

TECHNOLOGY BRIEF:

The release of airborne particles into the plant atmosphere when powders are added to a mix vessel leads to significant maintenance costs and safety concerns. A high speed induction device can eliminate dusting and accelerate both production and process changeover.

Apply high speed powder induction to eliminate dusting in the mixing area.



Lightweight powders present heavyweight challenges

When poured from one open vessel into another, lightweight solids easily become airborne and can require extensive clean up. The most serious concern however is the impact of dusting on plant safety. OSHA guidelines establish threshold levels for dust and complying with these regulations is vital to minimize health and explosion hazards in the workplace.

Dusting is best managed through prevention

While dust collection systems can be employed in the mixing area to capture airborne particles, preventing their release is a better strategy. The key is to eliminate the dust-generating steps of transferring powders from their original container and dumping them into the liquid surface of a mix vessel.

High speed powder induction prevents release of lightweight powders

A mixing system equipped for powder induction effectively prevents lightweight powders from becoming airborne. The Solids/Liquid Injection Manifold (SLIM) available on Ross High Shear Mixers offers this functionality. The SLIM technology utilizes a ported rotor and stator specially designed to generate a powerful vacuum that draws powders into the mix chamber.

Continued on page 2



How the SLIM technology works

The liquid stream (blue) enters the mixer and immediately encounters the powder addition. Drawn into the mixer by a powerful vacuum, the powder (yellow) is injected through the ported rotor directly into the high shear zone. The resulting dispersion (green) is expelled centrifugally through the stator openings at high velocity.

Attaching a hose & wand device to the powder inlet of the SLIM allows the operator to simply draw powders straight from within the bulk container. This powder handling method generates virtually zero dusting and is very operator-friendly.

High speed powder induction simplifies the overall mixing operation which in turn accelerates production and process changeover.

More information on the SLIM

Click [here](#) to see a SLIM mixer in action. Or visit the website <http://www.highshearmixers.com/slim-models.html>



SLIM Installation Summary:

The photo above is from a chemical plant making a bioreactive dye solution. With ordinary handling and mixing in an open vessel, the lightweight concentrated dye drifts into the air very easily. Even small amounts of the dust require a great deal of time for clean-up and waste disposal. The company's search for a mixer that will address this main concern, as well as accomplish their processing objectives, led them to the SLIM.

Shown here is an operator dipping the wand assembly into the powder container to draw solids through the flexible tube and into the SLIM mixer. The mixture recirculates through a 1000-gal vessel until discharge.

