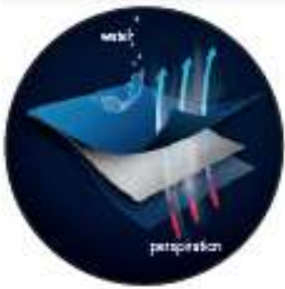


## BREATHABILITY, A BENEFIT OF MODERN TECHNOLOGIES.

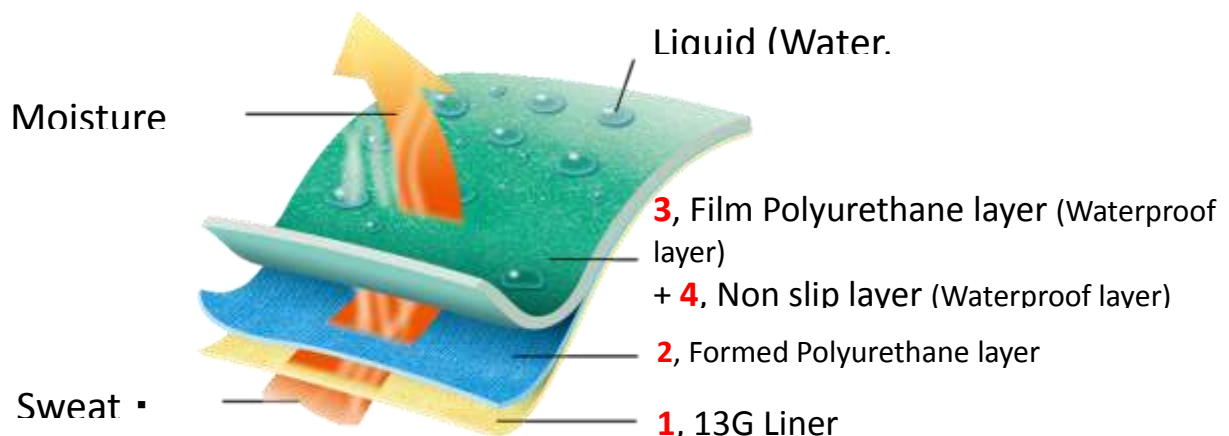


TEM•RES technology enables the combination of the apparently-opposing but important features, Waterproof property and Breathability, in one glove.

It was 19 years ago that SHOWA started to develop the first type of TEM•RES. R&D was initially targeting the cleanroom industry because there were not many polyurethane gloves in the market at that time. SHOWA tried to apply the cutting-edge technology for the most advanced market. After 4-years of research, the first prototype of a fully coated polyurethane glove was turned out.

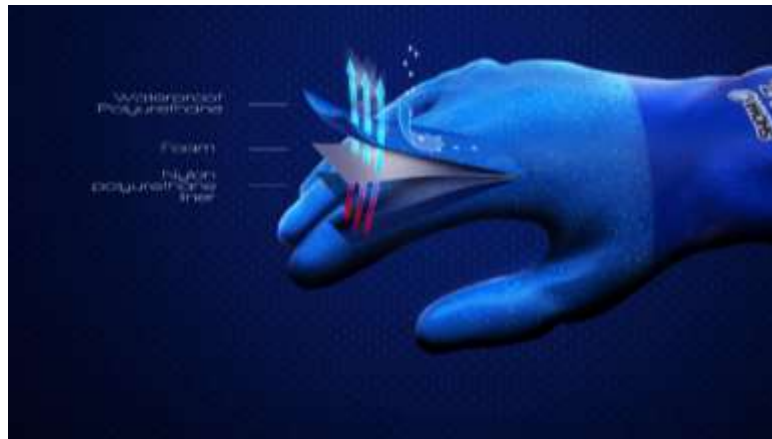
However, despite all the efforts and investment, success was not here. The glove did not respond enough to cleanroom operations needs where users required more dexterity.

Although SHOWA was not able to launch the first glove for the cleanroom industrial market, one idea came up that breathability and waterproof properties could meet agricultural industry needs, where workers do their job in a wet environment but also tend to feel uncomfortable getting hands moist while working. To give a bright solution to the marketplace, SHOWA R&D made various improvements such as product color, additional anti-slip property and easiness of putting on and taking off through the cumulative experiments and trials. In 2005, the new TEM•RES was launched. It was challenging to promote this revolutionary glove in the earliest years, however, its uniqueness and the quality of TEM•RES became recognized in the market gradually.



The basis of this TEM•RES technology comes from molecular size difference between water and water vapor. The molecular size of water (liquid) is 100 to 3,000  $\mu\text{m}$  (dia.): on the other hand, water vapor/moisture is 0.0004  $\mu\text{m}$  (dia.). Our engineers used the significant molecular size difference, to create two main membranes into the TEM•RES 281 glove: one for its breathability and one for waterproofness properties.

Concretely, one membrane is made from porous foamed polyurethane, helping moisture come out easily and allowing the hand to dry promptly. The other one is the outermost layer made from hydrophilic polymer, which is permeable molecular moisture but not to water. This is the essential mechanism applied for **TEM•RES 281** and 282 (**TEM•RES 282** winter version). The breathability allows hands to stay dry. At the same time its waterproof property still protects the hands from water and liquids.



**TEM•RES 281** is a result of our further improvement and modification after the first model. More durability and dexterity are added and glove shape is improved as well. We have still been making efforts and aim to expand the **TEM•RES** family so that more and more users are happy with **TEM•RES** allowing hand protection and keeping hands dry.

**TEM•RES 281**



**TEM•RES 282**



#### VIDEO YOUTUBE

<https://youtu.be/Lyfx2F2-45A>

<https://youtu.be/cGWS1KS0wLw>