

# Sous Vide

For use within Restaurant Associates.

## Good Hygiene Practice Guide No 20

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Good Hygiene Practice Guide No: 20



HACCP Chart Reference

Cooking/Cooling/Reheating/Vac Packing

## Food Safety Hazards

**Cooking** is a critical step to ensure that any bacteria that may be present in food are killed and the food is safe to eat. Food poisoning micro-organisms are killed through correct time and temperature combination which ensures the centre of the food is sufficiently hot enough for long enough to kill any remaining micro-organisms.

In sous vide cooking the temperatures used are often much lower than those used for general cooking, and the cooking times much longer, which means that food is in the temperature danger zone for extended periods. As a result, there is an increased risk that food poisoning bacteria can **survive** and **multiply**. Therefore, it is essential that the guidance is followed, and cooking is carried out properly when using sous vide.

**Clostridium botulinum**, an anaerobic bacterium, is of particular concern as it prefers a sealed, oxygen free environment to grow, but other bacteria, for example **Listeria**, may also survive if food is not cooked properly. Precise temperature control of the water bath is essential to ensure that time and temperature combinations are sufficient to ensure that any micro-organisms are killed.

## Definitions

**Sous-vide** (/su: 'vi:d/; French for 'under vacuum') - method of cooking in which food is placed in a plastic bag/pouch and cooked in a water bath for longer than usual cooking times (usually 1 to 7 hours, up to 48 or more in some cases) at an accurately regulated temperature.

**Vacuum bag/pack** - plastic bag used to contain food items whilst being cooked.

**Vacuum packing machine** - machines used to remove air and then seal the vacuum bags/pack bags.

**Water bath** - the device used to transfer heat to the foods to be cooked. These can be either purpose-built table-top devices, built-in or a type of portable circulator which can turn suitable containers in to water baths. In theory almost any container can be used, however, thin plastic and metal containers can lose heat quickly. The use of a thicker lined or walled container makes the process more efficient.

**Sous vide needle thermometer and foam sealing tape** - this type of thermometer is suitable for piercing the vacuum bag to monitor the core temperature of food cooked using sous vide. The foam sealing tape ensures that the integrity of the bag is maintained.



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## General Guidance

- Ensure the chef/ head chef managing the sous vide process on the day has completed a **Level 3 CIEH Food safety** course or equivalent as a minimum.
- The sous vide needle thermometer must be calibrated in house on a monthly basis. Laboratory calibration is required annually.
- The accuracy of the water bath LCD temp display is to be checked daily with a dedicated calibrated temperature probe. This probe must only be used for checking the temperature of the water bath and should be labelled "Water Bath ONLY ". Any discrepancy between the displayed temperature and the probe temperature must be noted and adjusted for when using the water bath.
- Clearly display the correction factor that needs to be applied to the temperature display on the water bath e.g. "to achieve 60°C, set the display to 61°C".
- Use a circulating water bath wherever possible. If not available, the temperatures within various parts of the water bath must be checked to establish the lowest temperature of the water bath.
- Always preheat water baths. The pre-heat temperature should be set at 2°C above the target temperature.
- Change the water in the water bath after each use.
- Foods must be vacuum packed in a vacuum packer designated for raw use.
- Any fish to be cooked using sous vide must be delivered on ice or have been frozen (minimum - 20°C for 24 hours) to kill any parasites.
- Thoroughly wash any herbs, vegetables etc as these can be a source of food poisoning bacteria.
- If alcohol is being used in marinades, this should be cooked off as alcohol can produce vapour during cooking.
- Only vac pack bags that are suitable for heat treatment can be used. Confirmation of suitability must be provided from the supplier in form of specification sheet for the bags.
- Bring refrigerated items to ambient temperature before placing them in the water bath.
- All pouches must be fully submerged in the water bath. Do not overcrowd water bath and ensure packs do not overlap. Water must be able to move freely around all packs.
- All whole joints must be no thicker than 5cm when vac-packed and not heavier than 2.0kg



## Cooking Times and Temperatures

- The total time food is required to be in the water bath is the **sum** of:
  - **Time to water bath equilibrium** - time it takes for the water bath to come back to temperature after food has been put in it **PLUS**
  - **Time for product to come to desired core temperature PLUS**
  - **Desired cooking time**, which starts once the desired core temperature has been achieved. Where sous vide is a CCP this must be the relevant time to achieve pasteurisation.
- Where sous vide is a CCP the following temperature/time combinations should be followed:
  - **60°C for 45 minutes**
  - **65°C for 10 minutes**
  - **70°C for 2 minutes**
- Use the sous vide needle thermometer with foam tape to monitor the core temperature for at least one item in every batch in every water bath.
- Standard water bath time/temperature combinations can be established for specific products. The exact method must be documented and followed precisely. The core temperatures must be monitored regularly to verify the method is achieving pasteurisation.
- The method to be used for standard water bath time/temperature combinations must include the details of equipment to be used, the recipe, portion size, temperature of food when it is placed in the water bath and maximum number of portions to be cooked at one time.
- Where Sous Vide is not a CCP and foods, such as beef or lamb, are cooked to rare, a final step to sear meat in a pan/griddle/oven is required.
- Sous vide foods must be served immediately or cooled rapidly for later use following the below guidelines.

## Sous Vide Cooking for later use

- Chill foods rapidly in the vacuum pouch. This can be achieved by using either:
  - a blast chiller or
  - an ice bath/slush ice
- An ice bath/slush ice is the preferable method of cooling as it is more efficient. If using this method it is essential that ice is treated hygienically.
- If using a blast chiller all products must be blast chilled until their temperature reaches 5°C.
- Record the cooling method, times and temperature achieved in the **HACCP Control for Sous Vide** form.
- Keep chilled until ready for service or regeneration (5°C or below, ideally 3°C or less) and do not open pack until needed.

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## Compass UK and Ireland - HACCP Control Form for Sous Vide



Valid time/temperature combinations are: 60°C for 45 minutes or 65°C for 10 minutes or 70°C for 2 minutes

Monitoring checks must be recorded for at least 1 vacuum bag / portion from each batch in each water bath.

Date	Product	Water bath temp	Pre-Searing Y/N	Time put into water bath	Core temp	Time core temp reached	Time out of water bath	Post Searing Y/N	Cooling Y/N	Chef name (print)	Comments (e.g. cooked rare)

Cooling records							
Date	Product	Cooling method	Cooling start time	Cooling end time	Core temp	Chef name (print)	Comments (e.g. intended use)

Corrective Actions			
Date	Product	Problem	Corrective Action

## HACCP Control Form - Guidance

- Where sous vide is used to cook food that is going to be finished and served straight away, the top section must be filled in.
- For sous vide cooking where the product is to be cooled and used at a later time/date, the middle section must also be completed.
- Record any problems and what was done to correct these to ensure that food is safe in the Corrective Actions section.





