Blue light and skin damage

DISCOVER ECSA CHEMICALS SOLUTION FOR PREVENTION AND TREATMENT



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What is it?

Blue light has very short, high-energy waves (between 400 e 500 nm)[1].

In fact, they are only slightly longer and less powerful than ultraviolet (UV) waves (which are too short for people to see with the naked eye).

Blue light, like other colours of visible light, is all around you. The sun emits blue light. So do fluorescent and incandescent light bulbs. Human beings are exposed to more blue light than ever because of the widespread use of devices that rely on lightemitting diode (LED) technology. Computer and laptop screens, flat-screen televisions, cell phones, and tablets all use LED technologies with high amounts of blue light.



Effects on human health

A 2020 study [2] published in the Indian Journal of Ophthalmology found that during COVID-19 lockdowns, for example, 32.4 percent of the study population used a blue-light-emitting device 9 to 11 hours a day. Another 15.5 percent used the devices 12 to 14 hours a day — a sizable increase in screen time, probably due to changes in the way people work during the pandemic.

So far, research does not appear to validate the concern about blue light eye damage. While some animal studies [3] have shown that blue light can damage cells in the retina, eye doctors [4] say there is little proof that blue light damages the retina of the human eye. One recent exception: doctors reported that a woman who used a LED face mask [5] to improve her skin had distorted vision and a retinal lesion afterward.

Researchers [6] point out that because LED devices are relatively new, there aren't any long-term studies to measure what blue light may do to your eyes over the course of your lifetime.



ECSA is now offering two ingredients that can be used to formulate finished products that help to reduce the effect blue light:

Marine powder



The marine powder is a marine active ingredient obtained by the dried powder of Tahitian Black Pearl plus Mother of Pearl powder plus Algae powder and Sea Water powder obtained by the pressure of a particular strain of sponge from French Polynesia and Italy. The liquid form is extracted by a mixture of water/propylene glycol. The regenerative and re-mineralizing properties of seawater together with the pearl and mother of pearl aminoacyl make it a particular ingredient for the skincare final product. The seawater microalgae content gives action for sensitive skin, soothing and against the UV and blue light with natural skincare. Mother of Pearl and Pearl compound add anti-aging action with 20 amino acids including the ones that heal and maintain the cell in the human body.

Urbluray MS



Urbluray MS is a fully restorative material from a natural plant source. The core ingredients come from Medicago sativa (Alfalfa) from Tibet, China. This extract is called "miracle grass" by local people because it brings huge economic and ecological benefits to local Tibetans. It can survive in large numbers in high-altitude Tibet, where the environment is harsh and ordinary plants are difficult to grow. It is a safe and efficient anti-blue light material, which can not only defense against blue light but also repair the skin damage caused by blue light and UV.



Urbluray MS Specification

Herebelow some more info about Urbluray MS:

INCI Name:

Butylene Glycol, Water, Medicago sativa (Alfalfa) Extract.

Features and benefits:

- Photo-protection: Protects skin from sunlight, computer screen, and LED light by specific absorption of blue light with the wavelength of 400-500 nm.
- Light damage repairing: Has antioxidant effect. Repairs skin damage from inside to outside through ROS signaling pathway and free radicals scavenging.

Applications:

Used in blue light and UV defense/repair products. Suitable for toner, gel, essence, lotion, and cream, etc.

Appearance	Yellow to brownish yellow, transparent liquid
Odor	Slight characteristic odor
рН	4.0-6.0
Density	1.00-1.10 g/cm ³
Refractive index	1.350-1.450
Total flavonoids (UV)	2.0-3.0%
Total Bacteria	<100 CFU/mL
Yeast and molds	<10 CFU/mL
Hg	<0.1 mg/kg
As	<0.1 mg/kg
РЬ	<0.5 mg/kg
Cd	<1.0 mg/kg

Recommended use level:

0.5 - 2.0%

Use method:

Add below 45°C, then stir until mix evenly.

<u>CONTACT US FOR FURTHER INFORMATION</u> Stability test, example of formulation and a complete presentation are available on request





[1]

D. J. Zou L, «Blue light and eye health,» Zhonghua Yan Ke Za Zhi, pp. 65-69, 2015.

[2]

F. A. B. a. S. S. Grandee, «Impact of the COVID-19 lockdown on digital device-related ocular health,» Indian J Ophtalmology, 2020.

[3]

P. C. e. al., «Retinal neuron is more sensitive to blue light-induced damage than glia cell due to di DNA double-strand breaks,» Cells, 2019.

[4]

A. O. Association, Blue-light hype or much ado about nothing, 2019.

[5]

T. G. K. e. al., «Photochemical Retinopathy induced by blue light emitted from a light-emitting diode Face Mask,» Medicine (Baltimore), 2020.

[6]

I. F. a. K. T. Gianluca Tosini, «Effects of blue light on the circadian system and eye physiology,» Mol. Vis., 2016.

