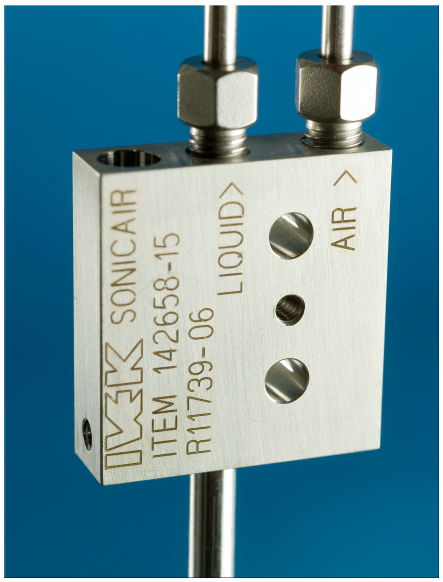
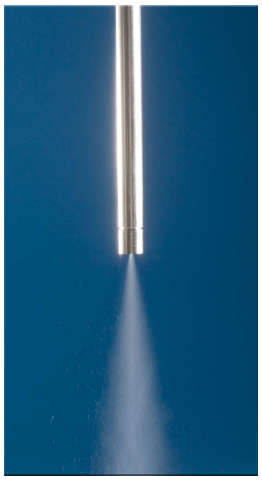
SONICAIR

ATOMIZING SYSTEMS



IVEK Sonicair Atomizing Systems are utilized for many different applications. These include spraying diagnostic reagents, plasticizers for solvent bonding, water for moisturizing and applying silicone to surfaces for lubrication in medical and industrial manufacturing. The Sonicair nozzle is manufactured from 316 stainless steel and passivated. There are no moving parts or valves that can compromise the effectiveness of the spray. Due to the simplicity of design, the Sonicair nozzle does not usually require a lengthy process validation test. The manner in which this nozzle atomizes fluid is very unique. Unlike many air nozzles that depend on time and pressure to atomize fluid, the IVEK Sonicair nozzle is fed by a positive displacement fluid delivery system. The dispensing system delivers a precise volume of fluid to the nozzle, injecting it into an air stream. This creates an atomized field that exits the nozzle through a machined orifice whose measurement is determined by the process specifications or through applications testing. The outcome is a uniform and consistent conical or beam spray pattern. A conical spray has proven to be particularly effective for coating the interior diameter of barrel syringes. The air flow exiting the nozzle also helps to expand the spray pattern by nebulizing the spray as it travels further away from the orifice. A beam spray optimizes the fluid penetration of membrane substrates in diagnostic test strip manufacturing.



The repeatability of fluid delivery through the Sonicair nozzle is dependent upon the dispenser it is used with. The nozzle has been specifically designed to be used with IVEK dispensers and the combination results in a highly repeatable method, which is appropriate for validated processes. IVEK dispensers routinely achieve 0.1% CV in manufacturing operations. The Sonicair can atomize aqueous and viscous solutions as well as suspensions with particle sizes 5 to 50 microns. There are many different parameters which may effect a spray. Temperature, viscosity and the surface tension of the fluid are among these considerations. IVEK offers to test each application in order to determine the viability of its atomizing systems. The resulting data is used to assist in specifying a project's fluidic requirements.

The Sonicair system has been instrumental in the development of the efficient coating of barrel syringe ID's and syringe needles. IVEK's Sonicair system offers a solution for manufacturers looking to eliminate solvent based lubrication formulations from their process. Frequently, cross linking silicones are solvent based and require dispensing in higher volumes. Evaporating solvents cause fluctuations in the coating volumes, are difficult to control, and are potentially a health risk. The Sonicair nozzle has successfully atomized silicones ranging to 100,000cps in volumes below 1mg per spray. Other applications include atomizing lubricants, electrolytes, antibodies, eluding drugs and polymers.

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