DUPONT™

AQUACOAT® ECD: CRITICAL FORMULATION ATTRIBUTES OF COATING LEVEL

Technical Memorandum

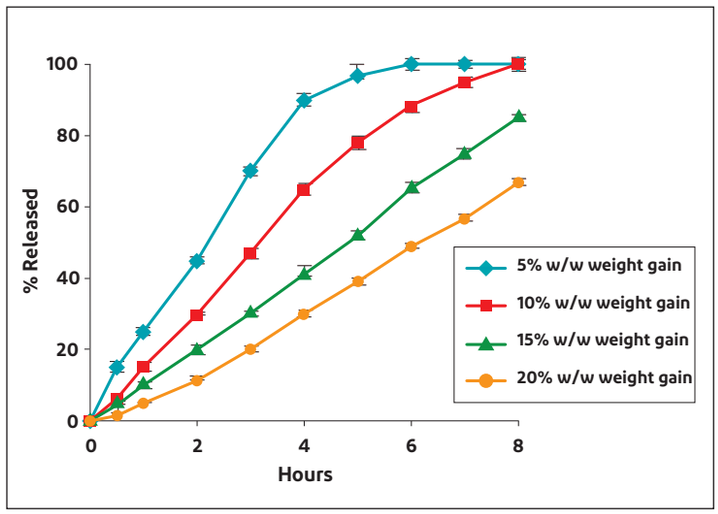
TM HO 72-1

At DuPont, we aim to help our pharma customers with both every day challenges and future solutions. Armed with essential excipients and vital expertise, our broad portfolio is designed to deliver performance and cost advantages in various oral solid dosage forms.

Coating level

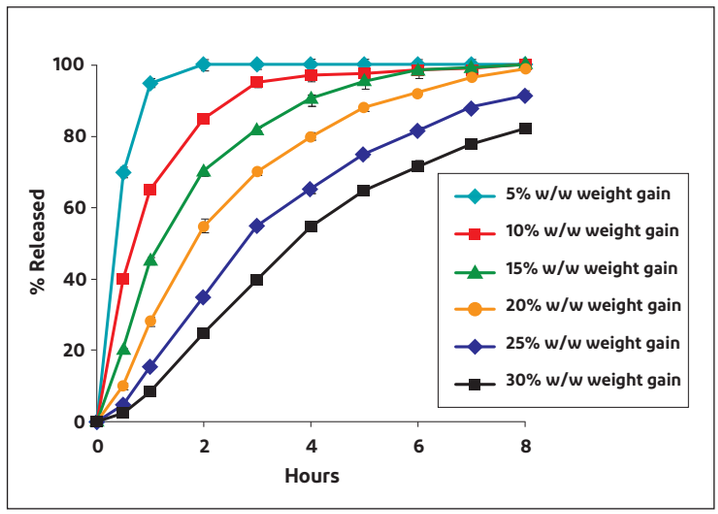
Coating level—also referred to as film thickness or coating weight gain—should be optimized to achieve the targeted release rate while considering robust process scalability. Different release rates may be obtained with the same formulation by adjusting the level of coating and hence the length of the diffusion path. Higher coating levels slow down release rates by lengthening the path of the drug's diffusion from its reservoir system. This increases the time required for the surrounding medium to penetrate the film and reach the core pellet to initiate drug release. (Figures 1 and 2).

Figure 1: Coating level effect on drug release rate



Theophylline pellets coated with Aquacoat® ECD and PVA-PEG graft copolymer in the ratio of 85:15; dissolution medium pH 6.8 phosphate buffer

Figure 2: Coating level effect on drug release rate



Diltiazem HCl pellets coated with Aquacoat® ECD and PVA-PEG graft copolymer in the ratio of 90:10; dissolution medium pH 6.8 phosphate buffer

REFERENCES

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