

Working under the sun? Learn about its hazards and how to protect yourself

Understanding the hazard and ratings:

Hazard from the sun?

Sunlight, which is a major source of Ultraviolet (UV) radiation, has a wide range of positive health effects but, long-term sunlight exposure is known to be associated with the development of skin cancer, skin aging, immune suppression and eye diseases such as cataracts.

What are some health hazards of exposure to UV radiation?

Sunburn (erythema) is the best-known acute effect of excessive UV radiation exposure. The severity of the effect depends on the wavelength, intensity, and duration of exposure.

Over the longer term, UV radiation induces degenerative changes in cells of the skin, fibrous tissue and blood vessels leading to premature skin aging, photodermatoses and actinic

keratoses. Another long-term effect is an inflammatory reaction of the eye. In the most serious cases, **skin cancer** and **cataracts** can occur.

All personnel working outside should be prepared to protect themselves from over exposure of ultraviolet radiation.

What about the ratings?

UPF stands for Ultraviolet Protection Factor. It is the ratio of the average effective ultraviolet radiation (UVR) irradiance transmitted and calculated through air to the average effective UVR irradiance transmitted and calculated through fabric. It is the amount of ultraviolet radiation that a fabric blocks. Fabrics are tested for UPF ratings.

The following fabric qualities contribute to the chances that a particular garment will have a good UPF rating:

- Darkness of color
- Tightness of weave
- Fiber Thickness – Heavier is better
- Resiliency / stretch ability

SPF stands for Sun Protection Factor. It is the ratio of UV radiation dose required to produce recognizable redness on skin that has been protected with a sunscreen to UV radiation dose required to produce the same redness on unprotected skin. SPF indicates how much longer it will take for skin to begin to redden with the product on than if the skin was unprotected. Lotions/creams are tested for SPF ratings.

UPF 50+

Viking UPF 50+ garments use specially treated pre-washed fabrics that block 97.5% of UV radiation in regular as well as lighter weight garments like t-shirts. The protection will not wash out with normal wear and care.

The percentage of burning UV rays that a product blocks does not increase proportionally with the SPF value.

Ratings continued...

UVA is a long wavelength ultraviolet ray from the sun. UVA rays are the "aging" rays in the UV spectrum. UVA radiation ranges from 320 to 400 nanometers in wavelength. Some wavelengths in that range have greater potential to cause damage than other wavelengths. UVA radiation is stronger in the early morning and late afternoon when the sun's rays reach the Earth at an angle.

UVB is a medium wavelength ultraviolet ray from the sun. UVB rays are the "burning" rays in the UV spectrum. UVB radiation ranges from 280 to 320 nanometers in wavelength. Some wavelengths in that range have greater potential to cause damage than other wavelengths. UVB radiation is stronger between late morning and early afternoon when the sun's rays are directed straight down at the Earth.

So what does the rating mean?

UPF 15 - 24
Good UV protection :
Blocks 93.3 - 95.9% of UV radiation

UPF 25 - 39
Very good UV protection :
Blocks 96.0 - 97.4% of UV radiation

UPF 40 - 50+
Excellent UV protection :
Blocks 97.5% of UV radiation

The UPF ratings for level of protection found in the fabrics are classified by ASTM International as follows: These ratings comply with AS/NZS 4399 Australian/New Zealand Standard for Sun Protective Clothing, tested under AATCC Test Method 183.

Most garments of a weight of 280gsm or higher should achieve UPF 50.

How to protect yourself?

What are some of the ways to protect yourself when working under the sun?

Ways to limit exposure to the sun's UV radiation include wearing protective clothing and hats, and applying sunscreens.

Protective clothing can include long pants, hats, and long-sleeved shirts.

Viking UPF50+ garments use specially treated pre-washed fabrics that blocks 97.5% of UV radiation in regular as well as lighter weight garments like t-shirts. The protection will not wash out with normal wear and care.

Other methods include, applying sunscreens.

Sunscreens are rated according to Sun Protection Factor (SPF), an index of protection against skin erythema (reddening of the skin). SPF ranges from 1-50 or more. The higher the SPF is, the more protection it offers from UVB radiation.

SPF 15 sunscreen may absorb more than 92 percent of UVB radiation

SPF 30 sunscreen may absorb 96.7 percent

SPF 40 sunscreen may absorb 97.5 percent of UVB radiation