



MAXIMUM QUALITY IN A MINIMUM OF TIME

UV SYSTEMS FOR INDUSTRY AND THE ENVIRONMENT

YOUR UV TECHNOLOGY PARTNER

The Hönle Group develops, produces and sells UV systems, UV lamps and UV adhesives. We configure individual UV systems that are optimally adjusted to the manufacturing processes of every single customer.

Hönle stands for high performance and high quality products, for competent consultation and for fast, reliable service. This enables us to create and maintain trustful business relationships with our customers and, at the same time, establish our image as systems partners.

Worldwide, Hönle is among the leading systems suppliers on the high-growth UV technology market. Ever more companies are replacing traditional print, adhesive and coating procedures with the efficient, high quality and environmentally-friendly use

of UV radiation in the manufacturing process. We are convinced that a large number of new fields of application will emerge in the coming years and we look forward to developing innovative systems together with our customers.

Traditionally, research and development enjoy top priority at Hönle. Together with partners from the chemical industry, mechanical engineering and with associations and technical colleges, we are working intensively on solutions for tomorrow. This helps us to ensure that our customers will profit from Hönle's innovative power both today and in the future.

The Hönle Management Board, its Supervisory Board and staff work together in a performance-oriented and trustful relationship. For each of our employees, customer orientation comes first – from conception and realisation through to service and training. It is precisely this dedication which, for thirty years, has determined the success of the Hönle Group.



Two Boards...
Heiko Runge (left) and
Norbert Haimerl (above)



...and a motivated team:
Staff in front of Hönle's Head
Office

Supervisory Board:
Dr. Hans-Joachim Vits,
Prof. Dr. Karl Hönle and
Eckhard Pergande



Aladin GmbH



Wellomer GmbH



Honle UV (UK) Ltd.



The Honle AG Head Office in Gräfelfing near Munich

Hönle is present all over the globe with branch offices in France, Great Britain, Spain and China. Moreover, almost a half dozen sales partners in Asia, Europe and North America guarantee that all Hönle customers find a competent contact person for UV technology in their immediate vicinity.

Together with the German subsidiaries, Aladin, the light specialist, and Wellomer, the adhesives producer, Dr. Hönle AG is excellently positioned as an international UV systems provider.

30 YEARS OF UV COMPETENCE



Honle Spain S. A.



Honle UV France Sarl



Honle Rep. Office China

1976

- Formation of Hönle. The company develops, produces and sells medical radiation equipment, in particular

1980

- Development of the first UV-radiation equipment for industrial applications

1993

- Beginning of the development and sales cooperation with Grafix GmbH, Stuttgart

1994

- Concentration on industrial UV technology
- Start of the US business with the partner company, Honle UV America Inc., Marlboro

1995

- Formation of Honle UV (UK) Ltd., West Midlands

1998

- Formation of Honle UV France, Lissieu, Lyon
- Formation of Aladin GmbH, Rott am Inn: Development and production of its own radiation sources

2001

- Dr. Hönle AG goes public
- Foundation of Honle Spain S.A., El Prat de Llobregat, Barcelona
- Opening of a representative office in Shanghai, China

