



STORELITE[®]

Compound / Masterbatch

RC Tritec is based upon a more than 80 year experience in technology and application of luminous colours and products.

It is our target to offer high quality products together with the necessary advice and to permanently develop our products according to our customers' requirements.

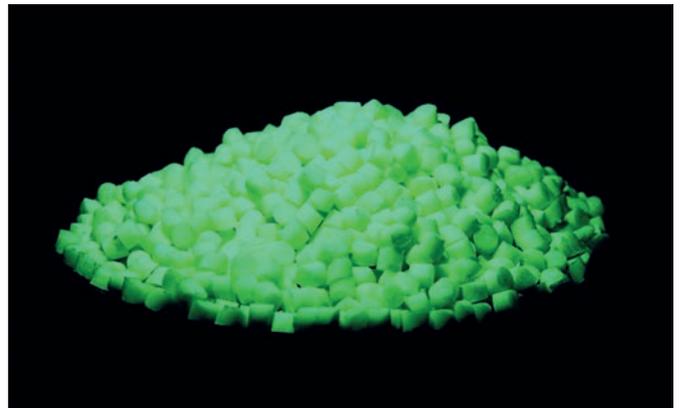
In close cooperation with our customers we develop tailored solutions for an optimal and efficient application of phosphorescent materials.

We supply to the plastics industry **STORELITE® Compound** and **STORELITE® Masterbatch**, which are produced according to customers' specifications.

STORELITE® Compound is a ready-for-use moulding material, which contains afterglow (phosphorescent) pigment in different concentrations.

STORELITE® Masterbatch contains phosphorescent pigment in a high concentration and can be mixed with compatible thermoplastics for processing.

Basically all thermoplastics are suitable as carrier material for **STORELITE® Compound** or **STORELITE® Masterbatch**, provided that the material is transparent or translucent. Pre-coloured plastics are unsuitable, as normally well covering dyes are used, which would block the excitation and afterglow mechanism.



Items manufactured from STORELITE® Compound glow in the dark. Thus the functionality of pieces, operating devices and markings may be remarkably increased.



SAFETY

In an emergency situation - particularly combined with a black-out – a quick orientation and a targeted locating and handling of rescue devices must be assured. Luminescent thermoplastics are suitable for e.g. extruded profiles as an escape guidance system, door and escape handles, panic buttons, push buttons, handles of fire extinguishers, emergency phones etc.



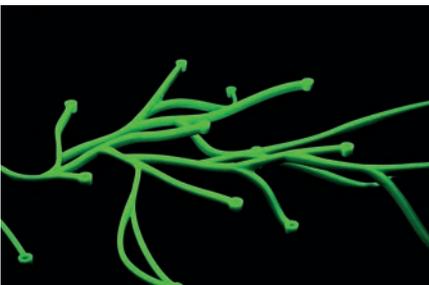
OPERATING COMFORT

How often it does occur, that one has to tediously search for an item or an operating device in the darkness? With phosphorescent plastic a remedy may be easily found: the phosphorescent light switch, phosphorescent controls in the car interior, such as handles and switches, remote controls with luminous push buttons, keys with a luminous pendant.



FUNCTIONALITY

Often, activities could be carried out more safely, steadily and specifically, if in semidarkness and darkness the required device could be easily detected or identified. A tool fitted with luminous parts can be handled more safely. During trekking at night the phosphorescent bottle or torchlight may be found more quickly and more directly.



EFFECTS

With luminous material amazing effects may be achieved, for example in a disco, in a show, in a theatre - always then, where creative effects with light and darkness want to be achieved. Phosphorescent materials are fascinating nearly everyone and attain high attention in sales promotion and product design.

Under ideal conditions the afterglow time may last up to 12 hours or more.



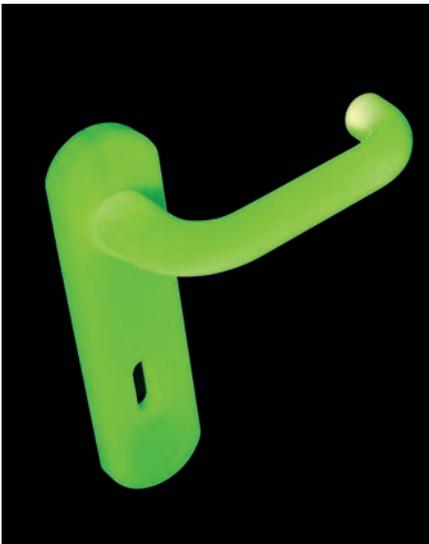
MECHANISM OF PHOSPHORESCENCE

The particles of the phosphorescent pigment contained in STORELITE® Compounds work like rechargeable little batteries, which can store light. The particles store the energy of the surrounding light (ideally UV-light) and emit this in darkness in the form of visible light (exponential decay). This excitation and decay cycle is purely a physical process, without loss of performance and degradation of the phosphorescent particles.

