



BERLAC® DUAL CURE UV CLEAR COAT SYSTEM: SUSTAINABLE SURFACE PROTECTION THAT CONSERVES RESOURCES

Cost optimisation, eco-friendly processing, greater levels of resistance and impeccable appearance were the challenges confronting Berlac AG when it developed its **dual cure UV clear coat system 082.907.---** for demanding plastics applications. The UV-curing clear coat system unites the advantages of rapid UV-curing with those of isocyanate crosslinking for shadow zones in complex 3D components and is hallmarked by its automotive-quality surface finish. With its significantly lower VOC content, the **Berlac® dual cure UV clear coat system 082.907.---** impressively combines technological progress, environmental protection, industrial safety and economy.

TECHNOLOGICAL DESCRIPTION

The **Berlac® dual cure UV clear coat system 082.907.---** is based on UV-reactive components containing OH-groups. The two-stage curing process is achieved initially by the reaction of NCO-OH groups by means of forced drying for between 7 and 10 minutes at 60–80°C (circulating air or IR) in order to prevent the inclusion of solvents and to ensure curing in the shadow zones that are not reached by UV rays. The workpiece owes its final surface properties to downstream polymerisation which is effected in a matter of seconds by means of UV light and allows immediate onward processing of the workpiece. Without losing its performance **Berlac® UV dual cure clear coat 082.907.---** enables a very flexible handling regarding the individual steps within the curing process.

FIELDS OF APPLICATION

Provided substrates are pre-treated correctly as prescribed and relevant processing and application parameters are adhered to, the **Berlac® dual cure UV clear coat system 082.907.---** offers outstanding adhesion on standard plastics. The UV clear coat system with superior surface properties in automotive quality (interior applications) can be used for decorative purposes wherever there is call for a durable and top-quality surface finish that will be subject to heavy use. **Berlac® UV dual cure clear coat 082.907.---** is available in three different gloss versions: high gloss (082.907.100), semi-glossy (082.907.200) and matt (082.907.300). For applications in combination with UV sensitive plastics, Berlac offers the versions 082.907.103/203/303 with tailored UV absorbers. In addition, the Berlac dual cure UV system is available as a transparent pigmentable version *piano black* for black substrates and as a printable version (082.907.1x0/2x0/3x0). For special applications, such as PA 12 materials, etc., Berlac offers modified formulations.

YOUR ADVANTAGES AT A GLANCE

- **Increased productivity:** higher conveyor speeds resulting in increased machine capacity thanks to UV-curing in a matter of seconds
- **Reduced space requirements:** due to smaller size of drying equipment
- **Flexibility:** rapid onward handling of components is possible thanks to fast UV-curing
- **Less environmental impact:** low-VOC coating solution with lower energy consumption for venting and heating workpieces
- **Wider range of applications:** thanks to combined curing using UV radiation and isocyanate crosslinking for complex 3D components with shadow zones
- **Permanent retention of high-grade plastic surface:** adhesive properties and resistance levels remain high throughout the product's entire life cycle; compliance with the specifications of the German automotive industry (interior applications)



