Polysciences, Inc.
Chemistry beyond the ordinary

Pressure Reactor Capabilities for pEVA Synthesis

Polyethylene-co-vinyl acetate (pEVA) has many desirable characteristics for use in biomedical applications including: tensile strength, barrier properties, controlled release and optical transparency. Our pEVA is a highly purified copolymer (residual monomer and solvent levels <100 ppm) with no additives and a low polydispersity index. pEVA can be processed in a number of ways including spin coating, casting, molding, extrusion and a variety of emulsion and solution mixing.

Overview

- High pressure (up to 4000 psi) reactor capabilities
- Emulsion or Solution polymerizations
- Numerous variables available to control polymer properties (MW, percentage of monomers, etc.)
- 2 gallon reactor size
- cGMP compliant manufacturing

Capabilities & Experience

- Able to synthesize materials with VA weight ratios from 60-90%
- MW ranges from ~25,000-300,000
- Resulting polymers are free of additives
- Can also synthesize with other monomers (methacrylic acid, MMA etc.)

Example Reactions

Polysciences has the capabiltiy to produce pEVA copolymer across a wide range of VA contents and molecular weights to meet compendial requirements or custom specifications. Examples of the MFIs (used as an indication of molecular weight) that have been acheived in Polysciences' pressure reactor for multiple VA contents are listed in the table.

MFI (Melt Flow Index) is measured per ASTM D1238 and can be tuned to achieve specific values within the ranges shown for a given VA content.

Molecular weights measured by GPC for the examples shown range from 25,000 to >300,000

	VA Content (NMR & FTIR)	MFI Range (g/10 min)
Run 1	6 - 8%	4 - 100
Run 2	9%	2 - 100
Run 3	15%	6 - 100
Run 4	20%	15 - 80
Run 5	28%	20 - 100
Run 6	40%	80 - 90

U.S. Corporate Headquarters | 400 Valley Rd, Warrington, PA 18976 | 1(800) 523-2575 (215) 343-6484 | Fax 1(800) 343-3291 | info@polysciences.com
Polysciences Europe GmbH | Badener Str. 13, 69493 Hirschberg an der Bergstr., Germany | +(49) 6201 845 20 0 | Fax +(49) 6201 845 20 20 | info@polysciences.de
Polysciences Asia Pacific, Inc. | 2F-1, 207 DunHua N. Rd. Taipei, Taiwan 10595 | (886) 2 8712 0600 | Fax (886) 2 8712 2677 | info@polysciences.tw