



PUTTING RIDING GEAR
WITH ADVERTISED UV RAY
PROTECTION TO THE TEST

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Motorcyclists might not give it a second thought, but with each passing mile on the road we are exposed not only to the elements we can sense, but to the sun's UV rays, which we cannot sense. Over time, this exposure can have a profound effect on our gear and, more importantly, our health.

WHAT IS UV?

Ultraviolet wavelengths reach the earth, originating from the sun. They are invisible to the naked human eye, because they are shorter than the wavelengths of visible light.

UV wavelengths are generally classified into three portions, which are measured in nanometers (nm—one billionth of a meter): UVA (320-400 nm), UVB (280-320 nm), and UVC

(100-280). UVC is absorbed by the atmosphere's ozone layer, so it's not much concern to us. However, UVA and UVB can cause plenty of damage by themselves.

Prolonged exposure to these wavelengths is a primary cause of skin cancers, such as basal cell and squamous cell carcinoma, as well as melanoma, the deadliest form of skin cancer.

In addition to these serious afflictions, UV can cause myriad issues, including premature skin aging, irreversible eye damage and immune system suppression.

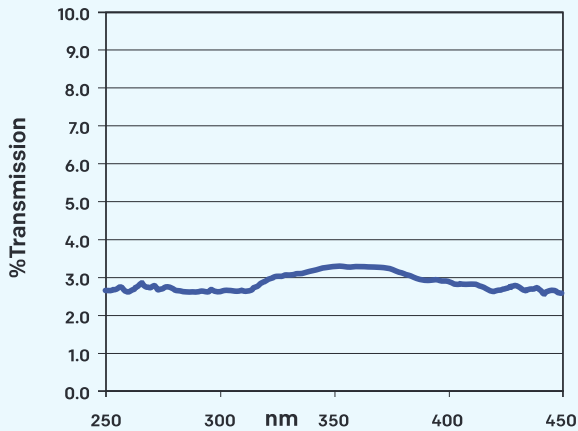
CATCHING Rays

YOUR GEAR'S UPF RATING

In addition to its primary function of saving your hide in the event of a crash, your gear also serves as a protective layer between the sun's relentless UV rays and your sensitive skin. To this end, a type of spectral transmission analysis called Ultraviolet Protection Factor (UPF) can quantify exactly how much UV radiation permeates the fabric.

For example, a jacket with a UPF rating of 30 means that only 1/30th of the sun's skin affecting UV radiation can reach the rider's skin. The UPF Rating Scale is 15-50, with a designation of

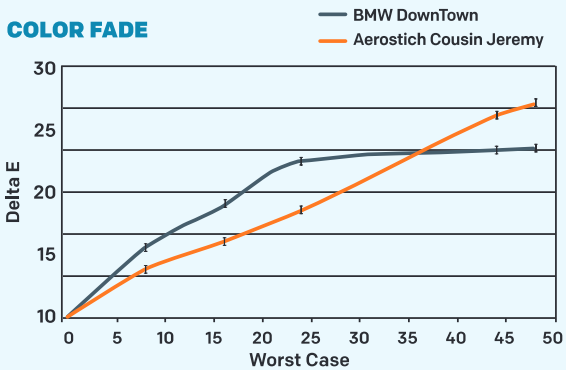
UV TRANSMISSION DATA



ANALYSIS

It is clear that heavier 3 season jackets like the Aerostich Cousin Jeremy and BMW DownTown easily achieve the highest possible UPF rating of 50+, which appears as a flat line on the X-axis in the graph above. Virtually no UV can penetrate the fabric shell. In fact, even a lightweight summer jacket such as the Scorpion Ascendent (shown in purple in the graph above), which we measured through its mesh paneling as point of reference, achieved a UPF rating of 25, which is still objectively considered very good. Thus, motorcyclists who don even light summer mesh gear over bare skin are assured high levels of protection.

COLOR FADE



good for values between 15-24, very good for values between 25-39, and excellent for values of 40 or higher.

UPF ratings are becoming more prevalent in the civilian clothing industry as people seek alternatives to sunscreen lotions, but thus far are not common in motorcycle garments. Utilizing a freshly calibrated Solar Light Company, Inc. SPF-290AS UV Transmittance Analyzer, we were able to objectively compare some jackets we currently have in the testing fleet to the American UPF Standard AATCC183.

UV'S DAMAGING EFFECTS ON GEAR

In the process of shielding your skin from the sun over time, gear itself endures the abuse instead, which can eventually cause permanent damage.

The pigments and dyes used in the fabrics can fade, sometimes severely. In extreme cases, the material itself may degrade, potentially compromising its effectiveness in a crash.

