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Polymer Blending, Mixing, Rheology, and R&D extrusion

The C.W. Brabender Instruments, Inc. laboratory extruder systems cover the complete range of processing conditions for quality control, product development, research applications, pilot plant and small scale production. The extruders provide close test reproducibility acting as measuring devices for sensing and recording extrusion torque.

Using four mixing heads and one extruder head with nine different dies for the two C.W. Brabender systems. Banbury Blades are designed to duplicate the mixing action of a commercial Banbury Mixer, a medium shear-rate mixing action ideal for mixing elastomeric materials, compounding studies, and recycled materials.

Roller Blades are most commonly used for materials that require a strong shear force to form a homogenous melt: thermoplastics, and many thermosetting resins such as phenolics and epoxies. Typical studies: fusion, lubricity, heat stability, crosslinking, and degradation.

Sigma Blades are the original Brabender® Mixer blades developed several decades ago for the testing of flour dough. Its low shear-rate design creates a tumbling and kneading force within the mixer with low compressing force.

Rheology studies are performed on a Rheometrics SR5 controlled stress/strain rheometer. These studies are for characterization of the material structure, which are then used for mixing and blending models. Typical studies include: frequency sweeps, creep studies, rate sweeps, temperature ramps, etc.

Typical applications include: R&D studies, New Product Development, Compatibility, Stability, Quality Control, and Product Evaluation.

Industries that use this service: Medical, Pharmaceutical, Packaging (films and foams), Additives and Compounding, Recycling, Tool and Die designers, Automotive, Food, Composite, and Adhesive.