



**NEW FROM TOSAF
BLUE LIGHT
SCREENING
MASTERBATCH
PRODUCT RANGE**



NEW FROM TOSAF**NEW LINE OF BLUE LIGHT
SCREENING MASTERBATCHES**

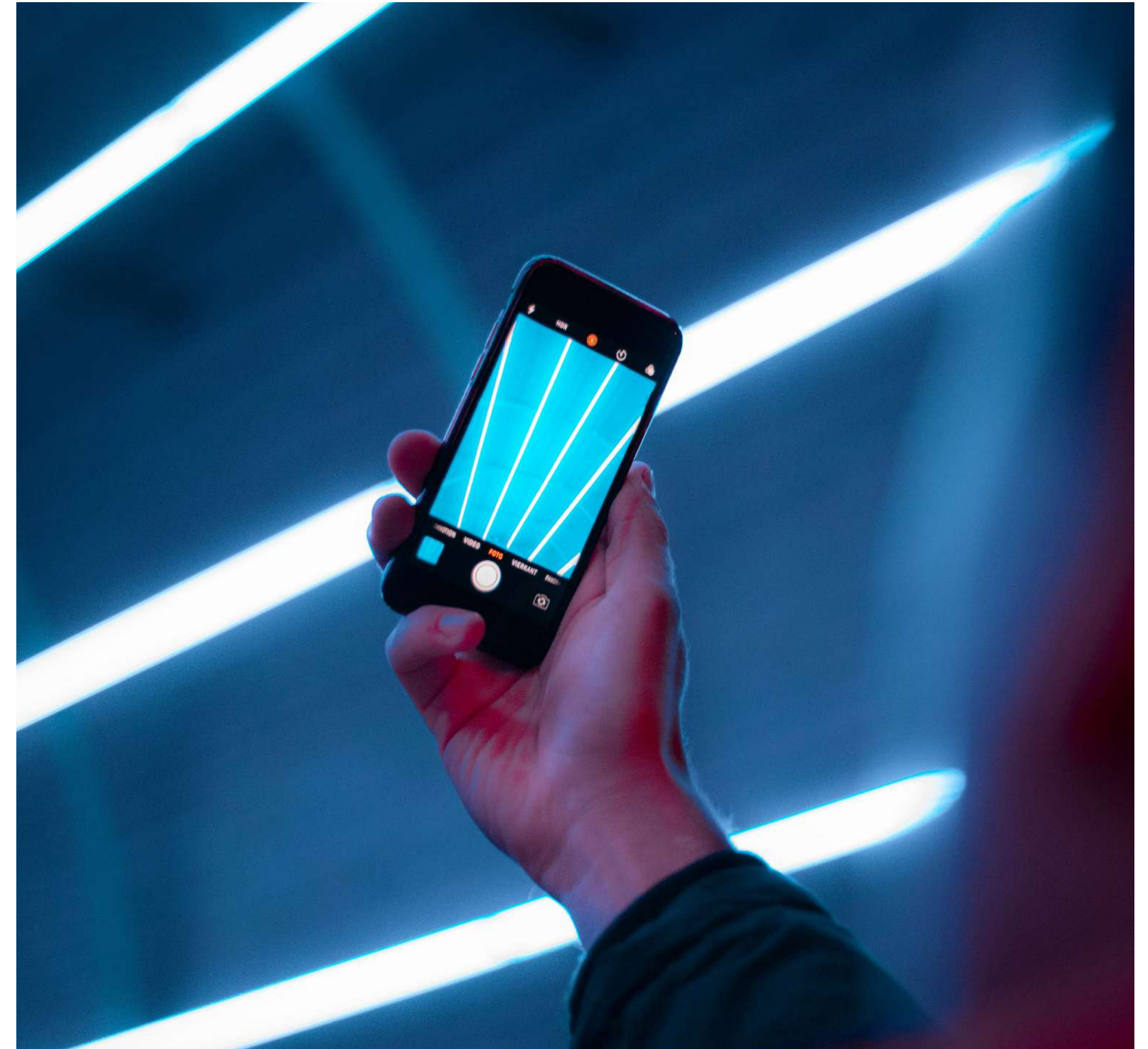
Prolonged exposure to blue light emitted from smartphones, computer screens and other household fixtures can disturb our sleep and even damage our eyes, causing conditions such as eyestrain, cataracts and age-related macular degeneration.

