X-ray Inspection Solutions for the Pharmaceutical Industry
X-ray Inspection
The Safest Cure to Product Safety

We understand that pharmaceutical manufacturers face many challenges, from maximizing production efficiency and maintaining product quality to minimizing the risk of brand damaging product recalls and ensuring compliance with stringent standards.

Experience gained over many years in a range of industries, including pharmaceuticals, cosmetics and food enables METTLER TOLEDO Safeline X-ray to fulfil your specific requirements and enhance your competitive advantage.

X-ray systems ensure your products are free of contaminants and are presented in the highest quality possible providing outstanding product safety and integrity, ensuring your customers are safe.

Product safety is a legal obligation and an issue of brand reputation
The seriousness with which the market views safety issues is underlined by the wide range of national and international legislative and regulatory standards such as HACCP (Hazard Analysis Critical Control Points) and GMP (Good Manufacturing Practice), as well as standards set by retailers. By incorporating appropriate inspection equipment into a company-wide approach to product safety, manufacturers can protect their reputations and meet their legal obligations.

Fully integrated solutions tailored to suit your needs
Whether you manufacture tablets, capsules, medical devices, powders or liquids, Safeline X-ray can provide either stand-alone or fully integrated bespoke x-ray systems. Our in-house engineering team listen to your requirements and design tailored solutions to meet your specific needs.
X-ray inspection sees what you can’t see

Modern x-ray systems are multi-tasking defenders of product and brand quality as well as detectors of contaminants. In a single pass at high line speeds, x-ray systems can perform several inspection tasks simultaneously.

X-ray systems automatically “look inside” the final sealed package to confirm that all components are present while identifying and rejecting contaminated or damaged products. This ultimate inspection capability allows:

- Inspection of final sealed packaged products like metal foils, blister-packs, cartons, pouches, bags, glass and plastic containers as well as medical devices, continuous web products and pumped products
- Detection of metal, glass and high density rubber or plastic contaminants
- Discovery of missing and damaged products/components (e.g. instruction leaflets) or doses even in multiple blister packs
- Under/over fill inspection as well as measuring zoned and gross mass of final sealed products
- Monitor seal integrity at high speeds
X-ray Inspection
More Than Just Contamination Detection

Contamination Detection
X-ray inspection technology offers exceptional ferrous, non-ferrous and stainless-steel detection as well as the detection of other foreign bodies like glass, metal, stone, high density plastics such as PTFE.

Application Example
A manufacturer of powder medication, filling in metallised film sachets, is using an x-ray system to detect ferrous, non-ferrous and stainless steel contaminants at the end of the production line, when the package is sealed and the risk of further contamination is minimal. This ensures outstanding product safety even when packaged in aluminium foil or metallised film.

Identifying Missing or Broken Items
X-ray systems can detect broken, faulty and missing items. For manufacturers looking for assistance with FDA compliance and brand protection assurance, an x-ray system can for example check blister packs of tablets for many forms of anomalies (e.g. crushed or missing blister packs) at rates of 500 packs per minute.

Application Example
When Pfizer Pharmaceuticals, LLC, the largest drug manufacturer in the world, noticed that one of their over-the-counter blister packaging lines had a problem with broken tablets and occasionally crushed or folded blister packs inside the packaging they decided to install an x-ray inspection system. The installed x-ray system not only detects and rejects multiple contaminants, but also verifies product and package integrity.
Monitoring Fill Level and Measuring Mass
X-ray systems can inspect the overall mass of a pack and individual masses within various zones or compartments of a product even when the product is packed in multiple layers. If the calculated mass falls within a programmed tolerance, the package is good. If it deviates, the package is rejected. Measuring overfills and underfills has an effect on manufacturing costs as well as consumer satisfaction. A x-ray system can have an optional feedback to the filling machine which automatically adjusts the fill levels and this reduces giveaway, saving costs.

