Prepreg Filming

A prepreg material is a composite of partially cured resins that are pre-impregnated into reinforcement fibers using coating line or filming techniques. At the end of the prepreg production line, the pre-impregnated fiber resin sheet material is rolled up and frozen to prevent the resin from curing any further. At the fabricating facility, sheets of prepreg are unrolled, layered over tools or molds, and cured with heat usually under pressure or vacuum bag.

Batch mixing

The coating mixture that is pre-impregnated into the fibers is usually a combination of several high-performance resins and curatives. Once all components are thoroughly blended, the reactive mixture must be transported continuously to a filming line quickly enough to supply the coating line at a suitable rate. Air operated supply pumps are most often used for fluid transport and will be either ambient temperature systems or heated to help maintain a low coating viscosity. In many instances, intrinsic safety is a requirement due to the need of solvent cleaning immediately after completion of the filming or coating session.

Graco offers ambient and heated pumping systems to deliver the mixed resin batch directly to the coating head. New developments include controlled flow, in-line filtration, heated ram systems and fast-cleaning pumps.

In-line meter mix

To eliminate the need for making many small batches a day, an in-line continuous meter mix system can be used to directly feed the coater. These systems will usually involve more than two components to be fed in accurate proportions to an in-line mixer. The result is supplying a fresh mix of resin curative to the coating line. Benefits are reduced cleaning, less waste and lower labor costs. Many times the curative will be a solid powder. Pre-blending it with a diluent will create a fluid consistency that can be pumped and metered. Graco's meter mix systems range from off-the-shelf two-component machines to custom multi-component process units.