

BRINGING LIFE  TO PLASTICS

# MAXITHEN<sup>®</sup> laser additives

CONTACT FREE  
MARKING



FLEXIBLE



PERMANENT  
LASER DECORATION



HIGH PRECISION  
DETAILING



WEATHER-PROOF

AT0904538436:  
I AM FROM AUSTRIA



SECURITY TAGS



PROMOTION CODES



# MAXiTHEN LASER ADDiTiVES

ANYTiME, ANYWHERE

The laser marking process enables permanent marking on plastic surfaces with an optically controlled laser beam. Material optimisation through the addition of 2-3% of laser additives is usually enough to achieve the desired marking contrast. The necessary wavelength around 1064 nm can be generated by three different light or diode-pumped laser systems: the neodymium YAG laser, the neodymium vanadate laser and the fibre laser.

Laser technology offers numerous advantages compared to other decoration methods. Laser marking is abrasion-resistant, chemical-resistant and weather-resistant and can even be applied to soft, coarse, stepped or curved surfaces. In addition, laser technology also excels with its high flexibility which makes it perfect for small batch sizes and rapidly changing layouts.

We have been involved with this technology since laser marking on plastics was first introduced. Our

product portfolio consists of laser additives and combination masterbatches – colour & additive – which are suitable for all thermoplastics. We provide a comprehensive service in various locations, from project idea to realisation. Our infra-red lasers, with a wavelength of 1064 nm, are available for trials and tests until the best quality marking has been achieved. In addition, we operate a network of competent partners who manufacture and distribute laser equipment or work with contract laser marking companies.



ABRASION &  
ACID-RESISTANT

TRACEABILITY

## DIVERSITY IN PRACTICE

### LASER MARKING APPLICATIONS ARE AS DIVERSE AS THEIR ADVANTAGES:

- Promotion codes in beverage caps
- Barcodes and QR codes
- Food and cosmetics packaging with logos, scales, product information, expiry dates or decorative designs
- Marking animal ear tags
- Safety seals
- Security tags/plagiarism protection
- Keyboards
- Interior and exterior automotive accessories
- Cables and pipes
- Electronic components
- Medical products and laboratory equipment

## THE CHOICE IS YOURS

Our masterbatch is suitable for processing in injection moulding, hollow body injection moulding and for the extrusion of thick-walled products. We can also provide masterbatches for film extrusion upon request. You have the choice between purely laser additive masterbatches or combination masterbatches, consisting of carrier polymer, additives and the colour of your choice.

### THREE KINDS OF MARKING COLOURS ARE POSSIBLE:

- Dark marking (carbonisation)
- Light marking (foaming)
- Coloured marking (on black)



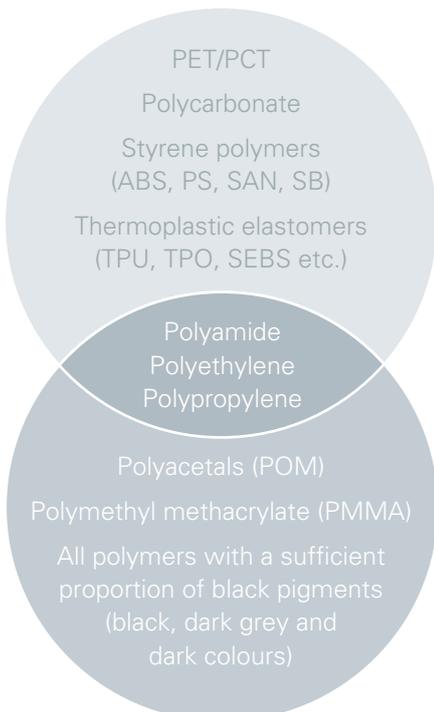
FOR COMPLEX LAYOUTS

ON TRANSPARENT PLASTICS

### TRANSPARENCY

A completely transparent laser additive has been developed over a period many years. It offers total transparency in clear plastics and enables dark depth marking that is gentle on surfaces and has an extremely good contrast.

### THE INFLUENCE OF THE POLYMER TYPE ON THE TENDENCY TO ACHIEVE A LIGHT OR DARK COLOUR CHANGE WITH 1064 NM WAVELENGTH:



**DARK MARKING**

**LIGHT MARKING**

## ADVANTAGES OF LASER MARKING

- \_ Contactless marking of plastic parts
- \_ Suitable for soft, coarse, stepped or curved surfaces
- \_ Marking without printing ink and solvents
- \_ No pre-treatment of plastic parts
- \_ Maximum flexibility for complex and rapidly changing layouts
- \_ Abrasion, chemical, and light-resistant
- \_ Product safety is ensured by permanent and forgery-proof labelling
- \_ Individualisation
- \_ Personalisation



OUTSTANDING

# TRANSPARENCY

## OPACITY OR TRANSLUCENCE

Through intensive development work, our German laser competence centre has developed formulations using special pigments. The visual properties of these pigments can be modified using a laser from complete opacity to a desired degree of translucency. The numerous applications of this powerful technology range from back-lit switches to cosmetics packaging and elements for decorative applications. For opaque applications logos and fancy designs can be achieved impressively.

*The listed laser additive products are used to produce products in compliance with frame regulation (EC) No. 1935/2004 "On materials and articles intended to come into contact with food".*

*The colourants used fulfill the purity requirements of the resolution AP (89) 1 "On the use of colourants in plastic materials coming into contact with food" and the purity requirements of the current recommendation IX issued by the BfR (German Federal Risk Assessment Institute) "Farbstoffe zum Einfärben von Kunststoffen und anderen Polymeren für Bedarfsgegenstände". Colourants based on toxic heavy metals or diarylide are not used. Polymers and additives*

*comply with the EU regulation on plastics No. 10/2011 "On plastic materials and articles intended to come into contact with food". Many of our products meet the requirements of the FDA for food contact materials. For further information please refer to our product specific regulatory information that can be provided upon request. The suitability and legal compliance of food contact material produced with our masterbatches can only be determined from the finished good because this is a result of the packaging system that consists of used components (colourants, polymers and additives) and the combination of processing steps as well as the foodstuff itself..*

A PERFECT FUSION

# LASER TRANSMISSION WELDING

Laser transmission welding has become increasingly important over the last few years, so we are dedicated intensively to the development of this product line.

A permeable plastic part for the wavelength being used is placed on a laser light-absorbing join partner at the site to be welded. This is fused onto the contact surface with laser radiation and connected to the overlying join partner. For this, laser wavelengths of 808 nm, 940 nm, 980 nm and 1064 nm are used.

We offer optimised laser welding masterbatches for all types of process variants.

## ADVANTAGES

- Invisible weld seams
- Local energy input enables welding of sensitive components
- No generation of abrasion particles or adhesive residue
- Weld seams are possible near electronic components
- Vibration-free welding method

## APPLICATION EXAMPLES

- Various housings of small sizes (remote control keys, pumps etc.)
- Window frames with an integrated pane
- Vehicle lights and bumpers
- Microflow reactors for gases and liquids
- Liquid containers inside engine compartment
- etc.

FOR  
SENSITIVE  
COMPONENTS



**BUSINESS UNITS OF GABRIEL-CHEMIE GROUP:**



Building & Agriculture



Home & Lifestyle



Packaging for Industrial & Consumer Goods



Cosmetics Packaging



Food & Beverage Packaging



Medical



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