Food Manufacture

Food safety in manufacture

Lesson 4

This is a level 2 standard course which explores all aspects of food safety, within food manufacturing businesses.

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Temperature measuring devices

Hand probe thermometer

This device is better for solid form products.

Temperature measuring devices

Infra-red probe (gun type) thermometer

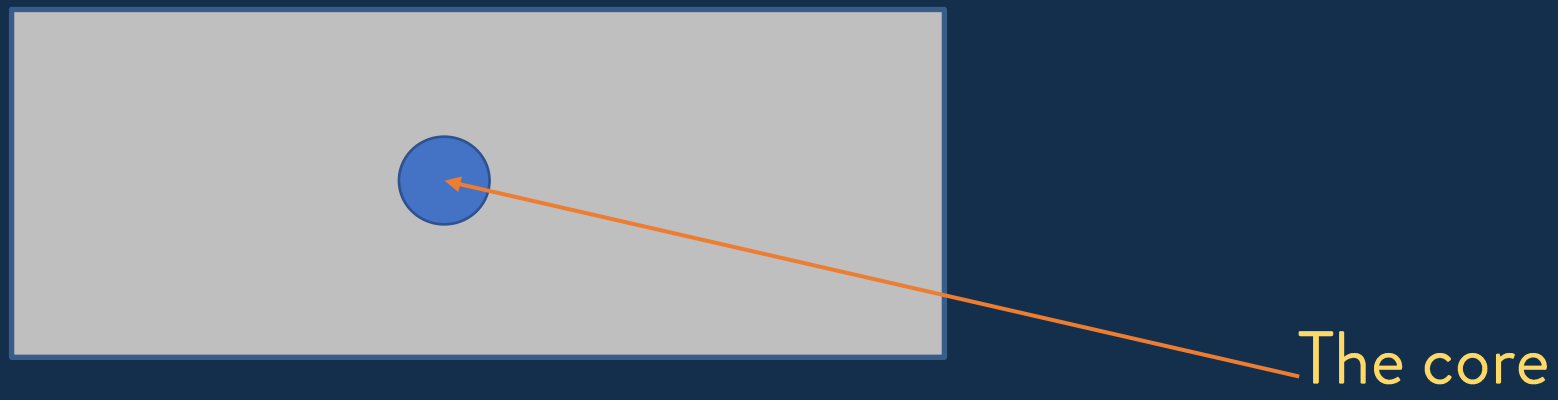
This device is better for liquids.

Using a handheld temperature probe

Should be:

- Calibrated at the start of the shift. This is to ensure they are working correctly before anyone uses them. An incorrect thermometer will lead to unsafe products.
- Cleaned and disinfected between each use, to stop cross contamination.

Taking the temperature of a product



To take the temperature of a product, you need to ensure you take the temperature of the core. This is either the coldest or the hottest part.

Temperature Danger Zone

Boiling point 100°C

Reheating 75°C

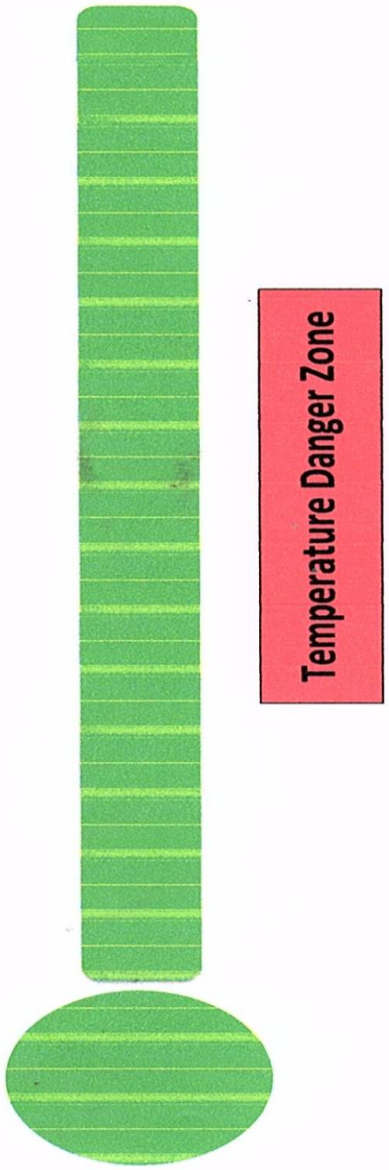
Cooking 70°C

Hot holding 63°C

Body Temperature 37°C

Refrigeration 8°C

Freezer -18°C



The temperature danger zone is between 8°C and 63°C, an optimal temperature for bacteria growth is 37°C.

