

## A Solution to Water Spots and Heat Accumulation Peculiar to a Sunroof "UNIGLOBE Sunroof Protection Film" is Released.

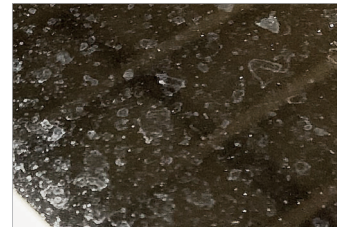
Announcement of the 3rd UNIGLOBE TVP Total Solution

FE TRADE CO., LTD starts offering "UNIGLOBE Sunroof Protection Film", the external protection film for sunroofs with a heat-absorbing type thermal insulation function and a water-repellent function which physically protect a sunroof from outside. This product is the 3rd proposal of the new protection category that UNIGLOBE TVP, Total Vehicle Protection, puts forward. UNIGLOBE will keep evolving protection film business and offering total solutions.



### ■ Background of the Launch

Recently, more and more different shapes of sunroofs, not only in terms of spaciousness but also functionality like visibility, are increasing. However, issues like water spots attached on a sunroof arise as well. This is caused by heat coming into the vehicle in exchange for spaciousness. Currently, a thermal insulation film is generally installed inside to prevent heat, but it is not able to protect a vehicle from external damages, such as water spots by acid rain, dirt, and scratches. This product was developed as a physical protection for sunroofs having a heat-absorbing type thermal insulation function, a high water-repellent function, and excellent weather resistance, while also having the same effects as internal window films. It was released as a completely new protection business category that made much higher protection possible.



Water spots peculiar to a sunroof

### ■ Characteristics of the Product

#### ◎ IR reduction rate 90%

Provides both spaciousness and comfortable temperature inside a vehicle.

#### ◎ Physical protection

Protects a sunroof from damages like water spots.

#### ◎ Water-repellent function

Reduces dirt and spots attached on a sunroof after rain.

#### ◎ UV reduction rate 99.8%

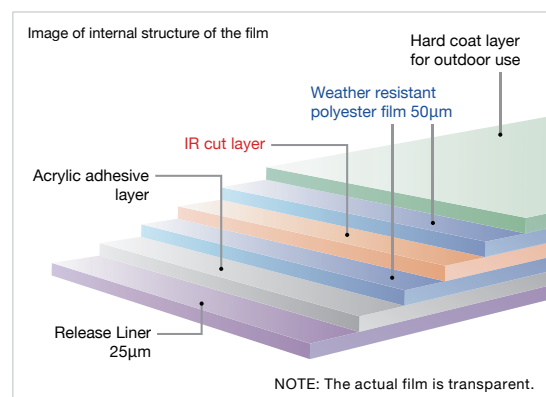
Prevents deterioration and discoloration of interior equipment by the sun.

#### ◎ Visible light transmittance 90%

Does not disturb spaciousness. Transparent as if it were not there.

#### ◎ You can install it immediately if you have experiences of window film installation.

Thermoforming one-sheet installation by using a heat gun is also possible.



NOTE: The near-infrared ray reduction rate is measured by our own measuring method. This value is calculated by subtracting the average transmittance value in the wavelength range of 1,500nm to 2,200nm from 100%.

## ◎ Physical data

### 【 Optical characteristics 】

Weatherability test	Visible light		UV	Solar radiation			Shading coefficient	Heat transmission coefficient (W/m <sup>2</sup> K)
	Transmittance (%)	Reflectance (%)	Transmittance (%)	Transmittance (%)	Reflectance (%)	Absorptance (%)		
Before test	91	8	0.1	83	7	10	0.98	6.0
500h	91	8	0.1	82	7	11	0.98	6.0

NOTE: The above data consists of actual measured values based on JIS S 3107 : 2013 Adhesive film for automotive windows. These values are not guaranteed.

→No significant change found by the weatherability test equivalent to 3 years.

### 【 Physical performance 】

Weatherability test	Adhesiveness	Hard coat adhesion	
	(N/25mm)	Cross cut	Grid / 100
Before test	9.2	No flaking	100
500h	10.0	No flaking	100

NOTE: Adhesiveness is an actual measured value based on JIS S 3107 : 2013 Adhesive film for automotive windows. This is not guaranteed.

## ■ From the Section in Charge

To prevent heat and water spots which have been a concern of a sunroof, it became a concept to physically protect a sunroof from the outside. As a result of the pursuit of the concept and utilizing our accumulated know-how, we were able to reach a physical solution. This product is suitable for the diversified sunroofs of recent years. As a new category of protection, we are quite sure that it will play a role.

## ■ Product Summary

Product Name : UNIGLOBE SUNROOF Protection Film [ Sold in cuts ]

Size : Width 1,250mm ( sold in cuts by increments of 10cm )

## Contact Details

<https://www.fe-trade.com/page.php?pld=32>

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