

Biodegradable Polymers

Poly(lactic Acid) & Poly(ethylene Glycol) Based

The exploration of poly(ethylene glycolated) (PEG) materials in biosciences and pharmaceuticals has grown rapidly. Biodegradable Polymers based on copolymers of poly(lactic acid) (PLA) and poly(ethylene glycol) (PEG) offer researchers and scientists new tools for controlled release formulations and drug delivery platforms.

Biodegradability of polymers based on lactic acid (LA) and its copolymers with ethylene glycol (EG) open new avenues for:

- Medical & Dental Devices
- Encapsulation & Drug Delivery
- Gene Therapy
- Drug Targeting
- Tissue Engineering
- Biodegradable Sutures
- Micellar Anticancer Carriers
- Orthopedic Fixation Devices
- Formulation of Artificial Blood Systems
- Determination of Cellular Pathway Mechanisms

As well as offering the following advantages:

- Well defined release process
- Controlled degradation

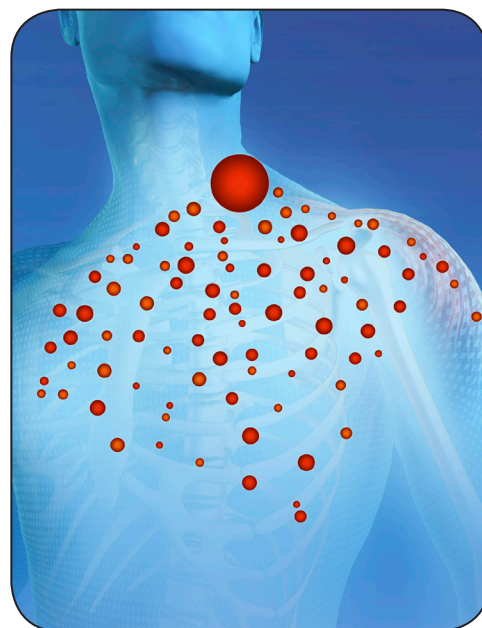
Polymer structures featuring poly(ethylene glycol) (PEG) segments with biodegradable or biocompatible segments offer micellar, nano and microsphere morphologies useful for controlled release formulations.

Diblock Polymers

PEG(350)-b-PLA(300), Diblock Polymer	24375
PEG(1,000)-b-PLA(750), Diblock Polymer	24378
PEG(1,000)-b-PLA(5,000), Diblock Polymer	24381
PEG(5,000)-b-PLA(1,000), Diblock Polymer	24386
PEG(5,000)-b-PLA(5,000), Diblock Polymer	24389
PEG(10,000)-b-PLA(5,000), Diblock Polymer	25017
PEG(5,000)-b-PLA(10,000), Diblock Polymer	25018

Triblock Polymers

PLA(1,000)-b-PEG(1,000)-b-PLA(1,000), Triblock Polymer	24500
PLA(2,000)-b-PEG(1,000)-b-PLA(2,000), Triblock Polymer	24501
PLA(5,000)-b-PEG(1,000)-b-PLA(5,000), Triblock Polymer	24502
PLA(1,000)-b-PEG(4,000)-b-PLA(1,000), Triblock Polymer	24503
PLA(1,000)-b-PEG(10,000)-b-PLA(1,000), Triblock Polymer	24509
PLA(5,000)-b-PEG(10,000)-b-PLA(5,000), Triblock Polymer	25026



Polysciences, Inc. specializes in custom synthetic capabilities to modify and/or expand the range of listed materials.

Please contact us for a quotation for your custom synthesis needs.

Biodegradable Polymers

Polycaprolactone Based

Increased interest in biodegradable polymers for both biomedical and industrial applications, puts caprolactone-based materials among the leading candidates for biodegradation due to its approved uses by the FDA for drug delivery systems, sutures, long-term implants and adhesion barriers as well as new tissue scaffold host systems.

Further modifications of polycaprolactone are possible by converting it into diblock (A-B) or triblock (A-B-A) copolymers with polyethylene glycol. Synthetic methods which lead to block structures allow the polymer to have controlled biodegradation rates as well as improved physiological compatibility characteristics. Low molecular weight PEG blocks or caprolactone blocks are tolerated in the human body and are excretable. Such amphiphilic block copolymers are also convertible into polymersomes or vesicles, which may contain active compounds (API) that are released during degradation.

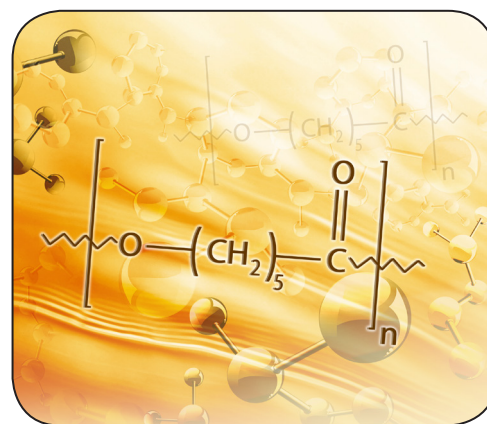
In addition to our full line of Polycaprolactone Diblock and Triblock Polymers, we offer custom synthesis services for other compositions and block molecular weights. The PEG terminal groups are blocked as methyl ethers but the caprolactone end groups are hydroxyl and are suitable for functionalization.

Diblock Polymers

PCL(1000)-b-PEG(1000), Diblock Polymer	Cat. #	25010
PCL(1000)-b-PEG(2000), Diblock Polymer		25011
PCL(1000)-b-PEG(5000), Diblock Polymer		25012
PCL(5000)-b-PEG(1000), Diblock Polymer		25022
PCL(5000)-b-PEG(2000), Diblock Polymer		25023
PCL(5000)-b-PEG(5000), Diblock Polymer		25024

Triblock Polymers

PCL(1000)-b-PEG(1000)-b-PCL(1000), Triblock Polymer	Cat. #	25019
PCL(1000)-b-PEG(2000)-b-PCL(1000), Triblock Polymer		25020
PCL(1000)-b-PEG(6000)-b-PCL(1000), Triblock Polymer		25021
PCL(1000)-b-PEG(10000)-b-PCL(1000), Triblock Polymer		25013
PCL(5000)-b-PEG(1000)-b-PCL(5000), Triblock Polymer		25014
PCL(5000)-b-PEG(2000)-b-PCL(5000), Triblock Polymer		25015
PCL(5000)-b-PEG(5000)-b-PCL(5000), Triblock Polymer		25016
PCL(5000)-b-PEG(10000)-b-PCL(5000), Triblock Polymer		25025



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Learn more about our line of Polycaprolactone-based Biodegradable Polymers, visit www.polysciences.com/pcl