NEW WILCOMAT® X-Ray Particle Detection

The two most important Critical Process Quality Attributes in glass container handling process are maintaining the sterility and the indemnification of foreign particle absence within a closed container.

In order to meet these demands, WILCO AG of Switzerland has besides the leak detection developed a foreign particle detection system based on X-Ray. This allows for the first time ever detecting non-visible particles in lyo cakes and in suspensions.

Usable for vials, ampoules and syringes. The key elements of this development are:

- Particles can now be detected in lyo cakes after the lyo process.
- Non-visible particles inside the lyo cake and inside a suspension can now be detected like visible particles outside.
- Possible for Metal, Glass and many other particles.
- Bubbles do not cause false rejects, since these are practically invisible.
- Modular design, allowing integration of the technology into the FINAL QUALITY machine platform or use as stand-alone technology.
- Using a low-energy radiation source ensures the product integrity.
- Combinable with CCI and cosmetic inspection.

Security speeds of up to 400 cpm on smaller products and 200 cpm on larger products are achievable.
WILCOMAT® X-Ray
Particle Detection

Additional options using X-Ray

**Operation**
While passing through the low-energy X-Ray field, any particles, visible and non-visible, are being magnified onto a fast CMOS detector array. The resulting size of the particle picture can be calculated due to the distance relations between X-Ray source/sample and sample/detector.

The detector converts the incoming X-Rays into light and transfers the picture onto the CMOS diode array. The results are immediately available and are evaluated instantaneously, allowing the processing of high production speeds.

The energy, to which the products are actually subjected to, is in the µW range, guaranteeing this process to be absolutely safe.

Non accepted containers are tracked and separated when they reach a reject station, with the physical removal confirmed in a fail-safe manner.

**Additional technologies from WILCO AG**
- Patented vacuum based technology for liquid filled products, such as vials, syringes, BFS
- Laser based headspace analysis for oxygen or moisture measurement in vials, ampoules and syringes
- Vacuum and pressure decay for solid and powder filled products and ampoules
- Force Sensor Technology for flexible products, such as blisters, pouches, bags
- Activation and sniffing technology for pharmaceutical aerosol cans (MDI's)
- NIR (Near Infra Red) for direct moisture measurement in lyo cakes and detection of melt backs

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