2002

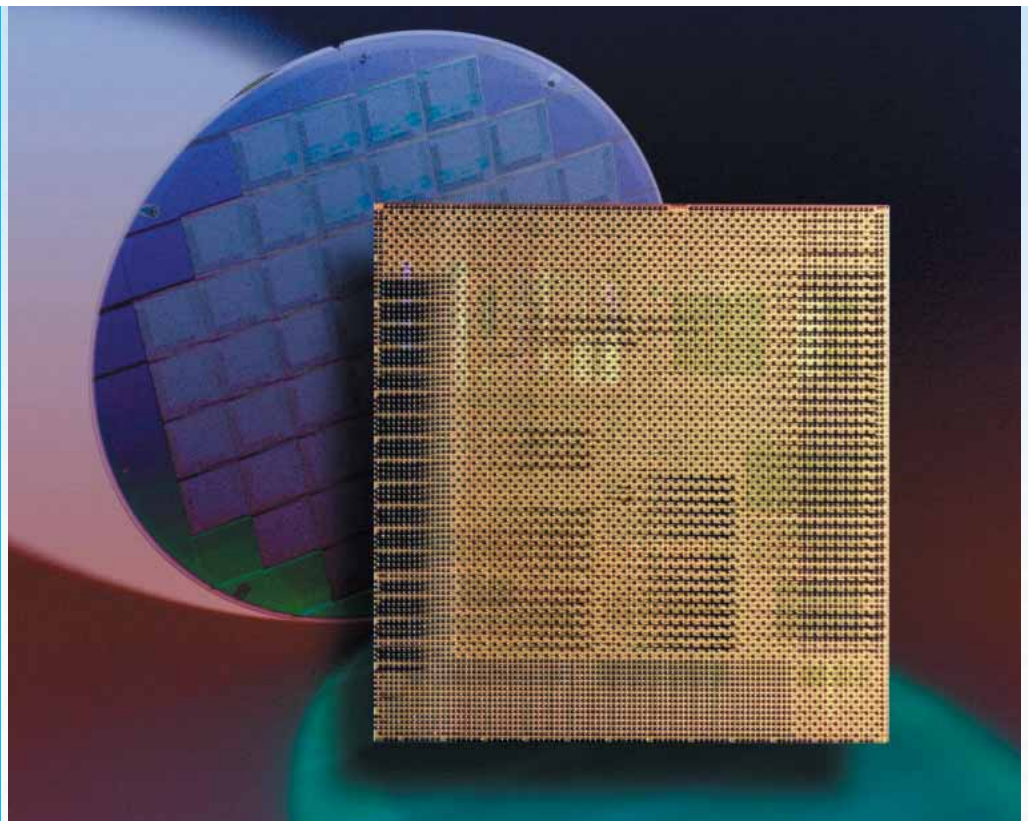
- Foundation of Wellomer GmbH, Ludwigshafen: internal development and production of own adhesives and casting compounds

2004

- Financial year with the strongest sales in the firm's history. The market honours the Hönle Group's development as a systems provider

**SELECTION BY MEANS
OF PRODUCTS
MANUFACTURED ON
UV TECHNOLOGY BASIS:**

- **Chip:**
UV-supported clean-room
manufacture
- **Labels:**
Shiny surfaces thanks
to UV flexi-print
- **Automobile components:**
UV coating makes fittings,
headlights and exterior
mirrors scratch-resistant
- **Jewellery:**
Precise bonding thanks
to UV radiation and
UV adhesives



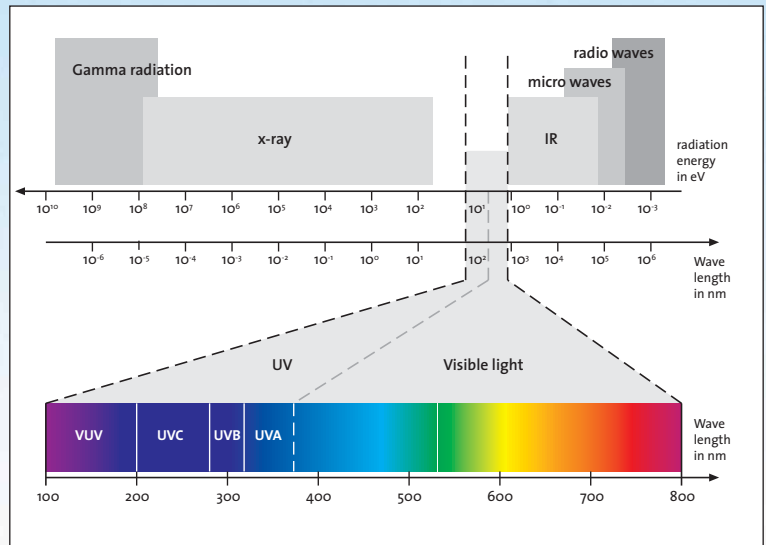
HÖNLE USES THE ELEMENTARY POWER OF UV LIGHT

For some 30 years Hönle has been using the power of UV radiation to offer industry an efficient and environmental-friendly alternative to traditional manufacturing processes. Hönle manufactures customer-specific UV systems in which gas discharge lamps generate UV radiation.

