Chemical sanitisers – advice for food businesses

Why do I need a sanitiser?

Bacteria that cause illness (Salmonella for example) are commonly found on raw foods such as raw meat. The bacteria on these foods can be transferred to surfaces and equipment that comes into contact with them. Effective cleaning and sanitising in your food business helps protect you and your customers against the spread of bacteria and can stop your customers from getting sick.

Chemical sanitisers are applied to food contact equipment after cleaning to kill bacteria that survive the cleaning process. A surface needs to be thoroughly cleaned before it is sanitised, see Cleaning and sanitising in retail food businesses for more information.

It is a requirement that any equipment that comes into contact with food, such as kitchen benches, knives, chopping boards, eating and drinking utensils, pots, and meat slicers must be in a clean and sanitary condition[1].

To be effective in a food premises, a sanitiser should kill 99.99% to 99.999% of bacteria. There are many different types of sanitisers. The most common chemical sanitisers are chlorine-based products, such as hypochlorite (also known as bleach), and quaternary ammonium products. Other chemicals may be effective if correctly prepared and used. If bleach is used as a chemical sanitiser only plain unscented bleach should be used.

Figure 1. Person cleaning a work bench.

Figure 2. Person washing the floor.

[1] FSANZ Food Standards Code, Standard 3.2.2-Clause 20

Where can I get a chemical sanitiser?

Chemical sanitisers are available from many different commercial suppliers, for example chemical, catering and cleaning suppliers, and are usually quaternary ammonium products. Bleach is widely available in retail supermarkets.

How do I use a sanitiser?

Different brands of sanitiser vary greatly in their instructions for use. The manufacturer's instructions should always be followed. Clear instructions must be provided either on the product label (see example in Figure 3) or a product information sheet. If instructions are not clearly provided with the product, advice should be sought from the supplier or manufacturer and an alternate product sourced if necessary.

Figure 3. Example of a sanitiser label.

The user must always READ THE LABEL (and/or the product information sheet and Safety Data Sheet) and understand the following about the sanitiser:

- Is it safe to use on food contact equipment?
- Is it a ready-to-use product and doesn't require diluting?
- What are the dilution rates if it needs to be diluted?
- What is the 'contact time' (i.e., the amount of time a sanitiser must be in contact with an item for it to work)?
- Is rinsing required?
- What is the shelf life of the concentrated and diluted products?

Some sanitisers can be used as received and are suitable for spray and wipe activities without dilution. These ready-to-use sanitisers are generally unsuitable for equipment that requires immersion (dipping) in a sink as they cannot be diluted.

Food businesses that use bleach as a sanitiser must follow the dilution instructions in Table 1 below. The contact time for bleach varies depending upon the product, concentration, water temperature and other factors (such as pH). The manufacturer's instructions should always be followed in this regard. As a guide, to be effective, bleach requires up to 30 seconds before the food contact equipment is ready for use. Bleach is not required to be rinsed off, as long as the dilution instructions have been followed.

Applying a chemical sanitiser to a food contact surface

- Only use products with clear and informative labels or product information sheets so the instructions can be easily checked
- All surfaces to be sanitised must be clean and rinsed first as sanitisers do not work well in the presence of food residues or other detergents
- Sanitisers should be made to the correct dilution rate (too low or too high is ineffective) and used with the correct water temperature and for the correct contact time, as specified in the manufacturer's instructions
- Because the active chemical loses strength over time, a fresh batch of sanitiser should be made every 24 hours, or as specified in the manufacturer's instructions
- Ensure that sanitising spray bottles are labelled correctly for example the name of the product, when it was made up, et cet era
- All surfaces to be sanitised should be completely covered with the sanitising solution using immersion (dipping) in a sink or using a spray
- Special attention should be given to equipment with surfaces that are difficult to get to, such as stab mixers, blenders, meat slicers and can openers
    - Equipment may need to be dismantled, per manufacturer's instructions, to access the parts that need to be sanitised
    - Equipment that cannot be effectively cleaned and sanitised should not be used in a food business
- After sanitising, utensils and food surfaces should be thoroughly dried:
    - Wet surfaces pick up dirt or other contaminants more easily than dry surfaces.
    - Air drying is preferable otherwise use clean, dry, single-use towels
    - Care should be taken not to re-contaminate sanitised utensils and equipment, e.g. by ensuring they are stored using clean hands and in a clean and sanitary place.

Bleach dilution instructions

How much water?			How much bleach?			
	Household (4% chlorine)		Strong domestic (6% chlorine)		Commercial (10% chlorine)	
Concentration required (ppm)	50 ppm	100ppm	50ppm	100ppm	50ppm	100ppm
Water temp	Warm	Cold	Warm	Cold	Warm	Cold
1 litre	1.25ml	2.5ml	0.85ml	1.7ml	0.5ml	1ml

Table 1. Bleach dilution instructions

To calculate the amount of bleach required for other sized containers, simply multiply the appropriate bleach amount above by the number of litres in any given container.

For example:

How much 4% chlorine bleach do I need to add to a 500ml bottle of cold water?

- If 1 litre of cold water requires 2.5 ml of bleach (at 4% chlorine)
- 500ml = 0.5L
- Therefore 2.5ml x 0.5 = 1.25ml

OR

How much 4% chlorine bleach do I need to add to a 7-litre bucket of cold water?

- If 1 litre of cold water requires 2.5 ml of bleach (at 4% chlorine)
- Therefore 2.5ml x 7 = 17.5ml

More information

- Visit the Food Authority's website at www.foodauthority.nsw.gov.au
  - Factsheet: Cleaning and sanitising in retail food businesses
  - Factsheet: Campylobacter – advice for food businesses
- Email the Helpline at food.contact@dpi.nsw.gov.au
- Phone the Helpline on 1300 552 406.