



JENIKE[®]
& J O H A N S O N

Jenike Fluidization Segregation Tester

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ASTM Standard D6941-12



The Jenike Fluidization Segregation Tester measures the tendency of a powder to segregate when fluidized.

Fluidization is a state in which sufficient air or other gas is entrained in a bed of powder such that it behaves like a fluid. This commonly occurs when handling fine powders and it can result in the vertical separation of the powder by particle size, concentrating the smallest particles near the surface while coarser particles more readily settle and concentrate near the bottom. This behavior may result from gas counterflow (for example during the rapid filling of an enclosed vessel, blending or pneumatically conveying), or simply as air escapes from a bed of fine powder and the powder deaerates. Fluidization segregation is most likely to occur when handling a powder with a significant percentage of particles below 100 microns.

The Jenike Fluidization Segregation Tester simulates the top-to-bottom separation of very fine powders that often occurs as a result of the movement of air or other gasses through a bed of powder. It allows the comparison of one material or production batch to another utilizing computer based controls and a touch panel interface for simple operator input and repeatable, operator-independent results.

General testing procedures

A 75 mL sample (1.5 mm maximum particle size) is placed into the assembled tester using the expansion chamber as a funnel. A filter is installed and secured. The control parameters (air flow rates and times) are set using the controller's touch panel interface. The testing sequence is initiated and the fluidization/deaeration cycle proceeds automatically.

Upon completion of a test, the sample collection jars are positioned, and a handle is rotated, causing the sample to be divided and delivered to each jar. This unique design provides fast and easy sample collection. The stacked components of the test chamber can then be removed from the tester column for cleaning.

Primary components

- Control panel for air flow and sequence timing
- Tester column composed of:
 - 3 removable, acrylic cylinders that form the test chamber
 - Acrylic plenum base
 - Stainless steel fluidizing diffuser
 - Acrylic expansion chamber with filter ring for air / particle separation
 - Stainless steel base with locking mechanism
 - Collection jar adapter rings
- Tubing with quick release fitting to connect controller to test column
- Glass jars with lids for sample collection (1 pkg of 24)
- Paper filters (1 pkg of 100)
- Requires:
 - 110 - 240v power (specified when ordering)
 - clean, dry regulated air/nitrogen supply at 15 to 25 psi/170 kPa

