



ELASTEK ElasTek Products by CCSi

Rubber processing characteristics are influenced by many variables. The sources and quality levels of the ingredients and processes used in compounding rubber material deviate from batch-to-batch and from run-to-run. The processing environment, equipment, methods and operators cause, to some degree, nonuniformity in end results. The multitude of variables and potential for inconsistency dictates process monitoring, quality control and quality assurance.

Three main variables affect thermoset rubber processing:

- Dispersion of chemical constituents,
- Viscosity or plasticity,
- Curing characteristics.

The Garlock Flow Comparator is a simple, inexpensive process control instrument that detects inconsistencies in these variables. Batch-to-batch testing of a rubber compound formulation allows quick response to potential problems, minimizing work in process costs.

The Garlock Flow Comparator measures the flow behavior of compounded and mixed rubber formulations in the unvulcanized state. Simple and versatile, it can be used in the lab or near the production equipment for "in-process control". In as little as 90 seconds it can be used to detect a troublesome compound, eliminating work-in-process costs.

ElasTek™ Garlock Flow Comparator: Features & Benefits

Statistical Process Control (SPC) ... detecting variations and predicting results ... is mandatory when doing business with aerospace, automotive and associated industries. The large majority of rubber manufacturers also use SPC as a means to approach the seemingly illusive goal of "zero defects". The Flow Comparator is a very useful tool in obtaining meaningful, rapid SPC data.

The Garlock is designed to test specimens of unvulcanized rubber of a specific volume. The specimen is forced, under pressure, through an orifice into a temperature controlled cavity. The cavity consists of four graduated legs designed for ever increasing resistance to flow. Upon a predetermined state of cure, readings are taken directly from the graduated platen and averaged, giving a "flow value".

Temperatures and pressures, as well as time, are precisely controlled and virtually infinitely variable, depending on the compound being tested and the conditions being emulated. The orifice may also be changed and calibrated. This is especially useful in simulating production environments. In addition to "flow data", the test yields a vulcanized button suitable for durometer, shrinkage and specific gravity tests.

The Garlock Flow Comparator provides critical information about unvulcanized rubber compounds. It allows better quality control and reduces wasted time and materials without expensive equipment or long, complex testing procedures. Maintenance is easy and inexpensive assuring years of service.

ElasTek™ Garlock Flow Comparator: Applications



- Measures the flow value of unvulcanized thermoset rubber compounds;
- Indicates potential errors in compounding;
- Aids in establishing bin storage stability parameters;
- Checks quickly batch-to-batch consistency and acceptability;
- Serves as an "in-process control" to minimize work-in-process costs;
- Indicates improper mixing;
- Provides a basis for establishing SPC procedures related to rubber molding.