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How's your deduster?

Is dust pervasive in your tablet press rooms? How about the packaging area? Is dust leading to equipment malfunctions or causing bottles and blister packages to seal poorly?

Dust is a common byproduct of tablet compression, and it often adheres to the tablets as they exit the tablet press. Tablets may also have burrs, or flash, around their edges due to the gap between the punches and dies. If not removed promptly, dust and burrs can easily reach downstream process equipment and cause problems. By capturing the dust, you'll prevent that, and your process and packaging equipment will work more efficiently and require less maintenance. You'll also have a cleaner work area.

Much of the dust that finds its way to downstream processes can be traced to an inefficient tablet deduster. It might also come from how the tablets are stored/transported: When stored and moved in drums or bags, the tablets rub against each other, dislodging dust that is easily introduced into the packaging area.

With all due respect

Tablet dedusters are fairly simple devices, but that simplicity belies their importance to the tableting process. Simplicity also causes people to neglect or under-service them, focusing instead on equipment with a more obvious impact on production. If a deduster is performing poorly, it's often not recognized until much later, such as when dust begins accumulating in the packaging area. Until that happens, dedusters are the

Rodney Dangerfield ("I don't get no respect!") of the process, unglamorously vibrating at 40-plus times per second, day in and day out.

Suction is key!

Actually, one of the biggest complaints about tablet dedusting has nothing to do with the deduster itself, but with the weak suction of the dust collector that's connected to it. Without a reliable vacuum, your deduster is doomed to inefficiency or worse.

Again, the deduster is a fairly simple mechanical device: As it vibrates, it dislodges the dust and flash from the tablets. But if the dust collector doesn't remove that dust, it just accumulates in the machine, where it can be re-deposited on the tablets.

Take a look at your deduster. Is there dust on the ground below it? Is there dust on the discharge chute? How about the inspection window? The presence of dust in any of these areas is a clear sign that the dust collector is not providing enough suction.

As a rule of thumb, there is not too much suction until it affects the flow of the tablets. The smaller the tablet, the less air flow needed; the larger the tablet, the more air flow that can be tolerated. More is better.

Of course, it's a little more complicated than that since the volume of air the dust collection system draws through the deduster can fluctuate widely depending on how the system is ducted and how many pieces of process equipment are running at once. The key is to balance the dust collection system so that each piece

of equipment has the correct air volume and vacuum during normal operating conditions. And that's not a one-time set-and-forget, but something you need to monitor. Rarely have I seen a properly working dust collection system in which suction didn't diminish over time.

The length of a deduster's conveying path also affects performance, and the longer the path, the more efficient the dedusting. But even the best engineered, most sophisticated deduster will not perform properly without sufficient dust collection vacuum.

Last, if the dust is generated by tablets rubbing against one another during storage or transportation, you may have to dedust them again before they're loaded into the packaging machine's feed hopper. *T&C*

[*Editor's note:* To comment on the Back Page, visit www.tabletscapsules.com.]

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