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Lumogen® IR keeps your laser’s promises.

Joints and connections not only have to meet technical requirements but at the same time must fulfill extreme mechanical and physical areas. Even if this has often been a contradiction. With esthetics in focus, gluing was the joining technique of choice, with negative impact on liability. When liability was at stake, joints were either screwed or laser welded utilizing strongly colored broad band absorbers – usually at the expense of esthetics. This was the past.

With Lumogen® IR 765 and Lumogen® IR 788, esthetics and durability, aesthetics and a broad color spectrum do not set any longer constraints each other, but are properties to be achieved simply and economically. Transparent aesthetics for headlights, clock faces, watches, cell phones and much, much more.
Finally, the impossible has become possible.

Just say goodbye to any limits you have encountered in laser transmission welding. For the first time ever you can weld colored and even transparent polymers – with the new near infrared (NIR) absorbers Lumogen® IR 765 and Lumogen® IR 788.

Up to now, only transparent/black and black/black workpiece combinations have been possible in laser transmission welding. For obtaining the desired result, certain laser or another dark coating acting as a broadband absorber had to be added to the bottom piece. Due to the dark inherent color, welding of brightly colored or completely transparent parts was impossible. But this is history.

Lumogen® IR 765 and Lumogen® IR 788 are highly transparent selective near-infrared absorbers with very little residual color in the visible spectrum. They exhibit excellent heat stability and have been especially designed for the absorption of radiation from semiconductor lasers with emission wavelengths around 600 nm. Additionally, they are extremely resistant to external chemical and physical effects and allow for nearly unlimited color combinations in the laser welded workpieces.

Their high absorption efficiency results in low dosage rates and thus in an excellent cost/benefit ratio. But there is even more: the new Lumogen® IR absorbers are processed as easily as a standard additive. For you, this means most innovative high tech – at no investment costs into new processing technologies.

This new BASF chemistry not only offers you innovative products, but opens up completely new application fields in laser transmission welding. Never before it was so easy for you to gain access to new markets and new business opportunities.

The first pros without cons:
• highly transparent
• very little residual color in the visible
• nearly unlimited freedom in the achievable color range
• resistant to chemical and physical influences
• compatible with most common polymers
• nontoxic
• processable like a standard additive
• excellent cost/benefit ratio

Product PC PMMA PET PA PS ABS SAN MABS PVC PP TPE PE
Lumogen® IR 765 suitable without limitations
Lumogen® IR 788 suitability must be tested
not suitable
For these polymers, test results are not available yet: TPU, PES, POM, PTFE, PA 6.6, PA 12

Transparency and low toxicological potential.
Laser transmission welding in medical technology

In medical technology, product quality is the top assessment criterion. Surfaces free of pores, low toxicological potential, anti-septic manufacturing conditions and precise high grade joints. Laser technology has always been the method of choice. But up to now welding applications still had to face one limitation unsurpassable: highly transparent joints.

For e.g. joining transparent tubing or manufacturing transparent dialysis systems, one had to pass on the advantages of laser transmission welding, to use other technologies instead and accept their drawbacks. Not any more.

With Lumogen® IR 765 and Lumogen® IR 788 you can now profit from all advantages of laser technology even for transparent joints. Product quality remains the top assessment criterion – without compromise.

For more information please contact your local BASF Sales office.
Finally the impossible has become possible.

Just say good-bye to any limits you have encountered in laser transmission welding. For the first time ever you can weld colored and even transparent polymers – with the new near infrared (NIR) absorbers Lumogen® IR 765 and Lumogen® IR 788.

Up to now, only transparent/black and black/black workpiece combinations have been possible in laser transmission welding. For obtaining the desired result, certain lasers or another dark coating acting as a broadband absorber had to be added to the bottom piece. Due to the dark inherent color, welding of brightly colored or completely transparent parts was impossible. But this is history.

Lumogen® IR 752 and Lumogen® IR 784 are highly transparent selective near-infrared absorbers with very little residual color in the visible spectrum. They exhibit excellent heat stability and have been especially designed for the absorption of radiation from semi-conductor lasers with emission wavelengths around 800 nm. Additionally, they are extremely resilient to external chemical and physical attacks and allow for nearly unlimited color combinations in the laser welded workpieces.

Their high absorption efficiency results in low dosage rates and thus in an excellent cost/benefit ratio. But there is even more: the new Lumogen® IR absorbers are processed as easily as a standard additive. For you, this means most innovative high tech – at no investment costs into new processing technologies.