Tosaf has recently completed the development of a new line of blue light screening masterbatches, answering demand by manufacturers of optical film/ thin sheets for such a specialized additive.

There is a linear trade-off between blue light screening, transparency and film/ thin sheet color: as the masterbatch screens or completely blocks more blue light in the 390nm – 500nm spectrum, there is a reduction in total light transmission, i.e.

transparency, and the color of the film or thin sheet becomes more yellow/ orange.

To give manufacturers a choice of solutions to suit their blue light/ transparency/ color priorities, Tosaf's new masterbatch line includes four products, each with its own screening baseline. Having selected the masterbatch with the baseline closest to their needs, manufacturers can then further refine their choice by selecting the usage concentration of the specific masterbatch to achieve their optimal blue light/ transparency/ color trade-off.



BL9111PC

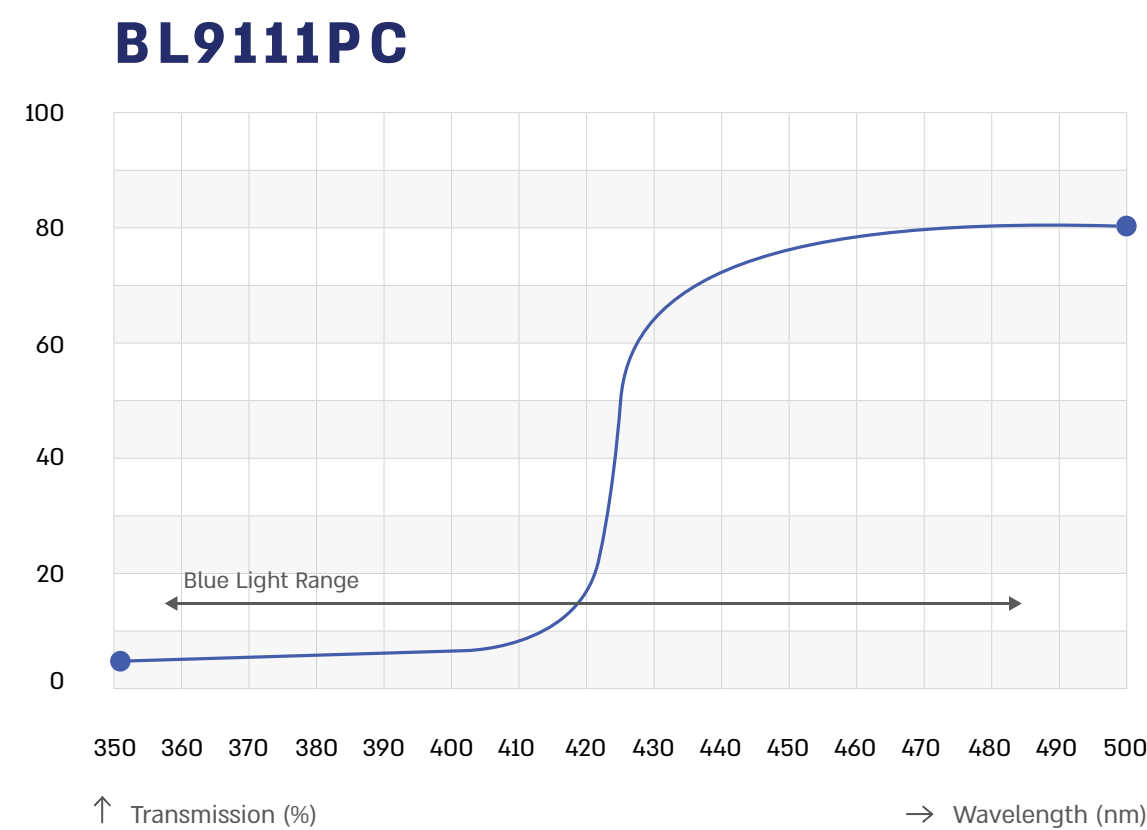
BLUE LIGHT SCREENING MB FOR PC APPLICATIONS

BL9111PC screens blue light in up to 18% of the full 390nm to 500nm blue light range, with almost no effect on color or transparency level, making it suitable for use in Polycarbonate applications such as protective

screens for LCD or protective film for smart-phones and tablets.

As illustrated in the graph below: 4% usage level (1.6mm) of BL9111PC provides about 16%-18% blue light screening, predominantly in the 390nm - 440nm range, with almost no effect on color or transparency level.

