BULK WEIGHERS AND BATCHING CONTROLS

Provide Consistent Product Quality and Enhance Management Decision-Making

Product quality is a critical factor in the competitive chemicals processing industry, so manufacturers are looking to improve chemical mixing accuracies without sacrificing operating speeds. In the past, productivity equalled how much of a given product was manufactured over a given time frame. Today, productivity measurements must also include product quality attributes. Manufacturers who want to improve their productivity must not only accelerate their processing rates – they must also improve the consistency and quality of their finished products.

Purina Mills powder chemical mixing facility in Bridgeton, Missouri, typifies how chemical companies are addressing the need for improved product quality. The Purina location is using highly accurate load cells and batch controllers from Kistler-Morse of Redmond, Washington, to accurately mix various powdered chemical stearates.

"Accuracy is important to us," says Bill Bush, Plant Engineer at the Bridgeton site. "Some of the ingredients that are formulated are very tightly controlled." The Bridgeton facility makes a variety of powdered stearates, which are typically sold as a finished ingredient to the plastics industry. The plant uses 30 different ingredients (such as zinc stearate and other metallic powders) and one liquid mineral oil. Most of the company's stearate formulations require three to five ingredients, though there are some recipes that require as many as seven ingredients.

"We've got so many different ingredients, there's no way we could have all the tankage and feeders to do automatic batching, so we have to load them manually," Bush says. Mixing operators call up various batch recipes, and the Kistler-Morse 1220 batch controller guides them through the various ingredients that are emptied into a dump station, and then dropped into a stainless steel mixing vessel that holds 4,000 lbs. of finished product. Batched ingredient weights range from as little as 40 lbs. to as much as 2,000 lbs. Kistler-Morse Load Disc transducers are used to measure the various batched weights to within 0.5% accuracy. The 1220 K-M Batch Controller is capable of storing as many as nine different formulas with four ingredients each.

Bush has been pleased with Kistler-Morse's equipment and service, so he's dedicated to re-equip another mixing area that previously used mechanical scales with new K-M Load Disc weight transducers. And he plans to upgrade to a 1240 K-M Batch Controller that stores up to 18 formulas with eight ingredients per formula.

"We had an antiquated mechanical scale in here that was supposed to be accurate within one percent, but I'm not really sure how accurate it was," Bush says. "I expect to see an improvement in accuracy, because I know with the Kistler-Morse Load Discs we're getting (accuracy) within a half a percent."

"And even though we're not doing automatic batching – we have to feed everything manually – it's nice to have the batch controller because it walks the mixing operators through the steps and provides printed out documentation as to what the formula was for a given batch," Bush says. "Now we can use those batch records for information management purposes. We can make decisions as to how we might want to change future batches, depending on the feedback we get from our customers."

"On top of all that," Bush adds, "the cost of the new weighing system was very competitive. We looked at other alternatives, but this gave us the best 'bang for the buck.' There was a nice balance between the weighing system's performance and price."

Though the weighing and batching equipment isn't used in a clean-in-place area, Bush preferred Kistler-Morse's stainless steel design. "One of our powders has very low iron content, so we keep iron out of the area so the powder doesn't come in contact with it. And even though we don't wash down the area every day, we do clean with hot water. We've found that other weigh cells are susceptible to water damage. Kistler-Morse's load cells weren't susceptible."

Another reason why Purina has decided to upgrade its Kistler-Morse system, according to Bush, is the company's service and support. "We were installing our new system and we had a problem with a shorted out (printed circuit) board," Bush says, "I called them, and they said 'No problem.' They had a new board here the next day."

"That's the kind of response we need from vendors, because when we're down, the faster we can get back up, the better it is," Bush says. "Production is paramount."

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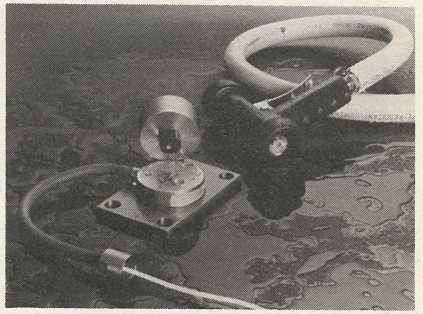

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