

Technical Bulletin

TEC Accessories Embrite™

Proprietary Glow-in-the-dark Material

Embrite™ is the cutting edge of resin-based, phosphorescent composite material available today. This proprietary material is manufactured only by TEC Accessories using a special process we have developed and refined to achieve the best possible performance. It is the brightest glow in the dark material available anywhere on the planet. If you want the absolute brightest glow material, choose Embrite™.

The method used to provide the desired glow effect is based on a charge/discharge cycle. You must first charge the Embrite™ material with light, which is then stored and slowly discharged over time. In order to achieve the best possible results from the material, please review the following tips regarding light exposure and charging times.

Charging the Embrite™ Material

The material itself charges most effectively when exposed to the UV portion of the light spectrum (between 10 and 400 nm). The broadband spectrum of sunlight does an excellent job as a charging source, as well as UV lights and CFL bulbs but the material will also absorb an appreciable charge when exposed to indoor ambient room light. Increased exposure time to a light source will increase the initial brightness of the glow and extend the time the material remains glowing. The brighter the charging source, the brighter the material will glow.

Embrite™ material that is charged in ordinary sunlight or room light for an extended period will have a noticeable glow when the lights are turned off. This glow will diminish gradually over the course of several hours until the energy it stored while charging is totally depleted. Although the glow intensity will fade considerably over a long duration of time, it is not uncommon to still see a recognizable glow after 8-12 hours, especially with dark-adapted vision in a completely dark environment. This charging and discharging cycle can be performed an infinite number of times. There is very little performance depreciation over the long-term life of Embrite™.

It is important to note however, that if you view the material in normal room light IT WILL NOT GLOW! It must be dark in order to see the glow effect. This may seem obvious, but the brighter the ambient light is, the lower the intensity of the Embrite™ glow. Conversely, the darker the ambient room light is, the brighter the glow effect will appear. If you view Embrite™ outside at night, it will not be as bright if you view it on a lighted city street as compared to a dark country road. These distinctions are important to clarify, in order to accurately represent your expectations of Embrite™

Surface Finish of Embrite™ Material

Embrite™ material is sold in various forms, including our standard glow fob product line, rectangular morale patches, and a variety of rod sizes for OEM applications. The material is formed using a cast mold process and

will generally have a smooth/polished surface finish on all cosmetic surfaces. We have optimized our manufacturing process to provide the finest uniformity and surface finish possible, however there may be small inclusions or scratches in the final product that are unavoidable during the manufacturing process. This will have no effect on the performance of the product and will not be visible during the glow effect.

Workability of Embrite™ Material

Embrite™ is a resin-based material and is easily cut to desired lengths. You can use a standard hacksaw or machine tools to cut the rods, which leaves a relatively smooth cut edge. It can be sanded to eliminate any rough edges or cuts, but you should avoid any modification to the finished, polished surfaces. Any dust or material scrap resulting from cutting or modification can be easily discarded, as Embrite™ is non-toxic in its finished state. However, we do not recommend ingesting the material either orally or from breathing any dust created during the cutting process. We therefore suggest that you wear protective eyewear and avoid breathing any dust particles during the modification process. The use of a snug-fitting respirator with filter cartridges is highly recommended.

Performance Specifications

Embrite™ performance is based on its luminance value over time. The luminance values in the chart below are averaged values derived from random production batch samples. It should be noted that at night, the human eye is sensitive to well below the lowest values listed in the chart. Therefore, Embrite™ material can still be visible after many hours past the initial charge.

Decay Time (Minutes)	Luminance (mcd/m ²)		
	Embrite™ Green	Embrite™ Aqua	Competitors Green
1	2834	1508	2129
10	681	461	191
30	214	148	18
60	96	68	1.9
120	43	29	0.4
240	22	16	0
480	9	7	0
960	0.3	0.1	0

Contact Information

If you have any questions regarding Embrite™ performance, material modifications, or safety issues, please contact:

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