

Is PLA biodegradable ?

Polylactic acid or PLA is a material which has been around for tens of years. Until recently no major producer of PLA existed until they were funded by mega corporations to come into the marketplace to replace synthetic plastic.

Is PLA biodegradable ? While the answer is not simple we have decided to make a post to explain what PLA really does and some further reading for the inquiring minds.

- 1) PLA is not biodegradable it is degradable.
- 2) Enzymes which hydrolyze PLA are not available in the environment except on very rare occasions.
- 3) Proteinase K catalyze the hydrolytic degradation of PLA

Williams in 1981 and Tsuji and Miyauchi in 2001 had the same question " is PLA is biodegradable" . They have written white papers around the subject and are featured in the book Biomaterials Science: An Introduction to Materials in Medicine. In the book and discussed at the conference of the European Society for Biomaterials PLA is controlled by hydrolysis and the hydrolysis is independent of all biological agents.

So while many people believe PLA to be biodegradable, it simply is not, PLA is degradable and should be considered as such, in the Biomaterials Science book, they actually go on to say that the situation where Proteinase K hydrolyze PLA is so rare it is not worth discussing further.

We hope this answers the question on if PLA is biodegradable and we continue to work for the best solution for your green plastic and biodegradable needs.

For more information regarding the documents listed in this article please visit.

References:

Hideto Tsuji * and Shinya Miyauchi
Department of Ecological Engineering, Faculty of Engineering, Toyohashi University of Technology, Tempaku-cho,
Toyohashi, Aichi 441-8580, Japan
Biomacromolecules, 2001, 2 (2), pp 597–604
DOI: 10.1021/bm010048k
Publication Date (Web): April 24, 2001
Copyright © 2001 American Chemical Society

<http://pubs.acs.org/doi/abs/10.1021/bm010048k?journalCode=bomaf6>

Williams 1981
10.1243/EMED_JOUR_1981_010_004_02
Engineering in Medicine January 1981 vol. 10 no. 1 5-7
<http://eim.sagepub.com/content/10/1/5.extract>

Biomaterials Science: An Introduction to Materials in Medicine 2013
Buddy D. Ratner, Allan S. Hoffman, Frederick J. Schoen, Jack E. Lemons
<http://www.sciencedirect.com/science/book/9780123746269>