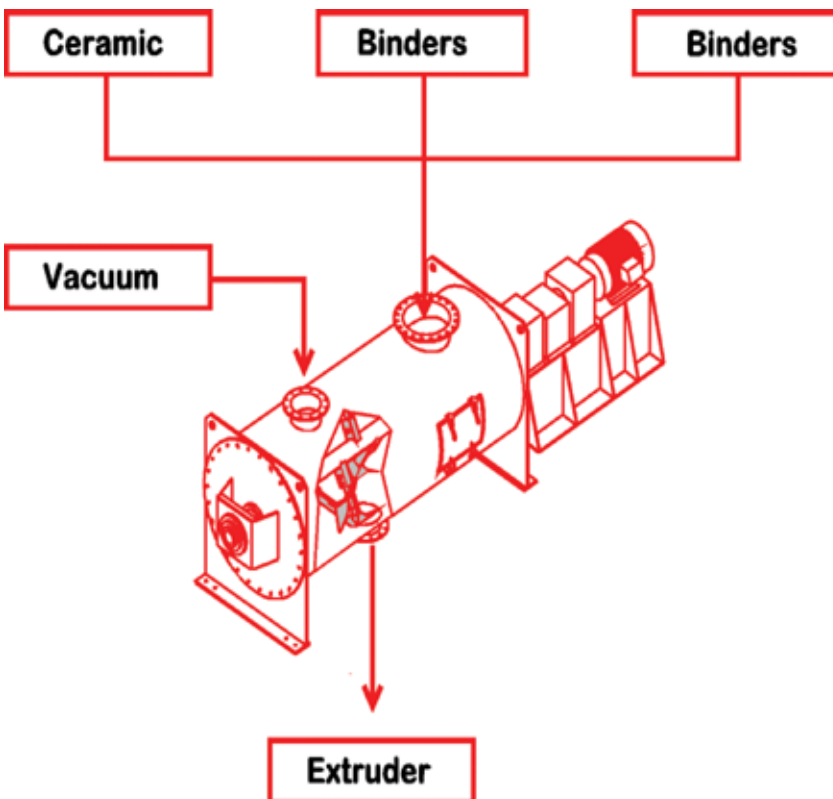




As the electronics industry grows so does the need to develop better ceramic substrates for capacitors, RF filters, and other electronic components. The problem with developing these extrusions lies in the need to accurately mix a number of very fine powders, precision coat these particles with the correct liquid or polymer, then knead these together to the correct consistency prior to extruding.

Processall's fluidized bed mixing technology aligns itself very well with this type of process. Originally developed around the pharmaceutical industry, this mixer was developed where accurate mixes of different densities are a must. A good amount of success has been achieved using this style mixer, with some of the advantages being as follows:

1. Precise mixes of different powders
2. Accurate mixing of very small components
3. The ability to accurately coat particles with liquids
4. Very short mix times
5. Good ability to knead the product to final consistency
6. The ability to develop the complete product in one vessel rather than using multiple steps
7. The capacity to make multiple batches with exacting repeatability
8. High vacuum deairating prior to extruding to provide solid, high quality extrusions.



The fluidized bed action is a three directional mixing action where the particle is "suspended" with mechanical energy rather than vapor pressure. Mixing is quick and precise as segregation cannot occur in an active suspension.

The inclusion of high shear mills and spray nozzles allow spraying liquids into high shear "coating areas". Particle coating happens quickly using less liquid than with other methods. Because they are suspended while being coated, particles stay coated after the mix.

Dearating is done by fluidizing the bed under very high vacuum. Within minutes, all vapors are removed to provide a high consistency feed to the extruder.

The Processall mixmill can be equipped to dry off moistures under high vacuum before or after coating. The vessel is jacketed to

allow a heating media to circulate, warming the product to vaporize the liquid. Moistures are then carried off through a filter the vacuum system.



PROCESSALL

Ceramics

There are two styles of Mixmill. The standard style for 100 liters and above has agitator support bearings at both ends; charging ports are on top and discharge ports on the bottom.

For smaller batches more frequently encountered in this industry we offer our patented Tilt-A-Mix line. These units tilt up for charging, horizontal for mixing, and down to facilitate discharge. Mounted on casters, these units can easily be moved between areas.

Material of construction includes stainless and nickel alloys, as well as nonmetallic coatings. Contact your Processall representative or call Processall to set up a pilot plant demonstration test.



4600 N. Mason-Montgomery Road • Mason, OH 45040
888-425-1603 • 513-923-5904
www.Processall.com • sales@Processall.com
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