Smart system solution for needle bonding

A main field of application for adhesives in medical systems is needle bonding and syringe assembly – the bonding of stainless steel needles or cannulas into glass or plastic syringes. These needles are produced in large quantities which requires rapid and reliable bonding in high volume production. In addition to their mechanical bond strength, the adhesives used must allow high-precision production and permanent joining and must withstand various sterilization methods.

Panacol's uv curable Vitralit® adhesives exactly meet these requirements. Vitralit® adhesives are available in various viscosity ranges to perfectly fit the design of the needle hub and fill the gap between the hub and the needle. The material of the hub and needle also affects the choice of the adhesive: Many adhesives are UV-curing, which requires the use of transparent and UV-permeable materials. For materials that block UV light, such as polycarbonates, long-wave LED curable adhesives are recommended.
All Vitralit® adhesives recommended for needle bonding are solvent-free and certified USP Class IV and/or ISO 10993 for use in medical equipment. In addition, high needle extraction forces were measured with all needle bonding adhesives even after several sterilization cycles. For visual quality inspection, fluorescent versions of our medical grade adhesives are also available.

The choice of the adhesives requires a matching dispensing system for reliable and precise dispensing in a rapid production environment. The high quality demands required for medical devices, as this needle bonding application, confirms the choice for bdtronic's volumetric dispensing equipment.
With the mini-dis solution provided by bdtronic, dispensing in microliter range is made easy, regardless of the adhesive viscosity. Thanks to the continuous volumetric dispensing, the dispensing is pulsation free ensuring optimal process speed, repeatability and accuracy.

Finally, the choice of the UV curing equipment depends on the adhesive and the wavelength which triggers polymerization. For needle bonding with Vitralit® products you can use either UV-A or visible LED light.
Due to a special LED assembly and an own optimized electric power supply, Hönle LED Powerline LC guarantees a high-intensive irradiation for fastest curing and shortest cycle times. In addition, the irradiation time can be selected in a range of 0.01 – 99.99 sec and thus precisely adapted to the process requirements.

Hönle LED Powerline heads have a compact design for an easy integration into any production line. The high-intensive, water-cooled LED-UV is suitable for clean room operation.

About bdtronic

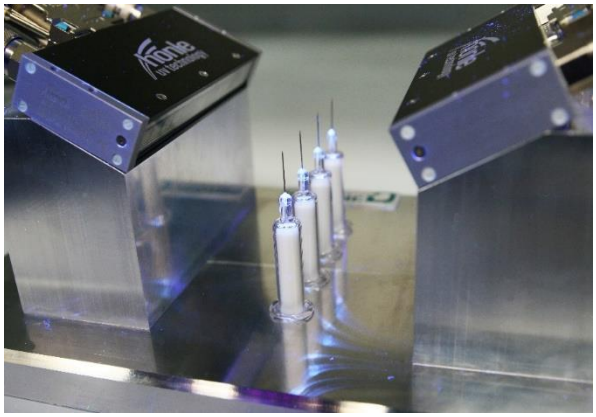
bdtronic is a global mechanical engineering company in the field of 1C and 2C dispensing technology, plasma pretreatment, heat staking and impregnation technology for electric drives. Our mission: We build excellent machine solutions for the future mobility and living.

About Hönle

Dr. Hönle AG, head of Hönle Group, is one of the world's leading suppliers for industrial UV technology. The UV specialist, who is noted on the stock exchange, develops, manufactures and distributes UV/LED-UV systems, UV lamps and UV measuring equipment, worldwide. The systems are used for the cross-linking of photo-reactive substances, for air and surface disinfection, solar simulation and lighting. Hönle products are used at manufacturing processes in electronics, microelectronics, precision engineering and the optical industry, as well as in the printing, coating, automobile, aerospace, pharmaceutical and photovoltaic sectors.

About Panacol

Panacol-Elosol GmbH, a member of the global Hoenle group, is an international supplier of adhesives with an extensive product range that includes UV curable adhesives, structural adhesives, and conductive adhesives. Panacol offers an extensive product range of medical grade adhesives, formulated specially to meet the special requirements of medical devices manufacturers.



Caption: The uv adhesive bonding the needles into the needle hubs is being cured under uv light.

Photo: Hönle/bdtronic/Panacol