

Segment 9 - Essential Food Hygiene for Fish Friers

Seafish and the National Federation of Fish Friers have distance learning packs that cover fish frying skills and customer service skills. Each of these packs has a section on the principles of food hygiene for fish friers.

This hygiene open learning programme covers similar material in greater detail, and this segment of module briefly summarises the main issues facing fish friers.

AIMS OF THIS SEGMENT

At the end of this segment you will be able to:

List the key temperatures important for maintaining food safety in a fish and chip shop;

Describe the main elements in an effective fish and chip shop cleaning schedule;

Explain the appropriate storage and handling procedures necessary to maintain food safety in a fish and chip shop;

List the main food safety hazards and appropriate measures to control them;

Understand the importance of:

- Oil management and the avoidance of contamination;
- Allergens and other contaminants.

If a topic has been covered in sufficient detail earlier in this module then we will NOT cover it in this Segment.

KEY TEMPERATURES

Storage Temperatures

Uncooked food

Fish	frozen unfrozen	-18°C 0°C to 4°C
Meat Meat with Pastry	e.g. Sausage e.g. pies	0°C to 5°C 0°C to 8°C
Poultry	frozen unfrozen	-18°C 0°C to 4°C

The perfect temperature to store uncooked pies at is 5°C, but don't keep them too long as they will deteriorate even when chilled, and one mouldy pie can destroy your reputation. Storage temperatures below 8°C are recommendations.

Dairy Produce

Butter	Chilled Frozen	0°C to 4°C -18°C
Cheese Milk Margarine		0°C to 4°C

Flour		5°C to 10°C
Mineral Waters		2°C to 3°C
Cooked food on display		Above 63°C

Hot food should first be cooled as quickly as possible but for not longer than 1½ hours, before being replaced in the refrigerator at about 4°C. Any food that is past its sell by date should be disposed of.

Heating and Reheating

Hot pies should be served hot i.e. over 63°C and should first be heated as quickly as possible to 75°C. If your cooked pies have cooled below 63°C then do not reheat them. Cooked meat pies supplied by the manufacturer can be reheated, but their core temperature should rise above 82°C* and then they can be kept at 63°C or above until served.

* mandatory in Scotland, advisory elsewhere in UK.

EFFECTIVE CLEANING

To ensure that all parts of the premises are cleaned at the proper intervals, a written cleaning programme should be produced, setting out the item to be cleaned, how often, using what chemicals and methods. The programme should be displayed in the premises and copies given to the persons responsible for the cleaning.

A named person should be given the responsibility for checking that the programme is adhered to and the cleaning carried out to a satisfactory standard.

The following should be regarded as the minimum frequency for cleaning:

- **Floors** daily and should be in a clean state at the end of the working day.
- **Work surfaces** after each use.
- **Equipment, utensils** after each use.
- **Shelves, cupboards** cleared weekly and cleaned.
- **Machinery** after each day's use and between different products.
- **Walls and ceilings** as often as necessary, some areas may need daily cleaning.
- **Toilets** daily or more frequently if required.
- **Food contact surfaces** and fridge handles should be disinfected on a regular basis to prevent the spread of bacteria, perhaps after each shift.

If cleaning the equipment, utensils, crockery, etc, is to be done by hand, a double sink unit should be used for washing and rinsing, using detergent and a disinfecting agent.

If a disinfectant is not used the temperature of the final rinse water should be above 82°C.

Hot water does kill most bacteria, but it will have little or no effect on spores. Water from the hot tap (around 45°C) is not hot enough to kill most pathogens, but water at 82°C will. Most commercial dishwashers will heat the cleaned dishes to this temperature to kill off pathogens and to help air drying of dishes. 82°C for 2 minutes is a good rule of thumb.

STORAGE

If you store food in your preparation area you must make sure that it is protected from vermin. Flour, therefore, should be stored in a stainless steel or food grade plastic, clearly labelled container and the lid should fit tightly.

You should not store potatoes in your preparation area. They should be stored off the floor, on pallets in a special area. Make sure that potatoes are kept well away from the walls, and, of course, the room must be spotless.

You must not allow refuse to accumulate anywhere inside the shop unless it is in a bin with a tight lid.

Store cleaning chemicals away from food and raw materials to avoid cross contamination or tainting.

Keep raw materials in their original packaging and if it is necessary to transfer them to other containers make sure they are clearly labelled with enough information to allow for full traceability.

Keep any known allergens (e.g. gluten containing flour) separate from anything that might be contaminated by it (e.g. gluten free flour).

Store chilled fish in your fish fridge. If at the end of the day you have fish fillets left over then if these are still of good quality they are perfectly safe if kept chilled until the next day, provided they are used first.

OIL MANAGEMENT AND ALLERGENS

We have included allergens and oil management together. One of the reasons for this is that the frying medium can be the means that an allergen is transferred from one product to another.

Restaurants and Takeaways are required by law to tell customers if any of the main 14 food allergen ingredients are in the food they serve.

The 14 allergens which need to be declared are:

- Celery, Cereals containing gluten, Eggs, Milk;
- Fish, Crustaceans, Molluscs;
- Lupin, Mustard, Nuts, Peanuts, Sesame seeds, Soya and Sulphur dioxide (sometimes known as sulphites).

Eggs may be found in the mayonnaise used to make home-made tartare source, presenting both an allergy risk and possibly a food safety risk if poor temperature control leads to bacterial multiplication.

That's why home-made tartare sauce should be considered a **high care or high risk dish**.

Gluten in flour is another well-known allergen, and one that many fish and chip shops have addressed by having gluten free days and gluten free frying equipment.

As the gluten in standard flour/batter can easily contaminate the oil and anything else fried in it, fresh or uncontaminated oil should be used for gluten free fish and chips.

The gluten contamination cannot be sieved out or otherwise removed so don't cross contaminate your oil.

Some shops are full time gluten free. They will have a dedicated pan that is only used for frying fish in gluten free batter, as well as separate serving tongs, sieves etc. to avoid any cross contamination.

Oil management is important in frying operations. If oil temperatures are too high or frying lasts too long then your fish and chips can have higher levels of a chemical called acrylamide as well as appearing darker brown. Lower levels of acrylamide are more desirable.

Poor oil management and in particular poor sieving/filtration can lead to carbon build up and oil breakdown. This is wasteful of your oil although not a food safety risk.

With good oil management, frying pans rarely need deep cleaning but even in the best run fish and chip shops an occasional deep clean is required. The significant food safety risk from deep cleaning is any residual cleaning chemicals left in the pan that can taint the new oil.

For more information on oil management please read the online guide available from the Seafood Academy website or attend a NFFF Fish Frying training course.

OTHER FOOD SAFETY HAZARDS

Fish and chip shops are prone to all of the usual food safety hazards described in earlier parts of the module, as well as hazards associated with serving hot food to customers. Here are a few.

- Mushy peas, curry sauce and gravy – kept hot in a Bain Marie – but hot enough to avoid bacterial growth and toxin production? All parts of the contents must reach 75°C during cooking and stay above 63°C during hot holding. Don't reuse unsold product the next day.
 - In Scotland these cooked foods must be heated to at least 82°C during cooking.
- Bones in the fish fillet. Hard to believe but they count as a physical contaminant, particularly if they get lodged in someone's throat.
- Green potatoes contain a toxin called Solanine. Store your potatoes away from sunlight and discard any green ones.
- Fish substitution. Strictly speaking this is not a food safety issue, but it is still something that can lead to a prosecution by Trading Standards.

The minimum storage temperature of cooked food products should not fall below 63°C between cooking and sale.