

Silicone expertise at the service of mothers of premature babies

To bring its colostrum expressor project to life, Eomaia called on the Exsto Group. The company's expertise in medical silicone enabled it to develop the device's key component: a teat that combines quality, comfort of use and mechanical performance .

According to INSERM, Approximately 55,000 babies are born prematurely in France each year. Their fragility requires special attention, particularly in of nutrition and immunity. Colostrum, the first breast milk, plays an essential role here: it promotes digestive maturation and strengthens the newborn's immune system thanks to its high antibody and nutrient content. In certain conditions such as neonatal hypoglycaemia, its benefits can even be vital. But in reality, the collection of this precious fluid is too often neglected. It takes place in the very first hours after birth, a time when mothers, already fragile, often lack support. On the healthcare side, the reality of neonatal services – marked by staff shortages – limits the availability to support these procedures.

An innovation born from pratical experience

It was this observation, combined with the personal experience of its founder Danièle Pro, a doctor of chemical engineering and biotechnology, that led to the creation of the Nantes-based start-up Eomaia in 2022. Its mission: to design a simple, autonomous device that allows mothers to collect colostrum from the first few hours, or even a few days before birth, while supporting the onset of lactation. Eomaia's medium-term ambition is to see its device integrated into a care protocol dedicated to premature babies.

Although the device developed does not fall within the regulatory category of medical devices, it is nevertheless intended for a vulnerable population. Its design therefore required the same standards of quality, safety and performance as a medical device.

A medical silicone part molded in a single operation

To bring this project to fruition, Eomaia drew on the expertise of Exsto, specialised in medical silicone for nearly 30 years. The goal was to co-develop a colostrum expressor that combines effectiveness, ergonomics and safety.

The main challenge was to find the optimal balance between ease of use and mechanical performance, while maintaining a high level of quality. Inspired by the morphology of the of the infant, the device had to combine flexibility—to ensure painless use—and rigidity—to ensure effective extraction.

The design proved particularly challenging due to the need for a perfectly smooth inner surface, without any joints, in order to ensure smooth milk flow. Thanks to its expertise in tool design, Exsto was able to develop a molded part in a single operation. In addition, optimising the surface finish significantly improved the device's performance.

This project was made possible thanks to close collaboration between the technical teams at Exsto Cavaillon and Eomaia, in conjunction with neonatology professionals and SQI, a medical device regulatory consulting firm. Manufacturing is carried out in a clean room, using materials that comply with food standards and processes similar to those used for medical devices.

Through this innovation, a discreet but decisive advance for the most fragile, Exsto reaffirms its commitment to improving the living conditions of newborns and their families, and aims to contribute to the development of new and increasingly innovative medical devices.

ABOUT

Based in Romans-sur-Isère (France, Drôme), Exsto has 365 employees spread across eight sites, including the one in Cavaillon (Sterne), which is featured in the case study.

www.exsto.com

www.eomaia.fr



Source : Exsto

The silicone part is distinguished by a perfectly smooth inner surface with no mold line.

Colostrum expressor with medical-grade silicone teat.



Source : Eomaia