



## Guest Post: Colorcon



### For more information contact:

Tim Horwood,  
Colorcon

[thorwood@colorcon.com](mailto:thorwood@colorcon.com)

### You can also visit the following website:

[www.colorcon.com](http://www.colorcon.com)

### Moving Towards Continuous Manufacturing

Continuous processing is a growing trend in the pharmaceutical and dietary supplement industries, and being encouraged by regulatory agencies, such as the FDA. This is not a new technology, but it is a new mindset for the industry to move away from traditional batch processes to continuous operations. Regulatory agencies also see the benefits in modernizing manufacturing processes to reduce production interruptions and product failures.

### Colorcon Hits the Target on Productivity & Risk Reduction

The end goal of using continuous processes is not necessarily about achieving high volume throughput, but about adopting lean and consistent manufacturing processes that build quality into the manufacture of the product, rather than testing at the end of the process. Advances in film coatings have also picked up the pace with the introduction of new technologies to increase process efficiency and support product stability improvements. Generally speaking, most film coatings can be used in continuous equipment, but some provide better results than others as each has its own advantages and challenges. Colorcon is helping our customers increase productivity and reduce regulatory risk with innovative coating solutions to support faster cycle times with increased process flexibility and throughput.

### Choosing the Right Film Coating

Creating an efficient continuous coating process not only depends on the equipment used, but also on the formulation of the coating. One attribute that all continuous coating processes offer, compared to batch processing, is faster and more frequent presentation of tablets to the coating spray zone; this results in shorter cycle times to achieve consistent coating coverage.

To meet the industry, need for faster and more flexible coatings, especially for continuous manufacturing, Colorcon has recently introduced a new immediate release coating, Opadry® QX, quick and flexible film coating. This coating system allows for a higher percentage of solids (up to 35%) and results in a smooth, uniform tablet appearance.

### What if the Process is Not Always Continuous?

Perhaps the most significant concern is manufacturing flexibility. The good news is this coating system works well with all equipment types across a wide range of process conditions. This is especially important as companies may move product between different manufacturing locations/providers and equipment types can vary between sites. The flexibility of Opadry QX to be applied across a range of solids concentrations (20% - 35%), product temperatures and airflows makes it particularly suited for continuous processing, while the improved coating uniformity inherent in continuous coaters allows you to take full advantage of improved throughput rates. The benefits are many; chief among them enabling manufacturers to simplify the progression from lab scale to full-scale production utilizing existing equipment, even when operating in challenging heat and humidity environments around the world.

### Remember the Core Components

The choice of coating also depends on the chemical properties and chemical nature of the tablet's core ingredients, including the active ingredient(s) or where it needs to be released in the body, sensitivity to the environment, and the physical properties of the active. Every formulation is different so there is not a "one-size-fits-all" coating. There are certain coating attributes that can be helpful to protect the active, and a novel coating like Opadry® QX, quick and flexible coating system, can be applied at high solids and lower coating bed temperatures, which helps to overcome the physical challenges of the coating process for a moisture or temperature sensitive active.

### Colorcon, from Core to Coating, Your Supplier of Choice

At Colorcon, we formulate, we innovate -- and we focus our coatings and excipients exclusively for pharmaceutical and nutritional oral solid dosages. That's why, when you set out to select the right coating or excipient for your formulation, be sure to partner with the leading company that brings you innovative products plus specialized technical support when and where you need it. Be confident with your choice.

Author  
Deborah Taylor



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[www.vitexpharma.com](http://www.vitexpharma.com)