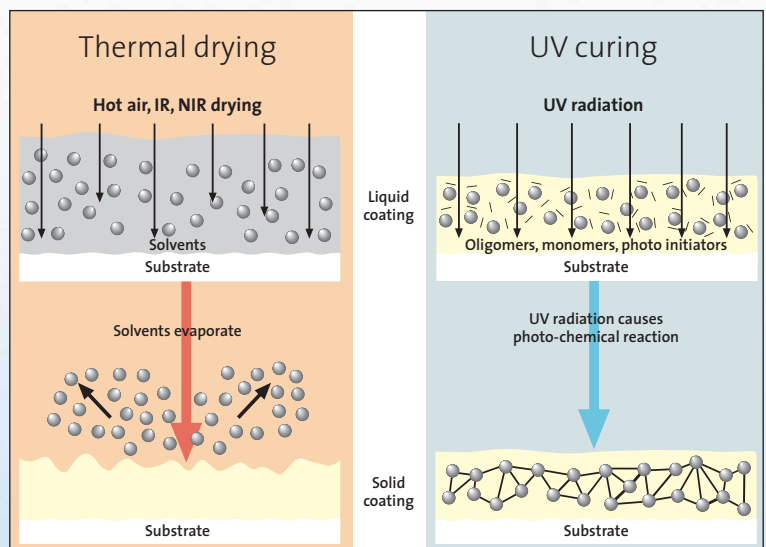
UV radiation has revolutionized manufacturing processes, as a look at the subject of materials curing shows. Presently, thermal procedures are dominant here. Inks, coatings and adhesives are heated in a procedure using high energy consumption whereby solvents and water evaporate. Since traditional inks and adhesives have a solvent content of up to 80 %, this usually leads to a discharge of hydrocarbons which adversely affects the environment. UV materials, by contrast, are made up to almost 100 % of solid matter. The UV systems' electromagnetic waves impact directly on the photo initiators in the applied coating and have a curing effect within a fraction of the time required for traditional curing procedures. The product can immediately undergo further processing.

Arguments in favour of UV technology

- 1. Quality:** UV inks and lacquers are more scratch-resistant, shinier, and their adhesive properties are superior to those of traditional products; at the same time, they are solvent-resistant. UV adhesives guarantee precise manufacturing processes.
- 2. Time:** The use of UV technology accelerates production processes and makes them flexible. Using UV adhesives, the curing time can be freely determined.
- 3. Environment :** UV technology is easy on man and the environment. It needs almost no solvents and is usually less energy consuming.



