CellMat Technologies

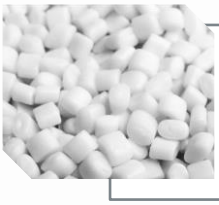
GAS DISSOLUTION FOAMING AUTOCLAVE

Testing and development of tailored formulations and processes

CHARACTERISTICS

- HIGH-PRESSURE (UP TO 410 bar) AND HIGH TEMPERATURE (UP TO 350 ºC) REACTORS.
- GAS DISSOLUTION FOAMING IN TWO ROUTES:
  - ONE-STEP FOAMING
  - TWO-STEP FOAMING (FURNACE OR THERMAL BATH)
- DIFFERENT BLOWING AGENTS:
  - CO_2, N_2, HC, HFOs, ETOH, etc.
  - BLOWING AGENT BLENDS.
- ALL POLYMER MATRICES AND FORMULATIONS: THERMOPLASTIC ELASTOMERS, POLYOLEFINS, POLYSTYRENE, TECHNICAL POLYMERS, RUBBERS, ETC.
- POSSIBILITY OF PRODUCING FORMULATIONS IN A TWIN-SCREW EXTRUDER.
- PRECURSORS WITH TAILORED THICKNESS PRODUCED BY EXTRUSION, INJECTION OR COMPRESSION MOLDING.

APPLICATIONS



TESTING NEW RAW MATERIALS AND FORMULATIONS

- Selection of raw materials: polymers and additives.
- Analysis of the solubility and diffusivity of blowing agents in different formulations.
- Development of tailored formulations with enhanced foaming performance.

ANALYSIS AND OPTIMIZATION OF PROCESSING CONDITIONS

- Testing of a wide range of processing parameters: analysis of the effect of temperature and pressure on the density, structure and properties.
- Evaluation of cycle time and optimization of the process.
- Use of blowing agent blends to maximize performance.

ADVANCED PROPERTY CHARACTERIZATION

- Generation of prototypes with dimensions large enough for characterization: thermal conductivity, mechanical properties, etc.
- Evolution with time: shrinkage, gas composition, thermal stability, etc.

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