SIBUR for Clients
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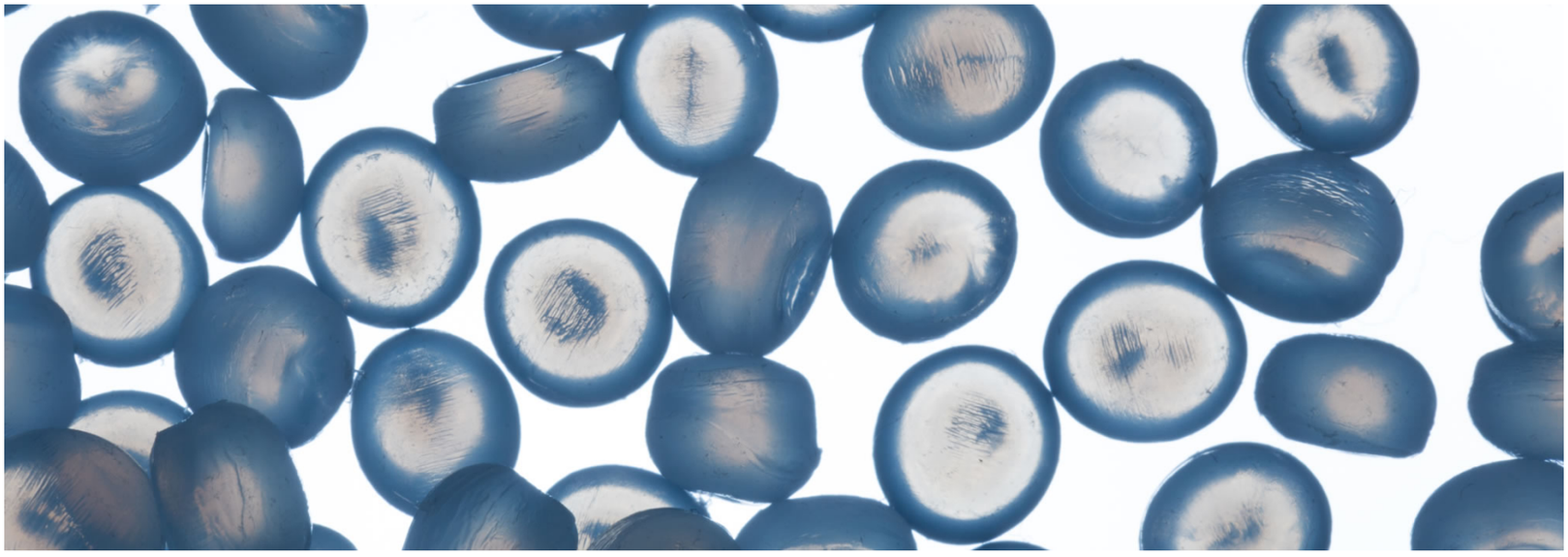

NEW POLYETHYLENE GRADES

SIBUR's R&D centre has developed new LDPE grades to produce polymer packaging for infusion solutions used in COVID-19 treatment.

Infusion therapy plays a major role in modern medicine. It is used in intensive care, surgery and treatment of infectious diseases. Amid the pandemic, infusion is one of the key parts of clinical routine in acute coronavirus cases. Russian producers are increasing the output of infusion solutions, thus boosting the demand for high-quality packaging. Scientists from SIBUR's R&D centre have developed new low-density polyethylene (LDPE) grades designed specifically for infusion solutions packaging. Unprecedented for the domestic market, these materials will make a sizeable contribution to the Russian pharmaceutical industry.

INFUSION THERAPY IS A TREATMENT METHOD BASED ON ADMINISTERING MEDICATION SOLUTIONS DIRECTLY INTO THE BLOODSTREAM TO IMPROVE A PATIENT'S STATE OR HELP THEM FULLY RECOVER

Nowadays, reaching a stable therapeutic effect and saving a patient's life might require several litres of infusion daily. As it is a crucial treatment tool, its production and packaging must be in line with the most advanced standards. Unlike in the past, when infusion solutions were manufactured at pharmacies and packed in glass vials, modern large-scale production calls for new packaging methods.

Such packaging must comply with up-to-date environmental and hygienic standards, while also being easy and convenient to use and having a competitive price and good storage and transportation properties. Dedicated enterprises usually opt for polymer materials, as they combine relatively low prices and light weight with all the listed requirements to meet the needs of the most scrupulous modern producers.

The packaging for infusion solutions is made using polymers of higher sterility and tightness that are chemically inert (mainly polyethylene, polypropylene and polyvinyl chloride). Their light weight, reliability and resistance to freezing temperatures provide for good product preservation. On top of that, the blow-fill-seal production technology ensures protection against counterfeiting.

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In 2019, NIOST experts developed LD03210 FE, a special LDPE grade aligned to pharmacopeia standards. The grade successfully passed the trials and proved to conform to the European Pharmacopoeia standards. It was tested by leading blow-fill-seal equipment manufacturers in Germany and Italy, which confirmed its highest quality and helped obtain a Certificate of Suitability to the Monographs of the European Pharmacopoeia (CEP). Now, the polyethylene grade is undergoing large-scale testing by Russian manufacturers of infusion solutions.

In 2020, NIOST has developed another polyethylene grade in compliance with pharmacopoeia standards, LD03270 BM. The distinguished features of the grade are its increased density and tolerance to high temperatures that provide for better sterilisation and product intactness. The grade has successfully passed the testing at an Intertek laboratory in the Netherlands. Soon, a CEP will be obtained and the grade will be offered to our clients to undergo testing.

Both grades will be produced at SIBUR's Tomsk facility (Tomskneftekhim). Nearly 40 g of polymer will be enough to manufacture a 0.5 litre infusion bottle. The decision on output volumes will be made once the client testing of the products is over.

Sergey Komyshan, SIBUR's Management Board member and Executive Director, commented: "Our polyethylene grade is the first in Russia to conform to the pharmacopeia standards. The new products developed by SIBUR will help phase out imported products, boost domestic production of polymer packaging for infusion solutions and reduce the dependence on foreign-made polymers in this key medical segment."