**Invisible, but nevertheless strong :
UV radiation in the electromagnetic spectrum**

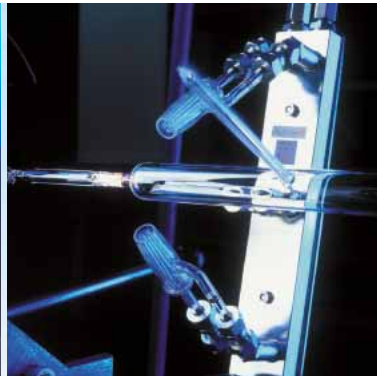


**Efficient and compatible with the environment:
UV curing in comparison with thermal drying**

HÖNLE IS A UV SYSTEMS SUPPLIER



UV equipment and systems



UV lamps



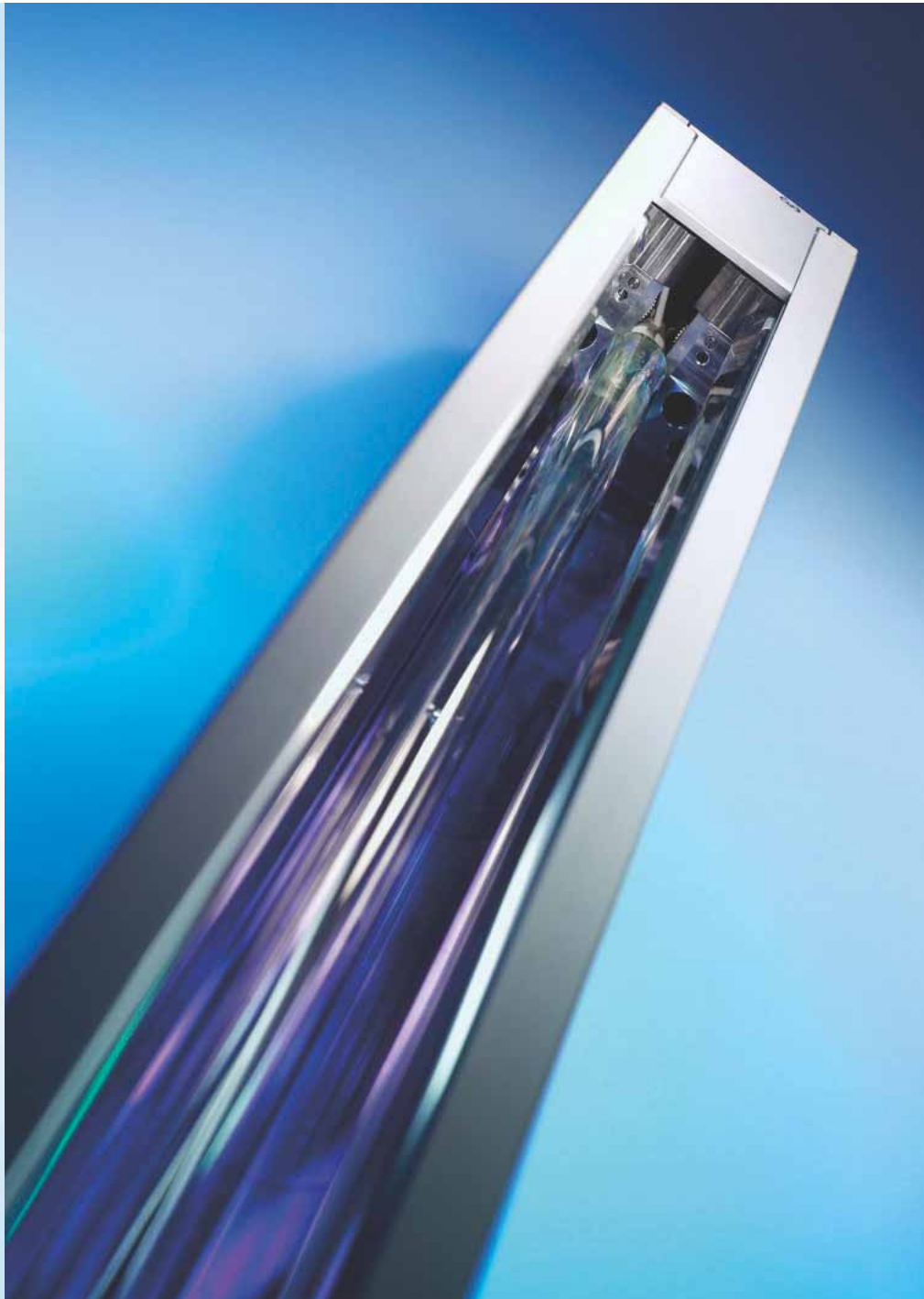
UV adhesives



Test laboratory

UV equipment and systems, UV lamps, adhesives, dosing equipment and UV meters: The Hönle Group's unique product range offers solutions that can be optimally adjusted to each individual customer's processes. Our long-standing experience as a systems supplier for the printing and refining industry and also for other manufacturing sectors is almost unrivalled. All Dr. Hönle AG products and processes are certified as to compliance with ISO 9001. We optimise the interplay of our UV plants, adhesives and dispensing technique and we integrate these UV systems into our customers' manufacturing processes. This ensures the best possible performance and top quality products.

