

## SHISEIDO develops revolutionary WetForce

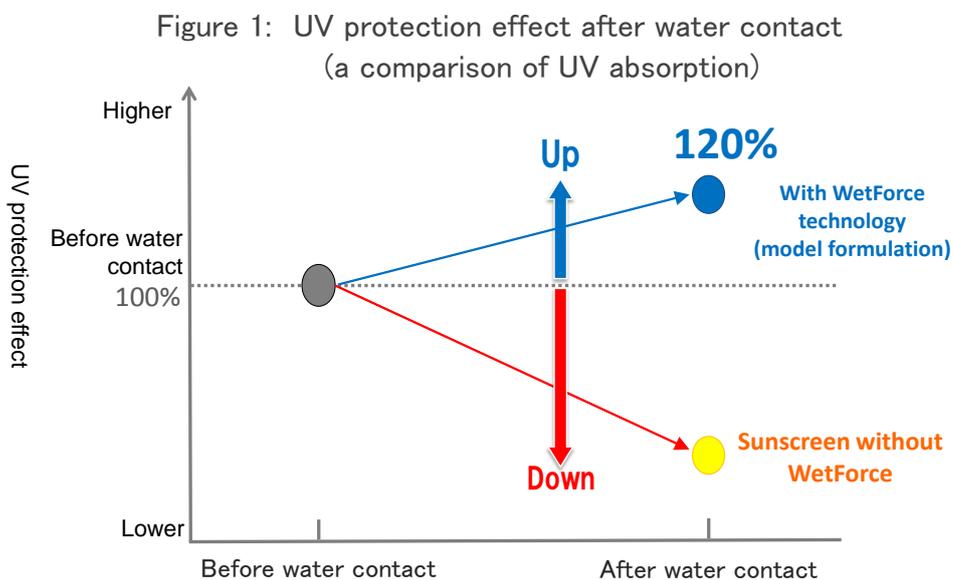
### The world's first sunscreen technology that gains power through contact with water or perspiration

TOKYO—[SHISEIDO](#) (TOKYO:4911) has been actively pursuing stronger UV protection technology that maintains its performance even when exposed to water or perspiration, to shield the skin against UV in a variety of common situations, including outdoor leisure activities.

As a result of the most recent research and development, SHISEIDO has successfully developed WetForce sunscreen technology (See figure 1, patent pending), the first in the world that interacts with the minerals in water and perspiration, defying common sense as its sunscreen film becomes more uniform, smoother and stronger upon contact with water or perspiration. This creates a more uniform UV shield, with about 120%\* higher protection effect.

WetForce technology will be incorporated in sunscreen products to be launched next spring.

\* UV protection effect before water contact calculated as 100%



#### Background of the development

To meet the needs of customers who want to protect their skin from every conceivable negative effect of UV, from everyday life to harsh outdoor situations, SHISEIDO has developed technologies for sunscreen that is pleasant to apply, offers UV protection with maximum tanning resistance, has excellent waterproof properties that keep UV protection from declining even after sports or swimming, and comes off easily with facial cleanser or soap, requiring no special removers.

Because conventional sunscreen technologies were incapable of maintaining their full UV protection effect after contact with water or perspiration, SHISEIDO researched and developed ways to prevent this decline. SHISEIDO focused on the minerals contained in water and perspiration and turned convention on its head by asking “what if water contact could improve the performance of a sunscreen film applied to the skin, actually enhancing the UV protection effect?” With this approach, SHISEIDO embarked on a new path of research and development.

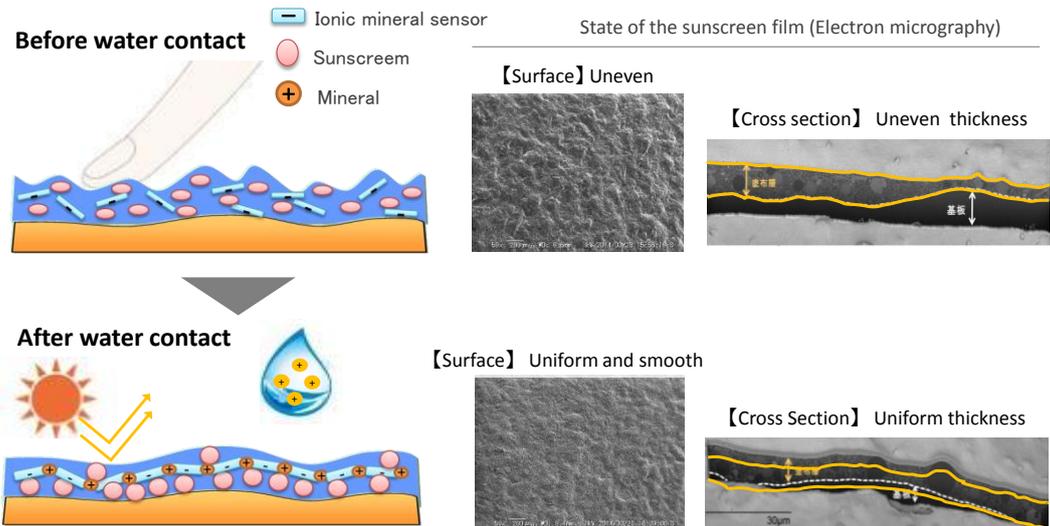
**Research and development of WetForce**

In SHISEIDO’s research and development, the company focused on the relationship between minerals, such as the calcium ions and magnesium ions in tap water, sea water, perspiration, and the components that make up the film in sunscreens.

