



Food Manufacture

# Foreign Body Detection

## Lesson 1

Understanding the importance of foreign body detection and identifying the different ways to detect them in a food product is explained within this course.





# Learning Objectives

- Define what a foreign body is
- Understand the importance of detection equipment testing and how and when it should be performed
- State how detection equipment should be used
- Recognise when and where detection equipment should be used





# Learning Objectives

- Describe what to do if the detection equipment fails during testing
- Recognise the function and use of filters and sieves for foreign body detection
- Describe the function and use of metal detectors and x-ray equipment for foreign body detection
- Explain the types of metal detector and x-ray system





# Learning Objectives

- State the key points included in a metal detector and x-ray equipment procedure
- Identify the function and use of magnets for foreign body detection
- Summarise the function and use of optical sorting equipment for foreign body detection
- Summarise the importance of container cleanliness in foreign body detection





A foreign body  
also known as a  
physical  
contaminant is an  
undesirable solid  
object found in  
food





# **The most common foreign bodies found in food are:**

Metal

Insects

Bones

Stalks and  
stones

Glass

Plastic

Jewellery

Hair



**A food operative  
has a duty to  
ensure they do  
everything they  
can to prevent any  
foreign bodies  
from entering the  
food**



A visual check of the ingredient, food or product is one of the most important checks to be carried out in order to prevent foreign body contamination of the product







**Equipment is  
also used to  
detect or  
remove foreign  
bodies from  
product**



An assessment is completed on each production process to decide which equipment is used to detect or remove any foreign body contamination.





# Some foreign body detection/ removal equipment are:

- Filters
- Sieves
- Metal Detection
- Magnets
- Optical sorting equipment
- X-ray detection equipment
- Other separation equipment e.g. gravity separation



The type,  
location,  
sensitivity of the  
detection and or  
removal method  
will be  
documented





**The equipment  
will be located as  
close to the end  
of the production  
process as  
possible so the  
whole process is  
monitored**





The sensitivity of the detectors is specified, this takes into account the nature of the product and possible contaminants





**Regular checks  
are completed  
using test  
pieces of a size  
just above the  
limit of  
detection**



**The frequency of routine tests will be determined when considering these five pieces of information**

1. The need for extra checks at the start and end of shifts
2. Product Changeovers
3. The need for regular checks throughout the production process
4. Changes in machine settings
5. Customer requirements





**If the equipment  
has been found  
to be not working  
then all product  
will need to be  
rechecked since  
it was last  
verified**



If the detector fails during a routine test a re-inspection of all the product since the last successful test needs to be completed





**The person  
responsible for  
completing the  
check must be  
trained on how  
to do the  
checks  
correctly**



If foreign material is found by the detection equipment then there must be an investigation into the source of the material to eliminate any further incidents





Data on the foreign material can be used to identify any trends which could help to reduce any future contamination





# Revision Activity 1

**Name three types of foreign body detection equipment?**