THE BASIS:
UV EQUIPMENT AND SYSTEMS



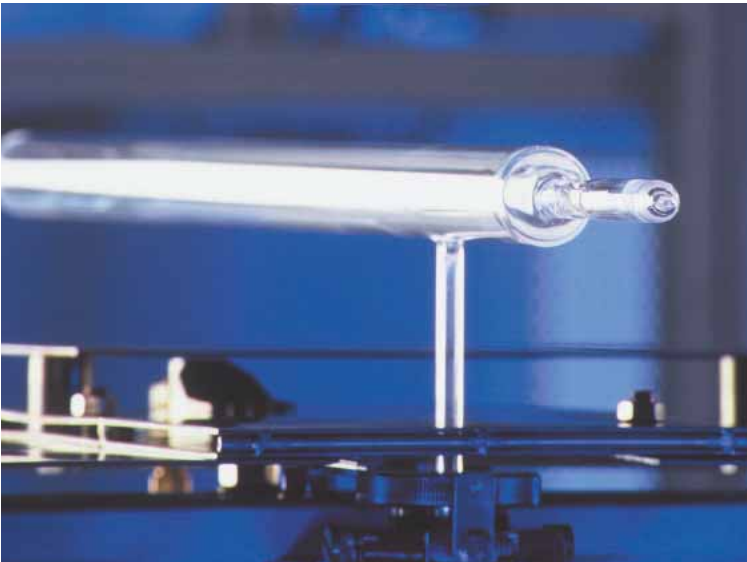
Long-arc lamp (left):
UV dryer for the printing
industry

Switch cabinet (below):
Supply and control of
UV systems

Spot sources (bottom, right):
Intensive UV radiation for
adhesives drying



OUR KEY PRODUCTS: INDIVIDUAL UV LAMPS



Hönle produces tailor-made UV lamps for a large number of applications. Together with the customer, we determine the radiation spectrum, output and arc length and then manufacture top quality gas discharge lamps. With up to 40 kilowatts, the intensity of these light sources is 500 to 1000 times stronger than that of ordinary household lights; depending on customer request, their length ranges from only a few centimetres to more than two meters.

UV lamps are produced by Aladin GmbH which was founded in 1998. Our subsidiary develops and produces UV medium-pressure lamps in state-of-the-art manufacturing plants. The high quality standards of this lamp manufacturer are emphasized by the fact that, in addition to Hönle, Aladin delivers its products to customers all over the globe.



**High luminous power:
UV lamp (above left, below)**

**State-of-the-art production:
machines at Aladin
(above, right)**

AN INNOVATION: CUSTOMER-SPECIFIC ADHESIVES

As a UV systems provider, Hönle delivers not only equipment and systems but also the corresponding adhesives and compounds. This offer from one source permits optimum adjustment of equipment and floor stock items to the manufacturing processes involved. Of with customers such as mobil phone producers, suppliers of disposable syringes or automotive suppliers profit from the variety of applications. Using UV technology, they are able to bond materials to the exact millimetre and so benefit from the Hönle Group systems competence.

Hönle pools its adhesives competence at Wellomer GmbH, which was founded in 2002. The products supplied by Wellomer GmbH address, among others, manufacturing companies which place top priority on the individual formulation of adhesives and compounds.