8% usage level (1.6mm) of BL9111PC provides about 16%-18% blue light screening, predominantly in the 390nm - 440nm range, with almost no effect on color or transparency level.



BL9111PC screens blue light in about 45% of the blue light range, with small effect on color or transparency level.

BL9112PC

BLUE LIGHT SCREENING MB FOR PC APPLICATIONS

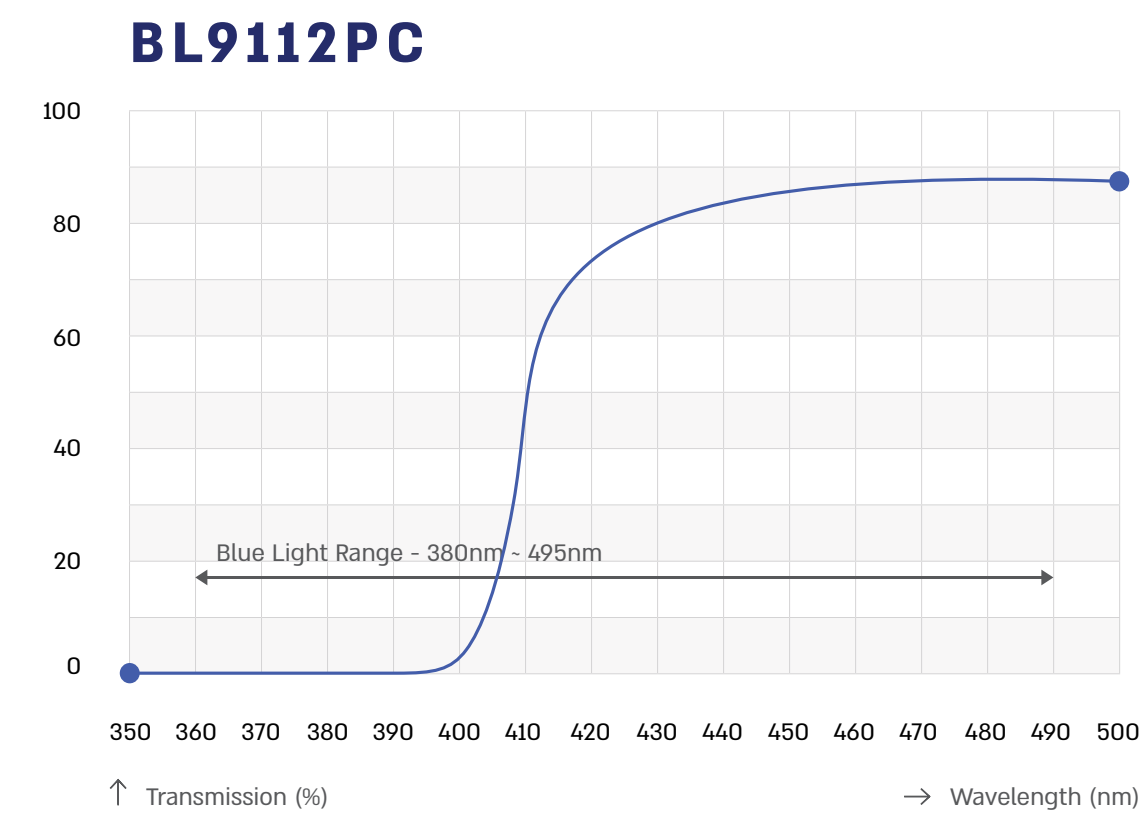
BL9112PC screens blue light in up to 25% of the full 390nm to 500nm blue light range, with almost no effect on color or transparency level, making it suitable for use in Polycarbonate applications such as protective

screens for LCD or protective film for smart-phones and tablets.

As illustrated in the graph below: 1% usage level (1.6mm) of BL9112PC provides about 12% blue light screening, predominantly in the 390nm - 440nm range, with almost no effect on color or transparency level.

4% usage level (1.6mm) provides about X% blue light screening, predominantly in the 390nm - 450nm range, with almost no effect on color or transparency level.

10% usage level (1.6mm) provides about 25% blue light screening, predominantly in the 390nm - 460nm range, with almost no effect on color or transparency level.



BL9112PC screens blue light at about 33% of the blue light range, with minor effect on color or transparency level.

