

## DermaGlo™ DGP-20 Luminescent Zinc Sulfide

DermaGlo DGP-20 is a phosphorescent pigment that meets the purity specifications outlined by US FDA (Consult 21CFR73.2995 for specifications and use restrictions). This phosphorescent material responds quickly to excitation by daylight, incandescent, fluorescent or ultraviolet light and produces a bright green emission color. The afterglow effect is dependent on pigment concentration, surface area and the amount of radiant energy absorbed.

### Identification Data

INCI Name:	Luminescent Zinc Sulfide
Chemical Name:	Zinc sulfide, copper chloride doped
Color Index Number:	None
CAS Number:	68611-70-1
EC Number:	271-904-2

### Chemical Specifications

Zinc sulfide	> 99.8 %
Copper	< 105 ppm
Lead	< 20 ppm
Arsenic	< 3 ppm
Mercury	< 1 ppm
Cadmium	< 15 ppm

### Physical Properties

Density:	4.1g/cm <sup>3</sup>
Mohs Hardness:	3.0
Particle Size:	~20 microns, mean
Product Color:	Slightly Yellow
Afterglow:	Green

## Usage Restrictions

The color additive luminescent zinc sulfide may be safely used for coloring externally applied facial makeup preparations and nail polish to the following restrictions:

1. The amount of luminescent zinc sulfide in facial makeup preparations shall not exceed 10 percent by weight of the final product.
2. Facial makeup preparations containing luminescent zinc sulfide are intended for use only on limited, infrequent occasions, e.g., Halloween, and not for regular or daily use.
3. Do not use in the area of the eye.
4. Article 2 (1) (m) of EU Regulation 1223/2009, known as the Cosmetics Regulation defines colorants as “substances which are exclusively or mainly intended to color the cosmetic product, the body as a whole or certain parts thereof, by absorption or reflection of visible light; in addition, precursors of oxidative hair colorants shall be deemed colorants”.

As indicated above, any substance within the meaning of a colorant in cosmetics must be listed in Annex IV to the Cosmetics Regulation.

Importantly, however, Recital 27 of the Cosmetics Regulation explains that: “To avoid ambiguities, it should be clarified that the list of allowed colorants contained in Annex IV includes only substances which color through absorption and reflection and not substances which color through photoluminescence, interference, or chemical reaction.”

Taking into account that DGP-20 colors through photoluminescence, it is not caught by the definition of a colorant in accordance with the Cosmetics Regulation. As a consequence, it is not subject to Annex IV to the Cosmetics Regulation establishing a positive list of colorants in cosmetic products.

On this basis, we believe that the use of DGP-20 in cosmetic products must be considered as an ingredient that is not prohibited or restricted and does not correspond to an ingredient category for which a positive listing would be required, including colorants. Therefore, pursuant to the EU Cosmetics Regulation the use of DGP-20 in cosmetic products is permitted provided it is demonstrably safe.

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