

Pioneering R&D anti-virucidal films project

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WHITE PAPER

Why is it suddenly difficult to buy plastic components in 2021?



In this white paper, Dave Splett, vice president of business development, Injectech, a medical component manufacturer, shares his insight into the current situation. [READ MORE](#)

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The global pandemic has highlighted the need for a reliable supply of PPE to the healthcare professionals and essential workers that the rest of us rely on to keep our lives running as smoothly as possible. The materials used in these products are crucial, delivering comfort and protection to those that need it most, so the development of anti-virucidal films specifically for face shields is welcome.

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As the understanding of COVID-19 evolves, the demand for products that support essential workers at this time are changing too, particularly as the wider public is largely ready to get back to the 'old normal' now that we've had enough of the 'new normal'. Reliable, practical PPE has been in incredible demand over the past year, and this is likely to continue, as our appreciation for how quickly a virus can have such a devastating impact on our daily lives is evident.

Although the initial scramble of face masks and hand sanitiser has passed, we now see a great opportunity for the development of added value PPE that deliver on more than just emergency care. Rather, there is a chance to make keeping our essential workers safer in greater comfort.

One such project is the development of plastic film for face and eye shields with anti-virucidal properties integrated into the film at RETAL Baltic Films, which has recently gained funding from the European Union Funds Investment Operational Programme under its 'aid for tangible investments in COVID-19 R&D projects' initiative.

The RETAL Baltic Films team prove the potential benefits of a plastic film with anti-virucidal properties in the complex epidemiological situation regarding the spread of the SARS-CoV-2 virus and the incidence of COVID-19 specifically with regard to the protection of medical staff.

General manager Viktorija Griziene explains: "In the early days of the pandemic we quickly modified our existing APET film for food and beverage applications so it could be used for face shields, which we happily donated for the production of face shields and now also produce commercially. We have integrated an anti-fog capability which is highly appreciated by essential workers who often have to wear their masks for many hours at a time, so the transparency and anti-fog aspects are crucial. We are now working on taking our face shield film to the next level by integrating anti-virucidal properties to give an additional level of protection."

Essential protection

According to the US Centre for Disease Control & Prevention, SARS-CoV-2 is primarily spread through airway secretions, and droplets that cause infection with this virus by inhalation or ingestion as well as contact with contaminated surfaces. As protective measures such as face shields are frequently touched and the essential workers wearing them are more likely to be in contact with those infected, the likelihood of infection from what is supposed to be protecting them increases.

Griziene continues: "Our team is working on the development of a product prototype with long-term SARS-CoV-2 anti-virucidal properties without compromising the optical and mechanical properties of the film, so the PET film will be transparent, anti-fog and anti-virucidal. We expect to achieve this by inserting active silver-containing components only into the outer layers of the film and minimising them; the minimised thickness of the active layer is not only cost-effective, it also has a lesser effect on the undesired physical properties of the film."

The RETAL Baltic Films R&D team will be integrating active silver components into the film itself, rather than depositing them on the film, making this project a potentially world-first innovation and a valuable addition to the global fight against COVID-19 and other easily transmissible viruses.

Griziene concludes: "My team and I are inspired to continue to utilise the specific expertise we have gained in the development of this product and predict we will use our knowledge gained to make further developments, such as an anti-virucidal film that can be used for food packaging. We will initially give priority to our local Lithuanian market. The product will be available more widely once the Lithuanian needs have been met, with the finished product offered on the global market, with our target audience being the health authorities where use of these products is mandatory or recommended and the impact of the safety of their workers the most keenly felt."