



**PROCESSALL**

# Bulk Moulding Compounds

The Processall Mixer with its plowshaped agitators has given outstanding performance in the mixing of powders, viscous and fibrous materials used in the manufacture of bulk molding compounds

Bulk Molding Compound (BMC) typically consists of the following ingredients: polyester resin, catalyst, modifier, fillers, pigments, and fiberglass fibers of different lengths. Bulk molding compounds provide superior performance characteristics.

#### These characteristics include:

- Excellent mechanical properties
- Electrical and chemical properties
- Weather resistance
- High strength per weight ratio
- Flame resistance capabilities
- Superior flow characteristics when conforming to a mold

Traditional mixing technology used in the making of BMC involves the use of two mixers. One is a high-speed disperser to prepare the heavy viscous paste. The other is a high shear sigma blade to mix the fibers with the paste. This normally creates many processing problems such as inadequate dispersion of paste and fiber opening, but two-step processing requires an additional material handling step. Emptying a viscous liquid mixer and moving the product to another machine require additional labor and cleanup costs. Additionally, styrene vapor is lost when the open style mixers are used during material handling increasing material costs.

Due to the high shear found in the sigma blade, the fibers tend to break and filamentation (de-fibering) of the fiber stands occur. In utilizing two vessel, processing dispersion is poor, which could cause inferior physical properties in the compound. The finished product discharges from the sigma mixer by hand, requiring additional labor.

#### Typical applications that these are used are in:

- Automotive Industry
- Appliance Components
- Power Tool Housings
- Computer Components
- Electrical Fixtures
- Dishware



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Plow mixers have the capability of adjusting to the degree of mixing by using the mills in conjunction with the main mixing elements. These mixing elements working in union with each other provide thorough intensive mixing for preparing the paste and efficient low shear gentle mixing to add the reinforcing fiber to resin. These are all within the confines of a single vessel.

The ability to mix the entire batch in a single vessel, without additional material handling steps, reduces cost and make the system more adaptable to automation. Special large discharge doors found on the plow mixers are used to remove the material efficiently, eliminating the need to manually remove the material. Discharge of the mixer is fulfilled by opening the discharge door and operating the mixer.

These mixers are easily cleaned by adding solvent with scrubbing agent, and operating the machine for short periods, then cleaning materials are discharged. The mixer can process fibers anywhere from 1/8" to 1/2" in length at loading levels from five to 50%. Typical mix cycles are in the 5 to 10 minute range. The ideal mixing practice produces evenly coated fibers in the product. The material is easy to handle, with less bulky density than that normally produced by other mixing processes. Not

only is the mixer capable of mixing fiberglass, but also a wide variety of the latest generation of "high tech" reinforcing fibers. If you have any questions about bulk molding compounds, please feel free to contact one of our experts. Processall is a leading provider of chemical processing horizontal plow mixers, reactors, dryers, sterilizers and extractors.

Processall maintains a fully equipped testing facility in Cincinnati, Ohio designed to provide customers with the data they need to develop their process, evaluate equipment, scale-up and identify the necessary equipment to maintain desired production volumes. We extend an open invitation to all potential customers to bring their product to our test center and get a "hands on" experience with our Technology and capabilities.

We also maintain a rental fleet that customers can utilize to do further testing at their facility or employ to minimize their startup costs for a new process.

Please feel free to contact us with all your vacuum drying questions and our experienced industry professionals will help you find the right mixing solutions for your particular application.



**Contact us today**

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