehensive testing solution for powder and granule products, starting from the beginning.

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