



The Bio-Reactors are used in applications which require pressure as well as vacuum and thermal conditioning capabilities for the processing of materials. They add a dimension of synergism to the process by having the capability of mixing, drying, cooling, reacting, or any combination of these processes in a single vessel. Many of these techniques demand the processing flexibility to handle material in a variety of physical forms. Materials may range from low solids to slurries, paste to pseudo plastic materials, dense granular solids to fine powders. The mechanically fluidized bed principle because of its versatility, extends the capabilities of single vessel processing to a wide range of applications. In many cases several steps in the process can be consolidated by eliminating costly material handling and related auxiliary equipment. The Processall reactor is available in sizes ranging from 4 to 25,000 liters of total volume.

- Constructed with the highest GMP guidelines.
- Pressure and vacuum capabilities.
- Product contact surfaces can be highly polished or electropolished to minimize inclusions.
- Motors are completely enclosed and protected from the environment by using external ventilation from outside the process area.
- Sanitary valves are used for ease of disassembly and CIP (clean in place).
- Can be supplied with on-board CIP system.
- All fittings are sanitary style.
- Sight glass is available to monitor product.
- Validation software can be available for specific applications.

Processall maintains a fully equipped technical center to demonstrate our hardware and processing capabilities.

Typical operation cycle: The sterilized reactor is charged with filter cake or dry product. Also, the reactor can be used to vacuum dry the product to any desired moisture level without environmental exposure. The capability of mixing thoroughly with high precision is possible with this style equipment. After discharging the product, the system can be cleaned in place and dried. Filter elements can be cleaned in place or autoclaved separately.

Normally this type of a system is installed in a class 100 room with HEPA filters in the product discharge area to allow opening the vessel without losing sterility. The system can be installed on load cells to validate material weights and processing management at all times.

Typical applications for this equipment are anti-cancer and genetic drugs.