What is it?

The DAC SpeedMixer™ is a laboratory-sized instrument for the rapid mixing and grinding of materials that would otherwise require large amounts of time and / or effort to mix and / or grind.

How does it work?

The DAC SpeedMixer™ works by the spinning of a high speed mixing arm in one direction while the basket rotates in the opposite direction - thus the name - Dual Asymmetric Centrifuge. This combination of forces in different planes enables incredibly fast mixing, and yet the precision construction of each machine gives it a balance that allows amazingly quiet operation.

What can it do?

With this instrument, the typical mixing time for fully dispersing a colour paste in a silicone sealant is less than 10 seconds; for mixing fumed silica or precipitated chalk silicone formulations 8 - 14 seconds will normally suffice. These are both operations that would otherwise require up to 3 hours or more of mixing time, and they can only be done in quantities of 1 litre or greater. Mixing does not incorporate any air and additional mixing time removes air from the blend, yielding a finished product when the mixing process is done. Fluids of widely differing viscosities can be blended quickly.

What materials can it mix?

The DAC SpeedMixer™ is useful for 1 and 2 part silicones, polyurethanes, polysulfides, acrylics and a wide range of other materials. There are certainly a great number of products not included in this list that can benefit from the use of the SpeedMixer™ technology. With disposable cups, there is no worry about contamination in colour master batches, pharmaceutical products, or other sensitive materials, since the SpeedMixer™ has no mixing components to clean. Both re-usable and less expensive disposable cups (recommended especially where cross-contamination is a problem) are available. SpeedMixer™ technology also allows the use of higher filler loadings than conventional mixers, e.g., 25% or more of fumed silica into silicone.

How much can it mix?

Over several size models, batch weights range from 1 to 10,000 grams. Cups are used with holders that have weights designed to maintain the balance of the machines. Various cup sizes are available to meet your needs and minimize material waste by tailoring the actual batch size to the quantity you need, not what the mixer requires.
Where is this instrument used?

The main current applications are for lab screening of development formulations and formulation components, for QA testing and for small volume production. With the incredible speed of mixing the bottleneck now becomes the weighing operation, not the mixing. This makes every DAC SpeedMixer™ user a better compounder, since it allows the mixing of many iterations that would otherwise go untested due to time constraints. The SpeedMixer™ has proven itself extremely useful for tests involving cure rates, colours, and appearance, as well as the measurement of basic physical properties. This permits the screening of numerous formulations before the next phase of development scale-up. (SpeedMixer™ technology involves using the proper size cup for each mixture to be run. Contact us for recommendations on the products to be used.)

How do I control the instrument speed to avoid damage to my product?

Especially designed for research and development and quality control work, the DAC SpeedMixer™ has variable speeds set by the revolution rate and a window for viewing the mixing basket, allowing more in-depth research work to be done. Speeds can be fixed or are adjustable in order to carry out a series of batches at a desired rotation. Using lower speeds can help avoid some of the effects of the tremendous centrifugal forces generated at top speed, e.g., the build-up of frictional heat in sensitive mixes, or the potential damage to micro environments.

About Us:

Synergy Devices Limited is a company committed to meeting the agreed requirements of our customers, both internal and external, on time, every time, and to be a diligent supplier of mixing and dispensing equipment.

Product quality and safety in use are of paramount concern to us. It is for this reason that registration to the approved quality standards was sought.

Our ISO systems control every aspect of the product from the moment it arrives at our premises right through to delivery to our customers.

Customers are welcome to use our on site laboratory where they can get hands on with the materials, and allows the use of higher filler loadings than conventional mixers, e.g., 25% or more of fumed silica into a silicone!