

Decay Polymers and Their Destructions

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Annotation: The economic and social development of our country is developing with rapid pictures in accordance with the directions of the chemical industry, especially technical progress, which provides all sectors of the national economy with local raw materials and materials.

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And the acceleration of scientific and technological progress led to the use of waste, which was the main source of waste for the chemical industry, polluting the environment, but at the same time was considered an invaluable and affordable raw material for obtaining materials [1].

The widespread use of polyethylene in the national economy is due to the low cost and sufficiency of the cost, the solubility of the methods of its modification and, therefore, the abundance of product types. In addition to a number of its win - win sides, polyethylene has a serious drawback-its low resistance to various energy influences, which leads to rapid wear of removable products. In the processes of processing and product exploitation, it is necessary to add stabilizing additives belonging to different classes of chemical compounds to protect polyethylene from heat, light, mechanical, biological, atmospheric and other harmful influencing factors. The most important requirements for high-quality additives that are added to the composition of the polyethylene composition are the simplicity, cheap and harmlessness of the technology of their production. Stabilizers, which are currently used in large volumes that cannot meet the above requirements, are expensive, poisonous, and many of them make it difficult to process polyethylene at the time of obtaining the product.

At this point, our country also has Waste reserves of the chemical industry and other production sectors. Some of them are of interest in terms of use as raw materials for the production of polyethylene stabilizing additives or stabilizers. As one of these, the Italian firm "CHIA BICKOZA" in large quantities is the technological waste of producing caprolactam, that is, the product (T-product) of the toluene line. It has the following composition: benzoic acid-50-60%; benzylbenzoate-10-15%; phthalic acid-5-7%; diphenyl-0.2-0.5%; dimethyldiphenyl-up to 4%, benzaldehyde-up to 1.0% and other impurities. In addition, there are large waste reserves of the oil and oil industry in our republic-gossipol tar, which are formed when extracting vegetable oils [2].

The preparation of polymeric composite materials remains one of the requirements of the present day. Because in addition to the production of various products based on them, many other materials stand out for being extremely resistant to environments that cannot withstand. About 70% of polymeric composite materials are mainly produced on the basis of polyethylene. Polyethylene raw materials are obtained in industry by block method, suspension and emulsion polymerization. There are many brands of polyethylene produced. For example, PE S-6358 J, PE S-7058, PE S-7059 and others.

Polyethylene can undergo destruction as a result of various external influences. For example, many other types such as thermal destructions, chemical destructions, mechanical destructions, biological destructions and others can be cited. And during the processing period, it is required to definitely avoid them. Because destructible

products are highly toxic. One of these, for example thermal destructions of polyethylene, is a complex of complex chemical processes that take place simultaneously in several directions. On the basis of the reaction, the separation of NCI occurs, which leads to the formation of polyethylene structures in the composition of macromolecules and the departure of the polyethylene color, as well as a deterioration in its operational properties. That is why, when processing polyethylene, various additives are necessarily added to its composition, including thermostabilizers [3].

The use of synthetic bioparticles polymers plays an important role in two aspects of human life activity, namely in the protection of tabiotics and the environment. Most of the polymer materials currently used for packaging are bioinert (polyethylene, polypropylene, polyethylenterephthalate, polystyrene, etc.), which decompose in natural conditions for very short periods. This creates problems such as their disposal, secondary processing. Both cases are considered a process in which a large amount of energy and labor is spent, polluting the environment to a certain extent.

The direction with a bright future in this area is the use of nanocomposites based on biodegradable polymers and organic modified layer silicates. They can decompose (destruct) with great speed due to improved mechanical and thermal-physical properties, as well as a decrease in the degree of crystallinity of the polymer. In the process of biodegradation, macromolecules are decomposed into oligomers with a small molecular mass in the head, and then again exposed to bacteria. Carbon dioxide and water are eventually formed as Decay products [4].

Another of the bioplastics that are used a lot in packaging work and have a bright future are polylactides (polysuit acid, polylactic acid-PLA), which is considered a condensation product of lactic acid, as well as aliphatic polyephyr, which has a linear structure. The process of artificial synthesis of lactic acid and its transformation into polylactide is carried out by bacteria. Taking lactic acid by the microbiological method costs almost less than in traditional technological processes. The polymer of lactic acid is thermally stable enough that the liquefaction temperature is 210-2200s and the bottling temperature is close to 900s. Polylactide-colorless, transparent, it is considered resistant to ultraviolet rays, has a difficult flame and burns out very little smoke [5].

Other types of polysaccharides: cellulose, chitin, chitosanes can also be used to obtain bioparching polymers based on natural polymers. Polymers obtained by interacting cellulose with epoxy compounds and dicarbonic acid anhydrides are completely decomposed in the compost state in 4 weeks. From them, all butyls, disposable dishes, films are produced. From the ternary composition (chitosan, microcellulose fiber and gelatin), films with a high consistency are obtained. They have the property of decomposing under the influence of microorganisms when buried in the ground.

Biodegradable polymers used in medicine can melt in this environment without changing their molecular mass when in contact with a living biological organism, or undergo biodegradation according to the following basic mechanism: hydrolysis process, enzymatic hydrolysis and phagocytic disorder (protective reaction of the body's tissues), which go with the formation of oligomer and monomer products. Bioparking polymers, widely used in the surgical field of medicine for sewing skins, are obtained on the basis of water-soluble polymers. In the near future, research is underway to apply biodegradable polymers not only for the purpose of sewing skins, but also to use them as carriers of drugs.

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