Ansys

CASE STUDY /

Airinum Uses Ansys Granta Selector to Identify New Textile Materials for Masks, Reducing Environmental Impact

"Ansys Granta Selector™ has given us more knowledge about the environmental impact of our products and where we should focus our attention in the development of new ones. Ansys Granta Selector also helped us to verify whether it is sustainable for us to gather used filters from customers to optimize the recycling process."

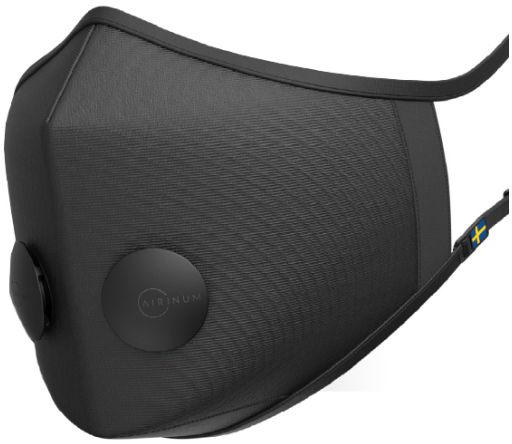
Alexander Hjertström
CEO & Founder / Airinum

CASE STUDY

In identifying suitable textiles for masks, Airinum ensured designs that made sure everyone could breathe comfortably. They depend on partners to suggest textiles that are suitable for mask production. While these partners are experts in different fields like filtering technology, fashioning materials and providing great advice, they are also very focused on their own their fields. Airinum needed to find an additional, more scientific source of data about relevant materials and their properties to optimize their masks' performance and minimize their impact on the environment.

/ Company Description

Airinum seeks to make the world a place where people can live happier and healthier lives by breathing better air. To achieve this vision, they strive to empower individuals to breathe clean air through innovative products and by raising awareness about air quality. The company was founded in 2015 and now has 10 employees. Airinum products are sold worldwide.



/ Challenges

Airinum needed to identify textile materials that are suitable for masks while also minimizing their environmental impact. Masks place a lot of demands on the materials from which they are made because they are worn in such a sensitive place — the face. The material needs to look good, be comfortable to wear, have a low resistance to air flow and be stain-resistant. The filter material needs to provide proper filtering efficiency and Airinum required that the product development process be sustainable.

/ Technology Used

Ansys Granta Selector and its Eco Audit feature. Ansys Granta Selector is the standard tool for materials selection and graphical analysis of materials properties, incorporating a comprehensive database of materials and their properties, including many polymers and fibers. The Eco Audit tool enables rapid estimation of environmental impacts such as CO2 footprint for a product or design concept.

/ Engineering Solution

- Engineers studied the materials in the Ansys Granta Selector database and looked at "Typical Applications" to see whether the materials of interest were used in similar products.
- Ansys Granta Selector informed them about the environmental impact of their mask products and where they should focus attention in their development.
- The Eco Audit tool taught Airinum what parts of their products cause the greatest environmental impact and in what life-cycle phase that impact occurs.
- Eco Audit also enabled the company to easily change figures, such as the weight of the packaging, to see what kind of impact potential changes would have on the environment in the future.

/ Benefits

- Ansys Granta Selector helped Airinum engineers identify new materials to use in their masks.
- They verified that it was sustainable for customers to ship used filters back to them for recycling.
- Airinum was able to measure and reduce the environmental impact of their products while optimizing functionality.

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