BL9113PC

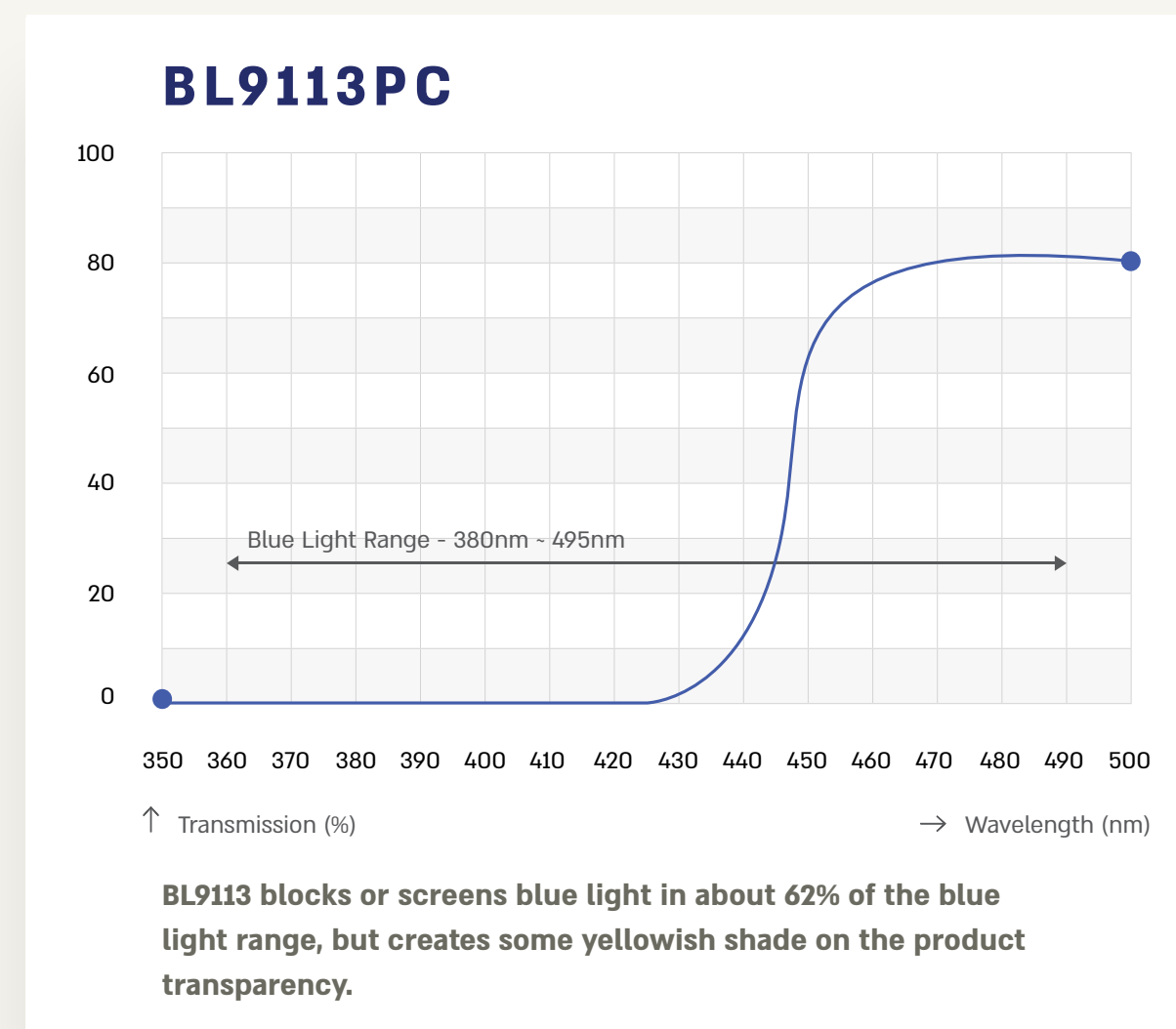
BLUE LIGHT SCREENING MB FOR PC APPLICATIONS

BL9113PC blocks or screens blue light in over 50% of the full 390nm to 500nm blue light range, but creates a very yellowish appearance. It is suitable for use in Polycarbonate applications such as protective

screens for LCD or protective film for smart-phones and tablets. Which can tolerate a change in the screen color.

As illustrated in the graph below: 4% usage level (1.6mm) of BL9113PC provides about 55% blue light screening

across the 390nm - 500nm range, creating a very yellowish appearance.



