Busting myths plus best practices for detecting detectable products

Despite the increased availability and usage of detectable products and materials, physical contamination, particularly from rubbers and polymers, continues to unnecessarily cause expensive recalls and put consumers at risk. BST have published the details of 16 resulting high profile product recalls in 2016 so far.

Top four incorrect assumptions about detectable products

- They are detectable so we will work on my pre-calibrated metal detector.

This is a very dangerous assumption. A metal detector’s capability will depend on the model, the size of the aperture and the type of product it is inspecting.

- For example a large metal detector aperture inspecting cases of frozen meat (with an increased product effect) is not likely to achieve a consistent sensitivity of <3.0mm FE, whereas some small pieces of metal detectable plastic will need a sensitivity of around 1.0mm FE for reliable detection.

A good example is detectable brush bristles, which require a smaller, more sensitive aperture to achieve reliable detection.

- This makes detectable brush bristles more suited towards companies such as nutraceutical manufacturers who although manufacturing tablet forms are bound by the same risk management and safety framework as food manufacturers.

Aluminium product packaging can also mask the contamination caused by certain detectable products, making them completely invisible to the metal detector.

- As such, producers using aluminium packaging should take extra care when selecting appropriate detectable products.

The more detectable the better:

Again, this is potentially a dangerous assumption. A highly detectable material is not necessarily the safest as making a material more detectable can compromise its mechanical strength and impact resistance.

BST have been manufacturing in detectable plastics for many decades and in our opinion, highly detectable, but brittle material is more likely than a slightly less detectable material that is incredibly difficult to snap or shatter. This is the thinking behind BST’s leading XDETECT material.

The level of detectability of a product is greatly dependent on the base material. For example with softer materials like silicone the addition of detectable elements weakens the structure of the material, decreasing its tear resistance and increasing the chances of the part failing and becoming a foreign body risk. If a detectable plastic is pulverised you are not likely to find all the fragments, especially the small ones! This is why tear and impact resistance are just as important as detectability.

- If my items are detectable it does not matter if I lose them:

Absolutely not! Detectable plastics are a final line of defence in preventing plastic foreign body contamination.

They should be treated and cared for like any other high risk item, following best practice for preventative checks, maintenance and replacement.

- Detectable products are also x-ray visible:

Not always and this is a very important point. Metal detectors work by looking for unexpected magnetic field disturbances, x-ray inspection systems work by looking for unexpected variations of density. These are two very different technologies that require detectable plastics to contain very genuine differences.

BST XDETECT is a dual detectable material that can be detected by both methods. However food processors should not make assumptions about the capabilities of detectable products and if unsure should check with their manufacturer.

- Many of the less expensive detectable materials available only feature metal detectable additive and are marketed on the false assumption that this is sufficient for x-ray visibility.

Three best practices for detectable products

- Test your detectable products on your inspection system:

It is important to ascertain that the sensitivity of your inspection equipment is sufficient, that it is compatible with the chosen detectable product and that the detectable product is compatible with your food’s product effect on the inspection system.

- Test the whole detectable product, then break it down into pieces or request a material test piece from your manufacturer.

This is essential to understand the capabilities and limitations of the whole system and should form part of your risk analysis.

- Do not wait for an incident or an audit non-conformance:

If you are aware of a machine part or production area item that poses a foreign body risk, ask your detectable product manufacturer what they can do. There are now more detectable materials available than ever before, so it has never been easier to have a safer alternative.

Do not wait for an incident to happen, you might just end up as another statistic on BST’s Twitter page and your company’s reputation may be at stake.

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A worrying trend noticed by BST and other detectable product companies is that there is often a distinct lack of understanding by some food processors in their implementation of detectable products. This lack of understanding can often lead to unsafe assumptions and bad practice in the use of detectable products.

Here we aim to help food processors by busting some of the myths around detectable plastics and other detectable products, as well as suggesting some best practices to use detectable products safely.