

Self-Cleaning Russell Eco Filter® replaces static strainers to improve the filtration of adhesives

Lucite relies upon high-performance self-cleaning filter to ensure the quality of adhesive resins and increase production efficiency

Lucite International Group Ltd., commonly known as Lucite, is part of the Mitsubishi Chemical Corporation and is a world leader in the design, development and manufacture of acrylic-based products. The company has many manufacturing plants around the world, producing polymers, monomers, composites and resins for various applications including dental, medical, coatings, adhesives and glass.

At its production plant in Newton Aycliffe, UK, Lucite manufactures a number of premium speciality polymers and resins, specifically designed and developed alongside its customers. Lucite's experience in the acrylics industry allows the plant to develop high-quality acrylic products with unique properties, satisfying customer needs in highly-specialized areas. When seeking ways to optimize quality and efficiency during the production of one of its acrylic resin products, Lucite contacted Russell Finex – global leader of [industrial filtration equipment](#) – for a solution.

Lucite had previously experienced difficulties when filtering an adhesive resin, used in the production of surgical plasters. A key stage of the resin process line is filtration – ensuring oversize contamination such as foreign particles and agglomerates are removed. This guarantees the quality and consistency of the product – a key requirement for a medical application – as well as protecting the downstream process of membrane filtration. However, filtration of these high-viscosity, sticky adhesives can be difficult, and Lucite had encountered problems when using traditional static basket strainers to carry out the filtration process.

John Allen, Manufacturing Development Engineer at Lucite's Newton Aycliffe plant, said, "The static strainers we previously used to filter the adhesive resin product were not meeting our operational or production requirements. The product would often block the filters, and the equipment was very awkward to clean when this happened. We also required an increased throughput rate."

Having previously relied upon the [Self-Cleaning Russell Eco Filter®](#) for other applications, Lucite consulted Russell Finex

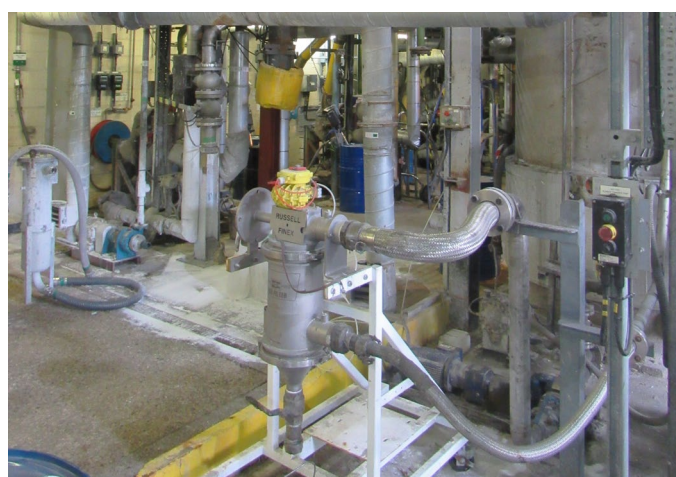



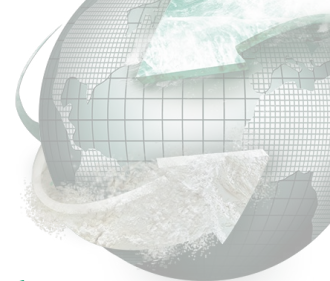


Figure 1. The Self-Cleaning Russell Eco Filter® installed at Lucite International Group Ltd

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Increase productivity – Self-cleaning design eliminates the risk of blockages and reduces the loss of good product
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Reduce production downtime – No stoppages to change blocked and messy filter elements
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Protect product and operators – Fully-enclosed design protects operators from product exposure as well as minimizing contamination risk

once again for a solution to filtering the adhesive resin. The solution was an EF803 Self-Cleaning Russell Eco Filter®. These inline filters provide an efficient solution to ensuring the quality of high-viscosity liquids such as adhesive resins and have the capacity to meet Lucite's required throughput of 400 litres per hour.

The Self-Cleaning Russell Eco Filter® is an efficient, high-performance solution to protecting liquids from contamination. A unique self-cleaning design incorporating the SpiroKlene™ wiper system provides effective and continuous filtration down to 10 microns.



This means no stoppages to change blocked and messy filter elements, no slowing of throughput due to blockages and a reduction in the loss of good product. The filters are enclosed to further protect liquid products from contamination as well as safeguard operators' health and safety. Furthermore, a range of **high-temperature** and **sanitary options** are available, and the filters can be orientated vertically or horizontally for easy installation into existing production lines.

Allen concluded, "We are very happy with the performance of the Russell Eco Filter. For us, the greatest feature is the reliability of the equipment – we don't experience any breakdowns or blockages. The filters are extremely robust, with no intervention needed for maintenance and minimal

operator involvement, meaning our operators can focus on other tasks, ensuring the plant runs efficiently."

At Lucite's Newton Aycliffe site, the company also utilizes additional Russell Finex separation equipment, including several **vibratory separators** to ensure the quality and consistency of polymer beads on a separate production line. Global leaders in separation equipment, Russell Finex has a range of industrial filters and sieving equipment to protect the quality of liquids and powders. From check-screening incoming materials, to screening final products and protecting down-stream equipment and processes, Russell Finex supplies **separation solutions** to manufacturers across various industries including coatings, chemicals, food, pharmaceutical, metal powders and many more.



Figure 2. The Self-Cleaning Russell Eco Filter® at Lucite is used to remove agglomerates from an adhesive resin used for surgical plasters