

SUGAR COATING

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Sugar coating remains the most elegant of coatings and offers other desirable features. Lately, sugar coating of pharmaceutical solid dosage forms is enjoying a renewed interest. There is increased activity associated with some new techniques for simplifying and automating the sugar coating process.

In the early days of sugar coating, the complex series of coating steps required excessive commitment of space, equipment, time, materials and labor to achieve a satisfactory product. In addition, the final product weighed twice as much as the starting core. The process frequently required 2 weeks to complete with the product manually moved in and out of the pans at least 4 times and frequently 5 or 6 times.

Recently we have sugar coated a 250 mg core in a 48" Accela-Cota in a very efficient run. Using the Thomas Engineering equipment and coating suspension from Warner Jenkinson the coating was completed in five hours with no removal from the pan. The coating suspension was automatically delivered using .090 inch tips on the spray guns and 10 PSI atomizing air. The sub-coat was carried out with a 76% sugar syrup that was colored with Spectraspray at 6% of the syrup. (As most other color dispersions are used at 12% of the syrup, Spectraspray reduces the use of color dispersion by 50% for sugar coating).

The final product was removed from the Accela-Cota for polishing. The cores were not sealed and the sub-coating was clean and efficient so that color coating could follow immediately. This product was handled twice and could be completed in one shift of operating time. The final product weighed only 50% more than the cores.

We are pursuing the development of the sugar coating process to further reduce time, material costs and handling for this most elegant and desirable form of coating.

The Sugar Coating Process

Sugar coating is a multi-step process which can be subdivided into the following stages:

Sealing

Applied directly to the tablet core to protect it from the water that is used in the remainder of the coating process.

Sub-coating

The actual sugar coating which leads to a .50-100% weight increase. This build-up stage is also called "rounding."

Smoothing

Additional smoothing prior to color coating can also be applied to opacify the sub-coat to promote a brighter final color.

Coloring

The most critical step of sugar coating, it consists of the multi-step application of syrup containing the required color (dye or pigment).

Polishing

Imparts the required gloss to the final product.

In many applications, the "sealing" and/or "smoothing" steps may be omitted.

The process efficiency gains are realized mostly in the "rounding" and "coloring" stages where the drying efficiency of the Accela-Cota permits shorter "dose/distribute/dry" cycles.

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