AFTERGLOW DURATION AND INTENSITY

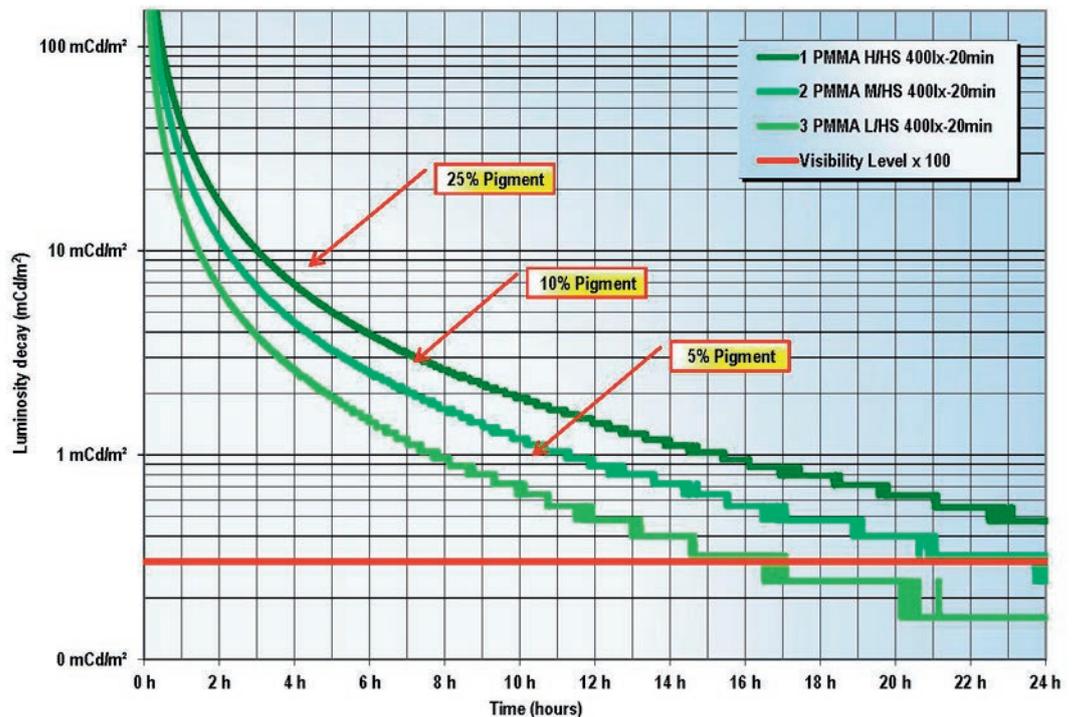
There is no generally valid answer to the often asked question about the afterglow duration. Afterglow duration and intensity depend on the following factors:

- Quantity of phosphorescent pigment in the finished product, i.e. concentration, thickness, surface
- Natural or coloured material
- Excitation light: Intensity and wavelength of the excitation light as well as time of excitation
- Residual surrounding light under darkness
- Subjective perception, i.e. degree of adaption of the eyes to the darkness



By constructive measures the afterglow performance may be remarkably increased, for example by application of a white undercoat. We advise our customers regarding an optimal and economical application of STORELITE® Compounds.

Comparison Storelite® Compound HS different Pigment Concentration

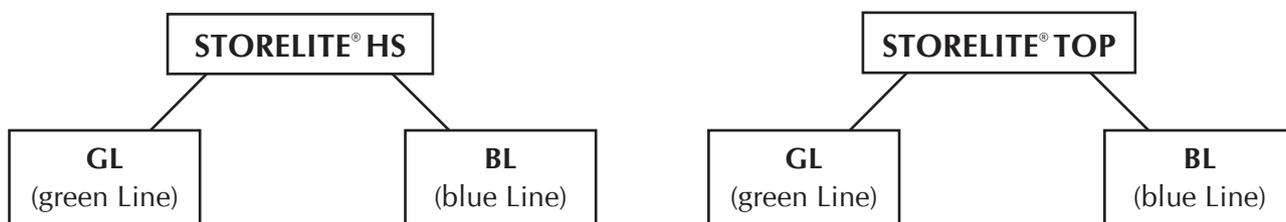


PIGMENT GRADES

Phosphorescent pigment is a strontium aluminate doped with rare earths. This ceramic pigment is very hard and has a Mohs hardness of 9 (diamond: Mohs hardness 10). The pigments are temperature-stable at least up to 500° C.