**In amber light:
Adhesives development lab
(above); Intensive tests for
innovative adhesives (left)**

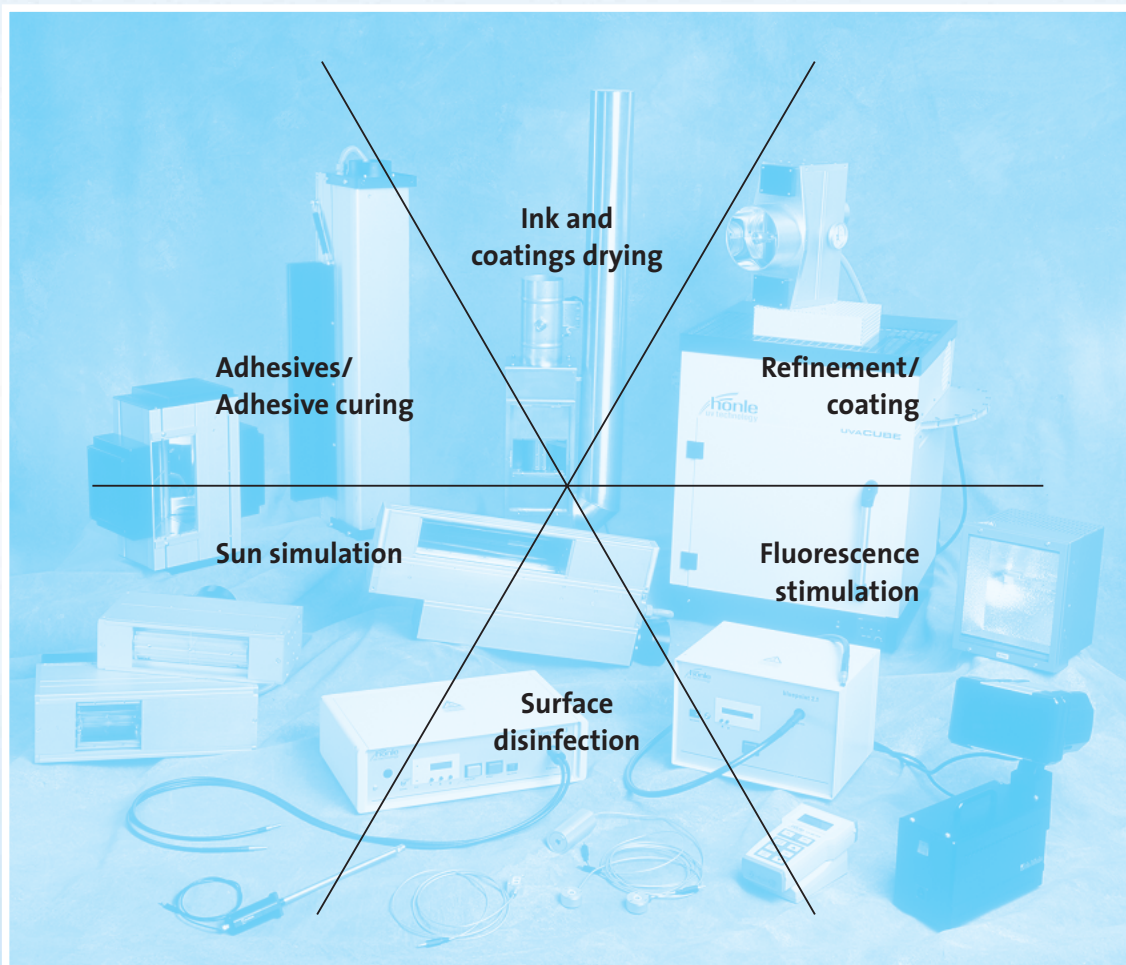
**Broad product range:
Hönle Group adhesives
(below)**



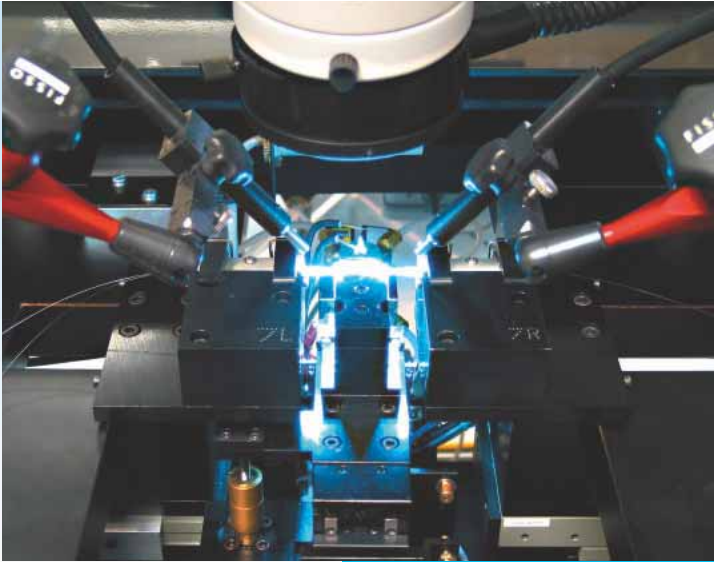
APPLICATIONS: WHAT UV LIGHT CAN DO

Ink and lacquer drying, the drying of coatings, adhesives curing or surface disinfection: Today, UV technology is used by many sectors and in a large number of applications. Hönle, with its broad modular product range, is among the few suppliers worldwide who cover this large number of application areas with its own solutions.

