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# An overview on polyurethane-degrading enzymes

Polyurethanes are a class of multifaceted synthetic polymers joined by carbamate (urethane) links, which can be flexible as well as rigid. Once considered an advantage, polyurethanes cannot be easily degraded. The accumulation of plastic has become one of the major global concerns and enzymatic degradation is proving to be an effective solution. This review aims to provide an overview on the efficiency, recent discoveries and advancements of enzymes in degrading various polyurethane (PU) materials, underlying molecular mechanism of degradation process, characteristics of enzymes produced by filamentous fungi, and assessment of their ecological safety. Together, these investigations shed light on the efficiency of enzymatic PU degradation and track the evolution of research on these enzymes. Despite all the advancements and research on enzymatic degradation, there are still many challenges faced regarding the cost, degradation of complex PU, unfavourable environmental conditions, and so on. This review seeks to bridge the gaps in studies conducted on enzymes and to provide new direction for research
Keywords: Polyurethane- -degrading enzymes, Enzyme catalysis, Biodegradation, Bioremediation

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