Application Example
A major drug manufacturer is using an x-ray system to measure the mass of powder sachets. Even though two sachets are joined together as duplexes the x-ray system is able to measure the mass of each individual sachet. By measuring the mass of each sachet the x-ray system ensures that the correct dosage is filled into the sachets.

Product in Seal Inspection
The seal-inspection tool for x-ray systems can identify particles down to 1mm caught in the seal areas. The safety of pharmaceutical products is easily compromised by stray particles of product or contaminants trapped within airtight seals. The trapped particles disrupt seal integrity and if the seals are no longer airtight, products can lose their sterility. But this accurate x-ray tool has the power to raise consumer and manufacturer confidence in sterile and airtight packaging by spotting seals that contain product.

Application Example
On the production line at Advanced Medical Solutions in the UK, a premium supplier to the global woundcare market, an x-ray system checks paper and foil packaged sterile wound dressings. This dual-purpose x-ray system looks for dressings trapped in the seals and simultaneously ensures that the product is free of contaminants.
Typical pharmaceutical applications inspected by x-ray systems:

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<th>Continuous Web Products</th>
<th>Medical Devices</th>
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<tr>
<td>Contamination Detection</td>
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<td>Product in Seal Inspection</td>
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**End of Line Products**

X-ray inspection systems ensure product safety and integrity for a wide variety of pharmaceutical products at the end of the production line and before being shipped. X-ray systems detect dense contaminants and product faults in end of line products like pouches, carton boxes, jars etc. In addition x-ray systems do not suffer from changes in product temperature or moisture like traditional inspection systems ensuring minimum false rejects.

**Continuous Web Products**

Blister packs and sachets are commonly packaged in continuous web products before being cut and packaged into the final packaging. The x-ray inspection system for continuous web products is ideally integrated into the production as soon as possible after the fill process - this provides filler feedback on a quick reaction loop, minimizing the number of potentially defective sachets. Safeline offers the first x-ray inspection system in the world which allows simultaneous filler feedback and inspection at the filler station and its unique variable speed technology allows mass and imaging accuracy to be maintained regardless of speed variations.
Medical Devices
X-ray inspection systems can inspect a wide variety of medical devices. X-ray systems look inside the final sealed packaging and confirm all components are present for example count needles and syringes in a box, check the correct position of the locking lever in an asthmatic inhaler, count contact lenses in a box or check transfusion bags for contaminants and integrity.

Pumped Products
X-ray inspection systems can be used for inspection of pumped products, typically slurries, semi-solids and fluids before final packaging and further value is added to the product. X-ray inspection systems for pumped products are used to inspect products at an early stage of the production to minimise wastage and to save costs. It offers very good contamination detection levels because the product is homogenous and the depth of inspection is small. Typical pumped applications are creams, gels and liquid medications.
Global Service Network
For Total Peace of Mind

Every great relationship is built on positive intent – a shared willingness to approach each opportunity constructively and to search for improvement at every step. A collective responsibility!

This attitude is obvious from the moment we install one of our x-ray inspection systems. Our engineers provide solutions that are built on key elements that represent the cornerstones of a consistent world class service offering.

Improvement of Overall Equipment Effectiveness (OEE)
OEE is a critical tool for the pharmaceutical industry and OEE improvement drives increased efficiency, higher quality and reduced cost. X-ray inspection solutions support manufacturers on their journey to world-class OEE status.

Standard Service Products
We have a full range of standard service agreements to suit all application or production requirements.

For even greater flexibility, tailor the agreement to suit your needs.

• Extended Agreement - Fully inclusive with predictable service costs throughout equipment life, such as labor, travel and spare parts.
• Standard Agreement - As Extended Agreement including access to a full spare parts inventory.
• Basic Agreement - Cost effective approach for scheduled, routine maintenance and performance verification visits.
• Tailored Agreement - Flexible service agreement designed specifically for customers’ unique requirements.

Want to have your product tested? Call +44 870 066 3150 “FREE product testing”

www.mt.com/safeline-xray

For more information