The application know-how which we have acquired over the past decades enables us to offer tailor-made systems solutions which are perfectly adjusted to the requirements of each individual customer.



ADHESIVES AND PLASTICS CURING PRECISION IN FRACTIONS OF SECONDS



**Filigree work:
Manufacture of glass fibres
using Hönlés Bluepoint
(above, left)**

**Precision:
DVD production with a
175 SOL (above, right)**

**Best acoustics:
Bluepoint is also used for
mobile cellular radio or cell
phone loudspeakers (middle)**

**To the exact millimetre:
Bonding of disposable
medical products with
UV light (below)**



AREAS OF APPLICATION:

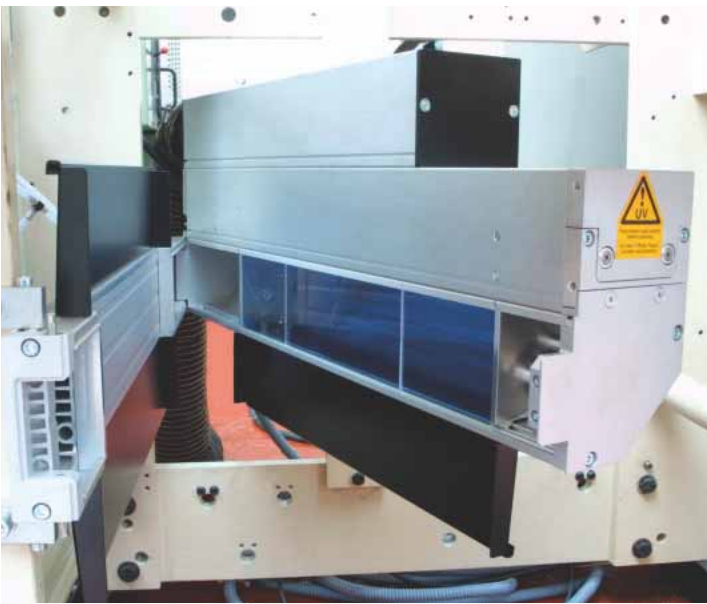
- Medical technology
- Electronics
- Optoelectronics
- Optics
- Glass / furniture industry



Be it glass fibre, a cell phone or a DVD: Materials must be bonded quickly and efficiently in all of these products where millions are manufactured each year – and this, precisely, is the great advantage of UV technology. When using UV technology, the moment when curing occurs can be freely determined and the drying process is completed within fractions of a second. Furthermore, UV adhesives can be used for a large number of materials and need no solvents.

Such adhesive applications can be easily automated and therefore increase efficiency in the manufacturing process. New adhesives such as RI-ACT also raise operational safety due to visualization of the curing process. The products offered by Wellomer are an ideal supplement to Hönlé's competence as a UV systems provider.

INK AND COATINGS DRYING FOR THE PRINTING INDUSTRY HIGH QUALITY AND ENVIRONMENTAL ACCEPTABILITY



Yoghurt pots, chip cards and brochures have one thing in common: they are printed. Manufacturers of such packaging are increasingly relying on UV technology for three reasons:

Firstly, UV print permits more precise point structures and therefore a particularly brilliant printing quality. The print product is scratch-resistant, resists abrasion and is solvent resistant – product properties which play a decisive role in food packaging, for example.

Secondly, UV inks and coatings are solvent-free and therefore permit efficient, fast and environmentally-friendly drying in the printing process.

Thirdly, printing machines which use UV technology need less frequent cleaning: set-up and job rotation times are reduced and machines' productivity is increased.