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PRODUCT PROFILE

Article no.:	<ul style="list-style-type: none"> ● 082.907.--- standard version ● 082.907.-x0 printable version ● 082.907.-03 for UV sensitive plastics
Tested in compliance with:	TL 226, DBL 7384
System:	Dual Cure clear coat system
Binder system:	Urethan acrylate
Colours:	<ul style="list-style-type: none"> ● Transparent ● Transparent pigmentable version <i>piano black</i>, compellingly in combination with black substrate
Substrates:	PA, PC, PC/ABS, ABS, base coat
Application:	Dual Cure UV clear coat 082.907.--- 100:15 with hardener 082.907.080
Level of gloss:	High-gloss / semi-glossy / matt
UV curing:	<p>Curing lamp: medium-pressure mercury lamp, not doped</p> <ul style="list-style-type: none"> ● UVA: 550-1220 mJ/cm² / 390-800W/cm² ● UVB: 560-1300 mJ/cm² / 400-900W/cm² ● UVC: 630-1600 mJ/cm² / 480-1100 W/cm² <p>measured with UV Power Puck 2 IL 393 from EIT</p>
Special properties:	<ul style="list-style-type: none"> ● Above-average scratch and abrasion resistance ● Excellent resistance to a range of chemicals ● Excellent high gloss look ● High level of transparency ● Very good flow properties ● Perfect direct adhesion to plastic surface ● Very flexible drying/curing processes: oven/UV, UV/oven, IR/UV, IR/oven/UV, IR/UV/oven ● Curing ensured even with complex component geometries
Advantages of UV coating over conventional PUR clear coat systems:	<ul style="list-style-type: none"> ● Reduction in processing times as coating system is cured in seconds ● Greater economy thanks to shorter cycle times ● Lower energy consumption for heating and venting components ● Less space required for machinery and lower investment costs ● Reduced emissions thanks to low-VOC formulation ● Superior surface properties
Approvals:	<p>Standard version</p> <ul style="list-style-type: none"> ● VW: approved ● Daimler: approved <p>Transparent pigmentable version <i>piano black</i></p> <ul style="list-style-type: none"> ● Daimler: approved <p>Printable version</p> <ul style="list-style-type: none"> ● VW: approved

TEST RESULTS

Article no.:	082.907.---
Cross cut (PC, PA, PC/ABS):	Gt 0
Hydrolysis in compliance with TL 226 and DBL 7384 (PC, PA, PC/ABS):	Gt 0 / OK
Condensation-water constant atmosphere in compliance with TL 226 (PC, PA, PC/ABS):	Gt 0 / OK
Resistance to creams and lotions as per PV 3964 (PC, PA, PC/ABS):	Gt 0 / OK
Micro scratch resistance as per PV 3987:	OK, 88% residual gloss
Scratch resistance as per PV 3952:	OK
Hot storage 10 days 90°C (PC, PA, PC/ABS):	Gt 0 / OK
Abrasion resistance, Crockmeter 2000 strokes dry:	OK
HWT 2 hours 70°C (PC, PA, PC/ABS):	Gt 0 / OK
Resistance under temperature in compliance with DBL 7384, Coca Cola / orange juice / Nivea sun cream / Nivea cream / test mixture (PC, PA, PC/ABS):	OK

BERLAC AG – COATING SYSTEMS TO GIVE YOUR PRODUCTS STRIKING ADDED VALUE

The production of premium-grade special and effect coatings as well as printing inks for decorative and functional applications on plastic, chromium-plated and metallised substrates, carbon fibre composites, metal and glass has been our speciality since 1928.

Whether you are an industrial contract coater, a tier-one or tier-two supplier coating in-house or an OEM, you will find us your ideal development partner for innovative niche solutions that call for interdisciplinary knowhow and precise adjustment to the processes of all your supply-chain partners. We accompany your innovative surface projects in close collaboration every step of the way from initial concept to technical fine-tuning for series applications on site.

Our comprehensive expertise and experience in manufacturing a product portfolio that ranges from primers through printing inks enables us to supply ideally coordinated integrated solutions (thermal and UV-curing) in the realm of solvent-based and waterborne spray coating systems and industrial screen and pad printing inks. Our innovative solutions for demanding coating tasks – also available in very small batches and for small series production – cater primarily to the following sectors: automotive, spectacle frames, domestic appliances, hearing aids, children's toys, medical technology, sanitary fittings, writing implements, sport, watchmaking and jewellery.

Headquartered in Sissach, just outside Basel in Switzerland, Berlac AG is one of the eight brands that comprise the Berlac Group, a globally-active group of medium-sized companies committed to the development and manufacture of top-flight solutions for finishing and protecting surfaces and for colouring plastics.



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