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Influence of the absorbed dose of radiation radiation on the destruction of polypropylene, depending on the location of the sample to the electron radiator

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Abstract

Currently, polypropylene is one of the most common polymers in the world. Due to its resistance to high temperatures, strength and density, it has found very wide application in the field of medicine. Polypropylene produces medical devices, pharmaceutical packaging, containers, suture threads. But a special place is occupied by non-woven materials based on polypropylene: surgical underwear, surgical gowns. As you know, to sterilize these products using ionizing radiation, which is the most effective of all methods. However, it leads to the destruction of polypropylene, as a result of which its physical and mechanical properties deteriorate. It is also known that the dose of radiation can vary depending on the location of the product in the box. Thus, materials can be degraded to varying degrees depending on the location in the box from the electronic emitter. As the object of study was selected: PP 1562R polypropylene produced by *OAO Nizhnekamskneftekhim.* It has been established that the location of polypropylene samples upon irradiation has little effect on the degree of their destruction.

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