TREFFERT®

Colour follows function

LASER MARKING OF POLYMERS

For precise and permanent labelling

FOR PRECISE AND PERMANENT LABELLING

Purposes and advantages of laser marking

Lasermarking of polymers is a rapid, flexible, precise and clean method. It can be integrated in processing lines for marking information such as bar codes, dates or numbers directly on the polymer parts. The laser marking is permanent, solvent, wipe- and scratchproof and there is no need for pretreatment.
It is possible to present very small weights as well as personalised content with high contrast. Also, hard accessible places in the component can be marked. Treffert here offers both the know-how for developing laser-markable plastics and the option of making extensive tests on the plastics at different lasers in our own innovation centre. This makes it possible to considerably reduce the development time for laser markable plastics. If you are interested, just submit a query online or contact our application engineers and let them consult with you about the topic of laser marking.

MARKING PROCESS

The laser marking is the result of a thermal response of the polymer. For heat induced marking, the short but high energetic pulses of laser radiation are absorbed and transformed into heat. This energy is high enough to locally raise the temperature above the decomposition temperature and cause thermal degradation of the polymer. The polymer thus carbonises, leading to a dark marking. But if the energy is sufficiently high enough to cause polymer degradation to gases, the polymer expands and forms bubbles, which give a light marking due to light scattering. Both processes of carbonisation and foaming are in competition and by optimising the material formulation and the laser parameter settings, the marking can be steered in the preferred direction.

MATERIAL AND COLOUR

A good contrast between marking and polymer material is necessary to accomplish good readability, e.g. for electronic scanners. Therefore, the background colour for a light marking should be dark and vice versa. For a contrast marking the interaction between the plastic matrix, laser additives and colourants is very important. For this, we recommend you to use specific masterbatches or compounds of Treffert, which have been developed for optimum marking result. There is a wide variety of additives to choose from to obtain the best marking results concerning contrast, edge sharpness and process speed requirements. To obtain the best possible result, the selection of an additive depends on the polymer, the desired highlight colour and the requirements of the final product.

For more information
please visit:
www.treffert.eu

PERSONAL CONSULTATION DIRECTLY ON SITE

For individual performance demands

Our company's motto is "Colour follows function". So you won't be sold standardized solutions, but offered high-quality products which have been developed strictly as you specify at every stage of the process. Our orders place high performance demands on the development and consultation aspects. The most complicated specifications are part of our daily routine. What is particularly important and clear to us is comprehensive consultation by our additive experts or applications technicians directly on site at your location. We consult with you on all issues on the use of our products and of course provide sample materials to you in the short term. As a result, we can ensure that you use and apply our product in an optimum manner.
Contact an application technician near you. You can find the locations of our application technicians online at www.treffert.eu. We are looking forward to your task.

COLOUR FOLLOWS FUNCTION

Treffert corporate group

At our two locations in France and Germany, we advise and guide our customers from the idea, through product development to technical production. We develop and supply charges for small to medium-sized supply requirements as well as for unusual uses – from the smallest sample quantities to capacities of several tons. The motor driving our performance is our passion for material and function – and for results that are made with the highest precisions.

The results are high-grade products with an optimum of process security that meet all the criteria for tested quality management.
Every step of development and manufacturing is subject to constant internal quality control. We thus provide for a constant improvement of our work processes and production quality.

Documented production processes and formulas as well as secure storage of reserve samples assure that we can still supply our customers with more than 50,000 dye formulas even years after they were made, and that with absolute fidelity to the original, and always just in time.

Certified Quality, Environmental and Energy Efficiency Management

Management System
ISO 9001:2008
ISO 14001:2004
ISO 50001:2011

www.tuv.com ID 9105032830

TÜVRheinland®
CERTIFIED

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