This new BASF chemistry not only offers you innovative products, but opens up completely new application fields in laser transmission welding. Never before it was so easy for you to gain access to new markets and new business opportunities.

The first pros without cons:

- highly transparent
- very little residual color in the visible
- nearly unlimited freedom in the achievable color range
- resistant to chemical and physical influences
- compatible with most conventional polymers
- nontoxic
- processable like a standard additive
- no extra investments necessary
- excellent cost/benefit ratio

For e.g. joining transparent tubing in manufacturing transparent dialysis systems, one basically pass on the advantages of laser transmission welding, to use other technologies instead and accept their drawbacks. Not any more.

With Lumogen® IR 765 and Lumogen® IR 788 you can now profit from all advantages of laser technology even for transparent joints. Product quality remains the top assessment criteria – without compromise.

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**Compatibility of Lumogen® IR with selected polymers**

**Extinction (a. u.) vs. wavelength (nm)**

For more information: www.bASF.com/lumogen
Finally: the impossible has become possible.

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Up to now, only transparent/black and black/black workpiece combinations have been possible in laser transmission welding. For obtaining the required result, certain laser or another dark colored acting as a broadband absorber had to be added to the both pieces. Due to the dark inherent color, welding of brightly colored or completely transparent parts was impossible. But this is history.

Lumogen® IR 765 and Lumogen® IR 788 are highly transparent selective near-infrared absorbers with very little residual color in the visible spectrum. They exhibit excellent heat stability and have been especially designed for the absorption of radiation from semi-conductive lasers with emission wavelengths around 800 nm. Additionally, they are extremely resistant to external chemical and physical effects and allow for nearly unlimited color combinations in the laser welded workpieces.

This high absorption efficiency results in low dosage rates and thus in an excellent cost/benefit ratio. But there is even more: the new Lumogen® IR absorbers are processed as easily as a standard additive. For you, this means most innovative high tech – at no investment costs into new processing technologies.

This new BASF chemistry not only offers you innovative products, but opens up completely new application fields in laser transmission welding. Never before it was so easy for you to gain access to new markets and new business opportunities.

The first pros without cons:
- highly transparent
- very little residual color in the visible
- nearly unlimited freedom in the achievable color range
- resistant to chemical and physical influences
- compatible with most common polymers
- easy processable like a standard additive
- excellent cost/benefit ratio

For these polymers, test results are not available yet: TPU, PES, POM, PTFE, PA 6.6, PA 12

For e.g. joining transparent tubing or manufacturing transparent dialysis systems, one had to pass on the advantages of laser transmission welding, to use other technologies instead and accept their drawbacks. Not any more. With Lumogen® IR 765 and Lumogen® IR 788 you can now profit from all advantages of laser technology even for transparent joints. Product quality remains the top assessment criterion – without compromise.

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Lumogen® IR keeps your laser’s promises.

With Lumogen® IR 760 and Lumogen® IR 780, extreme durability, aesthetics and a broad color spectrum do not set any longer contradi cre to each other, but are properties to be achieved simply and economi cally. Transparent aesthetics for headlights, side boards, watches, car panels and much more.

Esthetics and durability
Laser transmission welding in the automotive and electrical industry

Joints and connections not only have to meet technical requirements but at the same time must fulfill extreme mechanical and physical areas. Even this has often been a contradiction. With esthetics in focus, giving was the joining technology of choice, with negligible impact on durability. While durability was at stake, joints were either screwed or laser welded utilising strictly colored broad absorbers – mostly at the expense of esthetics. This was the past.
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Lumogen® IR keeps your laser’s promises.

Laser transmission welding of colored and transparent polymers.

With Lumogen® IR 765 and Lumogen® IR 788, extreme durability, esthetics and a broad color spectrum do not set any longer constraints to each other, but are properties to be achieved simply and economically. Transparent outlooks for headlights, dash boards, watches, cell phones and much more.

Esthetics and durability
Laser transmission welding in the automotive and electrical industry

Joints and connections not only have to meet technical requirements but at the same time must exhibit extreme mechanical and physical areas. Every thin line has often been a contradiction. With esthetics in focus, welding was the joining technology of choice, with negative impact on durability. When durability was at stake, joints were either screwed or laser welded utilizing strongly colored broad band absorbers – greatly at the expense of esthetics. This was the past.

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Colorants for Plastics: For your sustainable success.

Laser transmission welding in the automotive and electrical industry

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Lumogen® IR keeps your laser’s promises.