Brilliance:
UV flexo printing plant with integrated Höhle technology (above, left)



Efficiency:
Hönle's UVAPRINT HP in rotary offset printing

Competence:
Hönle systems support print and processing

AREAS OF APPLICATION:

- Sheet-fed offset printing
- Rotary offset printing
- Flexo
- Ink jet
- Surface refinement

COATING

SCRATCH-RESISTANT, GLOSSY AND DURABLE

Scratches substantially reduce the functional efficiency of automobile headlamps, monitors or cell phone displays. Moreover, customers for these high-value products also expect an unblemished surface. UV technology stands for scratch resistance, gloss and durability. Consequently, an increasing number of manufacturers are also taking advantage of this technology in the coating of three-dimensional and arc-shaped objects. Systems competence and the ability to configurate and manufacture individual systems are points in favour of Hönle as a coating partner.



AREAS OF APPLICATION:

- cell phone covers
- automobile components
- equipment covers
- furniture films
- technical films
- packaging
- glass
- CD/CD R
- music instruments
- glass fibre cable
- and much more



Glossy:

Plant for UV film coating with gloss and mat coating (above)

Durable:

3D coating of a TV case (middle)

Scratch-resistant thanks

to UV radiation:

Headlamps, shock absorbers, outside mirrors and interior fittings (below)

DISINFECTION, SUN SIMULATION AND FLUORESCENCE STIMULATION PERFECT QUALITY ASSURANCE



**Disinfection of screw plugs
in a drink filling plant**

**Sun simulation in a climate
chamber**

**Fluorescence testing of a
wallpainting**



Surface disinfection

Disinfection of foodstuffs, cosmetics and drug packaging requires substantial chemical efforts and is cost intensive. UV technology offers an efficient and, at the same time, environmentally-friendly alternative. UV radiation disinfects the surface of packaging within fractions of seconds by destroying the DNA of unicellular organisms. A second advantage: the use of chemical substances as is common in traditional procedures is unnecessary in many UV applications.

Sun simulation

In order to determine the effect of the sun on certain coatings or materials, the aging process can be observed in nature or it can be massively accelerated by UV technology. The Hönle plants simulate the impact of natural sunbeams by using a time-lapse procedure. Leading automobile manufacturers rely on the resulting efficiency increase in their test series.

Fluorescence stimulation

UV radiation can make structures visible which cannot otherwise be seen by the human eye; it is therefore possible to recognise any quality deficiencies at an early stage. The aviation industry, for example, identifies even the smallest capillary chinks in power units by means of UV radiation. In fluorescence testing it uses mobile systems: Hönle supplies one of the world's most intensive small mobile flood curing unit. Museums and restorers also make use of their radiation power when identifying the retouching and overpainting of paintings.



SELECTION BY MEANS OF PRODUCTS MANUFACTURED ON UV TECHNOLOGY BASIS:

- **Foodstuffs:**
Manufacturers rely on the power of UV light for disinfection and print
- **Cameras :**
UV radiation bonds case and lens
- **DVD:**
From bonding to deco print, relying on UV radiation
- **Glass fibre:**
UV technology in coating and bonding processes



HÖNLE: A PARTNER CLOSE TO YOU



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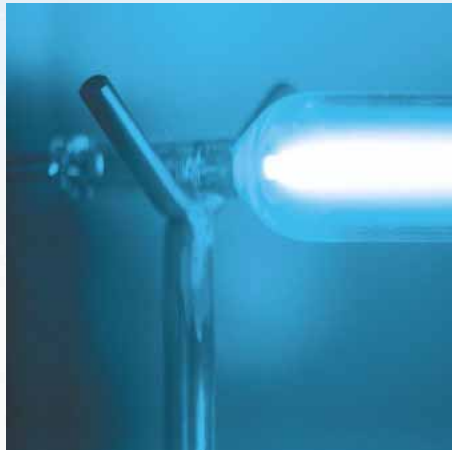
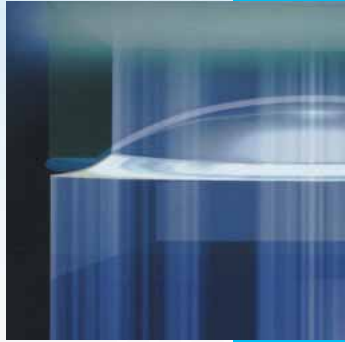
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All technical and process-related details depend upon application and may deviate from the data in the brochure.

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