In order to determine the effects of UV on our aforementioned test samples, we ran each of them under a state of the art Solar Light Company, Inc. 16S-Series 150 watt Solar Simulator. This device produces a fully calibrated UVA+B spectrum (280-400 nm) with enough power to simulate one year in the desert sun in only 7.7 days of exposure.

For the purposes of this test, the Simulator's UV output was concentrated into a 0.8-in spot beam which hit the samples directly, allowing us to study the effects of 48 months of mid-latitude or 32 months of extreme desert sun exposure after only 31 days of irradiation, objectively tested to the UV portion of the ASTM D2565 Standard.

ANALYSIS (SIDEBAR, LEFT)

The Aerostich Cousin Jeremy and BMW DownTown, both premium jackets, were subjected to a "worst case" aging scenario which simulated 32 months exposure to a desert region like Arizona. The test simulates exposure as though the rider was directly under noontime desert sun,

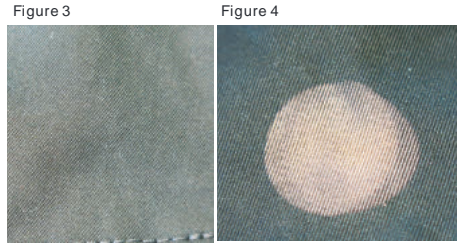
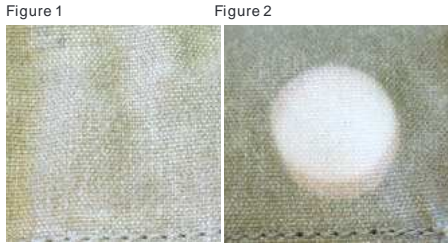


Figure 1
Figure 2
Aerostich Cousin Jeremy fabric in pre-test (Fig. 1) and post-exposure (Fig. 2), is shown in comparison to the BMW DownTown

Figure 3
Figure 4
jacket in pre-test (Fig. 3) and post-exposure (Fig. 4). Each was subjected to a simulated 25 months of intense UV ray exposure.

according to the annual average desert sunlight cycle—quite a brutal sequence.

The Y-axis on the chart displays the Delta-E, or the objective measured change in color of the fabric over time. A Delta-E change of 2 or higher is visible to the naked eye, and both jackets hit that point after the three month mark.

The light tan colored Cousin Jeremy had a more linear fading curve than the BMW, as its 10-ounce waxed cotton shell wore steadily and evenly over time, eventually exceeding the DownTown's fade level at the 36-month mark.

Figure 1 (above, left) shows the Aerostich pre-testing, and Figure 2 shows the Aerostich post exposure.

The much darker DownTown polyester shell had a noticeably steeper fading curve until the 25-month mark, where it plateaued and faded much less.

Figure 3 (above, right) shows the DownTown pre-testing, and Figure 4 shows the DownTown post exposure.

To be certain, both of these garments performed superbly, a testament to the manufacturers' careful selection of durable pigments, dyes, and UV inhibitors in the shell fabrics. Most consumer-grade apparel fabrics are bleached white within a year using the same simulated UV stress-testing cycle.

CONCLUSION

Those of us who choose to wear good quality gear on each ride are continually protecting ourselves from the devastating effects of prolonged UV exposure while upright, not just from the pavement in the event of an accident. Overall, as expected, even the lightest weight jacket here (Scorpion Ascendant) provided very

good shielding from UV rays. Welcome news for the fair skinned, those who spend a good deal of time riding in high elevation, high temperatures or close to reflective surfaces, like water.

Faded garments are rightfully seen as a badge of honor by some riders, but only if they required serious saddle time to achieve the aesthetic. Both the BMW DownTown and Aerostich Cousin Jeremy more than qualify in this regard.

Discerning motorcyclists expect increased longevity in exchange for our hard-earned dollars. In response, garment manufacturers must take precautions to ensure that the "bleached look" doesn't arrive prematurely by using effective UV inhibitors, pigments, and dyes, as well as by formally testing production material samples to ensure that quality standards and expectations are met. MCN

UV GEAR RATINGS

Jacket	Type	Primary Shell Material	UPF Rating Per AATCC183	Rating
Aerostich Cousin Jeremy	General Purpose 4 Season	10 oz. Waxed Cotton	50+	Highest Possible Excellent
BMW DownTown 3 Season	General Purpose (Cold Weather)	Polyester	50+	Highest Possible Excellent
Scorpion Ascendant	General Purpose (Warm Weather Mesh)	Polyester / Nylon mesh	25 (through mesh paneling)	Very Good