BL9116PC

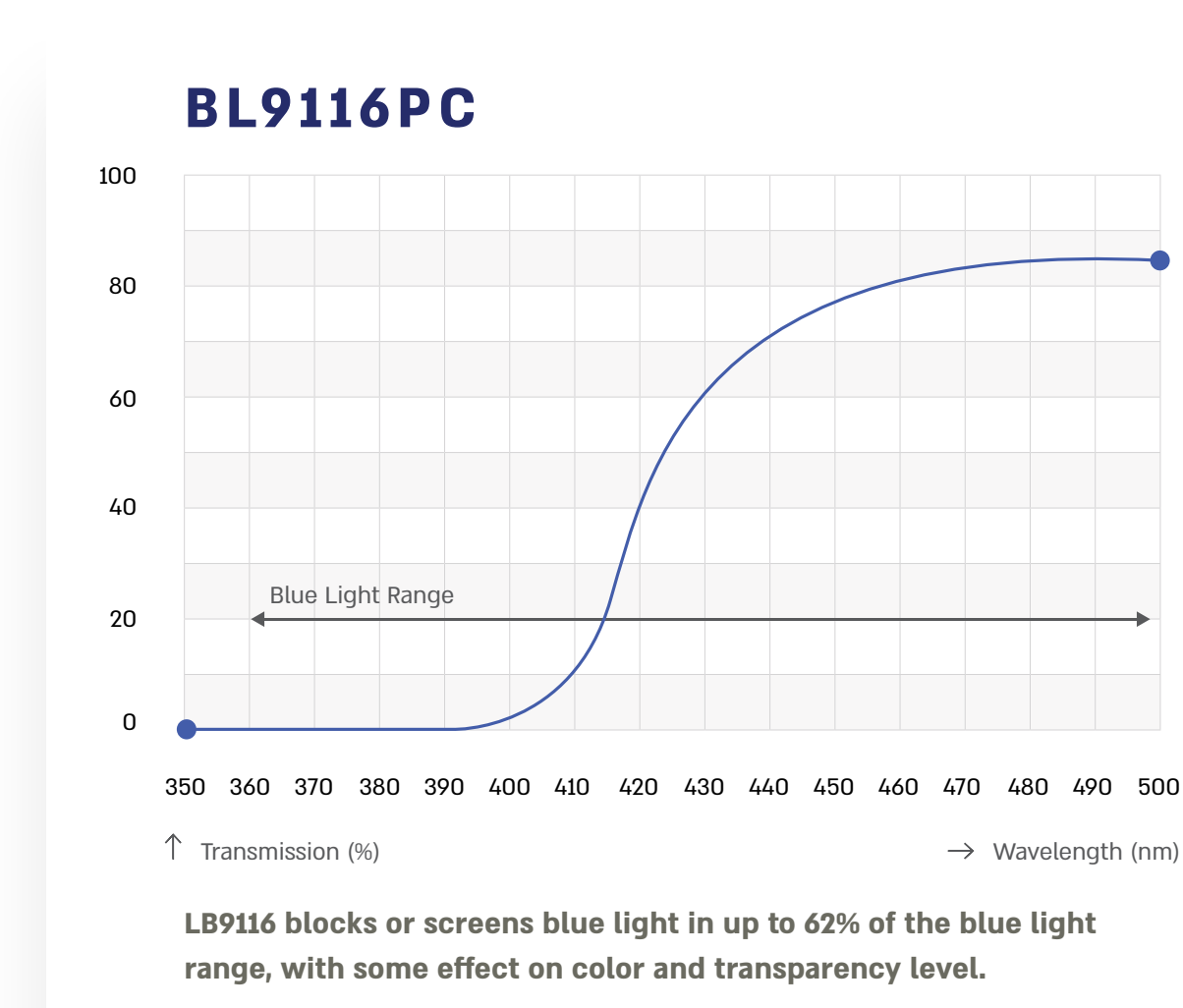
BLUE LIGHT SCREENING MB FOR PC APPLICATIONS

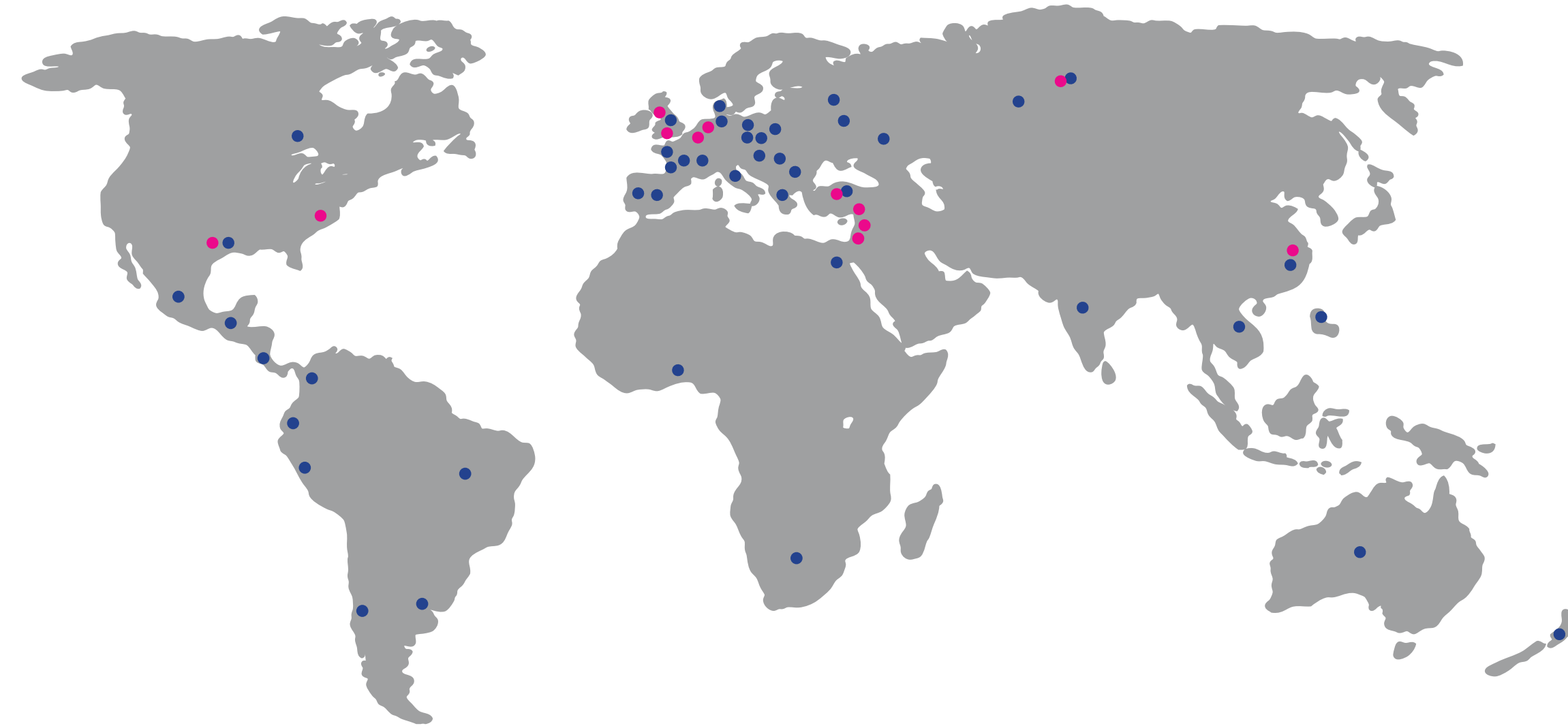
BL9116PC blocks or screens blue light in up to 35% of the full 390nm to 500nm blue light range, with some effect on color and transparency level. It is suitable for use in Polycarbonate applications such as protective screens

for LCD or protective film for smart-phones and tablets. Which can tolerate a degree of change in screen color.

As illustrated in the graph below: 10% usage level (1.6mm) of BL9116PC provides about 23% blue light blocking, across the 390nm - 500nm range, with very little effect on transparency and color.

25% usage level (1.6mm) of BL9116PC provides about 35% blue light screening, across the 390nm - 500nm range, with very little effect on transparency and color.





PRODUCTION PLANTS

SALES OFFICES

All statements, information and data given herein are believed to be accurate and reliable, but are presented without warranty, or responsibility of any kind, express or limited. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement, and are not recommendations to infringe any patent. The user should not assume that all safety measures are indicated, or that other measures may not be required. Specific recommendations and applications for specific products should be considered and pre-checked by the user to ensure compatibility with user's equipment and product requirements.



www.tosaf.com