This resulted in the discovery of an Ionic Mineral Sensor, a technology that causes the minerals in water or perspiration to bond, improving the water repellency of the sunscreen, and making the sunscreen film on the skin more uniform, smoother, and stronger, with a higher protection effect.

This new technology will be incorporated into sunscreens in addition to the features already developed by SHISEIDO, such as easy removal without the need for special cleansers, and a texture that is pleasant to use (See figure 2).

Figure 2: How WetForce works



- UV protection ingredients are incorporated into the ingredient that bonds with minerals to improve the water repellency of the sunscreen. This makes the film become stronger, more uniform, and smoother than it was when it was first applied, enhancing the UV protection

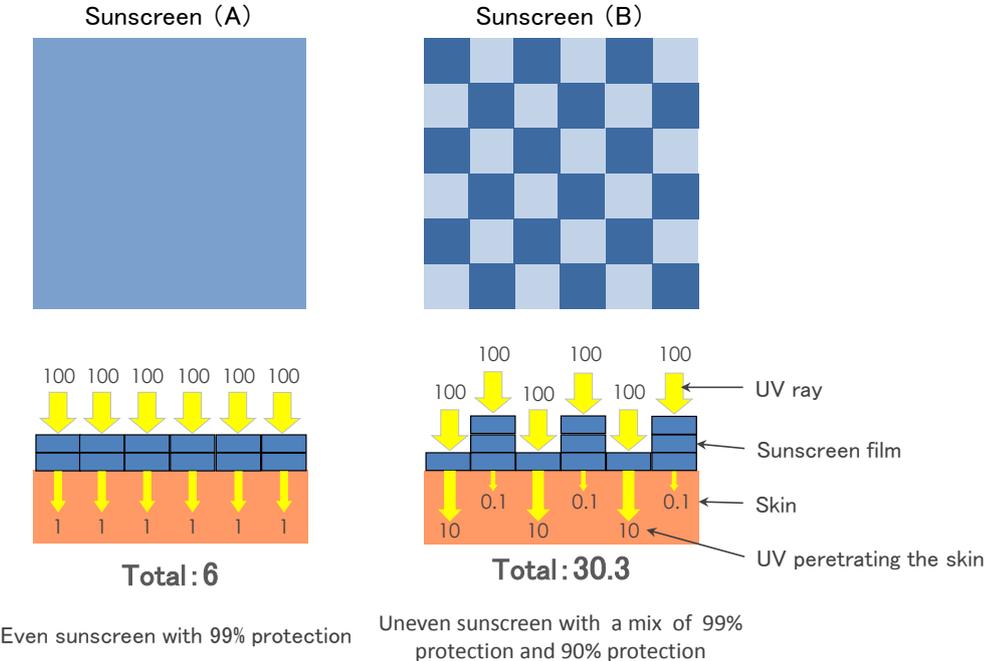
Different sunscreen products may contain the same type and amount of UV absorbent and still provide varying degrees of UV protection, depending on the uniformity of the films they create on the skin.

Figure 3 compares Sunscreen A, which is applied as a uniform film and blocks 99% of UV, with Sunscreen B, which is applied unevenly so that half of the applied area is 90% blocked, and the other half is 99.9% blocked against UV. The UV protection effect of Sunscreen A is approximately five times as high as that of Sunscreen B, (Calculated on a formulaic basis: See figure 3) illustrating the importance of a uniform sunscreen film. Conventional sunscreens however, become compromised when in contact with water or perspiration, causing a decline in the uniformity of the film, and a related decline in their UV protection effects. The challenge SHISEIDO took on was to overcome this common problem, and to keep this decline from occurring.

The newly developed WetForce technology emerged as the innovation that, when exposed to water or perspiration, makes the sunscreen film more uniform and smooth, enhancing its UV protection effect on the skin.

SHISEIDO scientists see vast possibilities for WetForce, and they are exploring more UV protection products that incorporate it, to help people in all areas, with all types of skin, enjoy active lives outdoors, even under the strong summer sun.

Figure 3: Even sunscreen has stronger protection .



This technology is also introduced on the [PICK UP TECHNOLOGY](http://www.pickuptechnology.com) website that introduces Shiseido’s R&D for the “beauty” area of the R&D section in the SHISEIDO GROUP website.

URL [http://www.shiseidogroup.com/technology/detail/31.html?rt\\_pr=wetforce01](http://www.shiseidogroup.com/technology/detail/31.html?rt_pr=wetforce01)