Below 8°C growth is stopped or significantly slowed down. Above 60°C bacteria starts to die. It is advised to cook food until it reaches a core temperature of 70°C for 2 minutes.

Chilled storage

Store at or below:

- 8°C – law
- 5°C – good practice

If food is not stored at the correct temperature, it could cause bacteria to grow, causing food poisoning.

You should never put hot food into the chiller. Hot food will heat up the chiller, so products such as dairy will warm up causing bacteria to grow.

A blast chiller will reduce the heat of a product quickly, so the product isn't in the dangerous temperature zone for a long time.

Raw/uncooked food should be stored in the low-risk area, or at the bottom of the chiller. This is to stop raw products touching or spilling on ready to eat food.

Ready to eat food should be stored in the high-risk area, or at the top.

e.g. cooked ham

Everything must be labelled with a product description and the product date. Some may require a production time. It is good practice to use different coloured labels to make it easier to see what product is the oldest.

Chilled storage – how to store

Stock rotation must be carried out to reduce waste.

Chilled storage – how to store

All out of date food must be segregated, so it isn't used.

Frozen storage

Freezer temperatures should be at or below -18°C.

All food must be wrapped to prevent contamination, this can occur through freezer burn causing food spoilage. Taste can also be affected.

Frozen storage

When storing food in a freezer:

- Raw foods should be on the bottom shelf
- Longest shelf life should be at the back
- Make sure all food is labelled, frozen food should have a use by recommendation

Dry goods storage should be :

- Well ventilated, to stop condensation. Water can contain bacteria
- Clean and light to see dirty areas which need cleaning and reduce bacteria growth. Staff can also work safely
- Everything must be stored off the floor and away from walls. This is to protect from bacteria and prevent attracting any vermin

Dry goods storage should be:

- Stock control checks, should be carried out weekly.
- Stock can have a short or long life, so regular checks are needed.
- Designated area for returns or discarded stock, so it isn't used.

Thawing food

Check to ensure that food is thoroughly thawed before cooking.

It can be defrosted in a chiller, microwave or special defrosting unit.

Cooking

Ensure that food is cooked thoroughly, by checking the CORE temperature.

Ideally the temperature should reach 70°C and hold that temperature for at least 2 minutes.

Cooking

It is best to cook the product to the highest temperature as possible without spoiling the quality of the product. This ensures the food is cooked safely.

Cooking

Where food is been manufactured in a busy factory, temperature checks need to be carried out regularly. This can be as regular as every 20 minutes, depending on the company's procedures.

Cooking

A selection of products should be temperature tested in every batch.

The amount will depend on the company procedures. For example, approximately 5 products from each batch.

All temperatures must be recorded on the critical control paperwork.

Reheating food

Reheat food to a minimum temperature of 75°C.

Only reheat food ONCE.

Reheating food

Only reheat the batch of food which is going to be consumed, don't reheat the full batch. Constantly reheating food will lead to bacteria multiplying. This is due to the food temperature passing through the dangerous temperature zone (between 5°C and 63°C) too many times.

Hot holding

Hot holding is when food is cooked and is stored heated over time for the consumer to eat straight away.

Examples:-

- Carvery
- Hot pastries to take away
- Precooked meals

Hot holding

The hot holding must hold the temperature at or above 63°C.

If it drops below 63°C it must be sold within 2 hours or destroyed to prevent the bacteria multiplying and causing a food safety risk.

Revision Activity 4

What is the temperature danger zone?