Phosphorescent products have two different appearances in terms of colour: Body colour (or daylight appearance) and after-glow colour. The body colour is prevailing under day or artificial light, whereas the afterglow colour in the darkness depends of the pigment grade.

Furthermore the grades are distinguished according to their excitation sensitivity. Schematically the following grades may be distinguished:



- for weaker, longer-wave excitation light
- higher initial brightness at partial excitation
- mainly for indoor applications

- for bright short-wave excitation light
- higher initial brightness at full excitation
- mainly for outdoor applications
- higher long lasting afterglow

STORELITE® Compounds and Masterbatches of the **TOP-Series** are suited where strong excitation light is available. They have a high light storage capacity. Compared to the HS-Series the decay curve is flatter.

The **HS-Series** is appropriate for more difficult excitation conditions. The HS grades have a higher excitation sensitivity and have initially a very high brightness. HS types are able to be excited also by weak light in a way that very well visible light is emitted still over a longer time.

According to the requirements of moulding or extrusion, pigments with different particle sizes may be used.

BODY COLOUR

Often, the design requires a different colour than the original yellowish-green body colour (daylight appearance). Colourings are possible, but one should be aware, that any colouring reduces the afterglow performance more or less, depending on the shade of colour. Therefore a compromise about functionality (afterglow performance) and design has to be found.

PIGMENT CONCENTRATION

The pigment concentration in the finished product should be 5% - 25%. For high performance applications we recommend a content of 20% - 25%.

PROCESSING

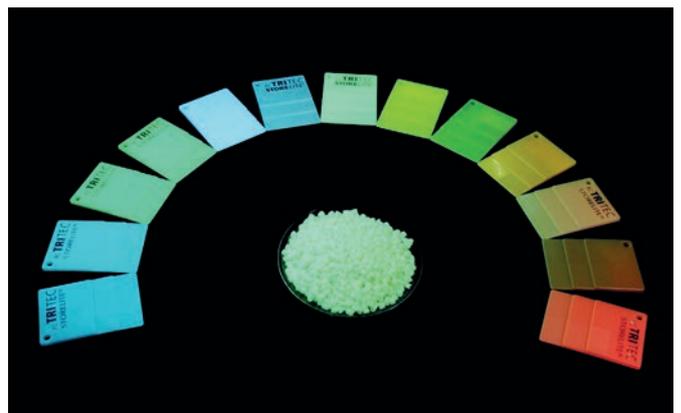
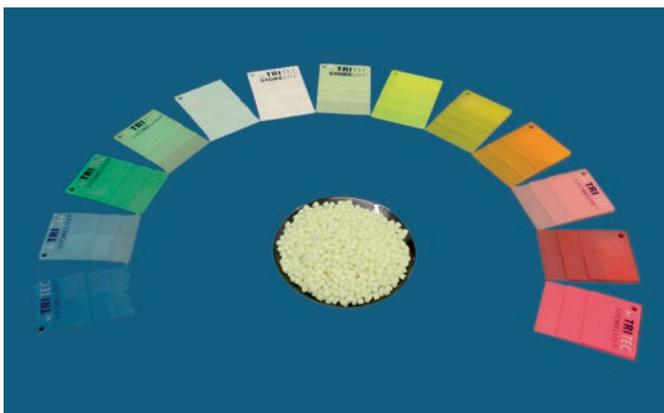
Because of their hardness, the pigments contained in STORELITE® Compound are very abrasive. Therefore the material should be processed with armoured tools only. Otherwise, it would cause an abrasion which gives the moulded part an unattractive greyish colour and the afterglow performance would be remarkably reduced.

RANGE OF PRODUCTS

Our standard range comprises STORELITE® Compound with ABS, PA, PC, PMMA und PP as well as STORELITE® Masterbatch with EVA und TPE as carrier material. However, generally we supply compound which is manufactured according to customers' specifications, regarding carrier material, as well as pigment grade and concentration and colouring if any. Furthermore, we offer a service for photometric and colour measurement of the phosphorescent parts.

TOXICOLOGY

STORELITE® Compounds and Masterbatches are absolutely free from radioactive substances, lead, cadmium and chromium pigments and are physiologically non-hazardous. For food applications the relevant tests have to be performed.



RC **TRITEC**

**is your competent partner for the application
of phosphorescent materials.
We look back on more than 80 years of experience.**

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