

## **Sanitizers for Food-Contact Surfaces**

Applying the proper sanitizer to clean food-contact surfaces reduces the number of harmful microorganisms to safe levels. It is important to follow manufacturer's instructions and apply the sanitizer in the correct manner.

Food-contact surfaces must be cleaned, thoroughly rinsed and then sanitized prior to beginning each day's work, after each use, and before changing to a different type of food, such as raw meats to vegetables. Typical food-contact surfaces include knives, food containers, food prep tables, sinks, cutting boards and slicers. Equipment should be sanitized every 4 hours if they have been in constant use. Surfaces too large or impractical to sanitize in the utensil sink or dishwasher should have sanitizer sprayed or wiped on until the surface is wet or "glistening" and allowed to air-dry (do not wipe the sanitizer off). Sanitizer strength is measured in parts per million (ppm).

### **Chlorine-based Sanitizers - provide at 50 to 100 ppm (do not exceed 200 ppm)**

Chlorine-based sanitizers (hypochlorites) are the most commonly used sanitizers. They are effective against all bacteria. They are the least expensive and easiest sanitizers to prepare and test. However, these solutions are unstable and lose chlorine during storage. The killing rate of "bleach water" increases with temperature, but this increased rate is counteracted by increased corrosiveness and vaporization (loss of chlorine). Chlorine-based sanitizers should be 75°F to 120°F. Household bleaches must have EPA registration numbers on the label to be approved.

### **Quaternary Ammonium Compounds – provide at least 200 ppm**

Quaternary ammonium compounds (QAC, quat), in diluted form, are odorless, colorless, and nontoxic. Advantages of QAC's are that they leave a residual antimicrobial film, are stable at high temperatures, and are effective in the presence of organic materials (they are less affected by light soil than are other sanitizers). Although sanitizer is not intended for use as a cleaner, QAC's contain some detergent. Longer contact time is needed with this sanitizer, since it is slow-acting against some common spoilage bacteria.

### **Iodine Compounds – provide at 12.5 to 25 ppm**

Iodine compounds or iodophors are fast-acting and effective against all bacteria. They are relatively nontoxic, non-irritating to skin, and stable. Iodophors are widely used in hand sanitizing solutions. Iodophor solutions may stain porous surfaces and some plastics. Use iodine compounds at 75°F to 120°F.

### **Hot Water / Heat Sanitizing**

Hot-water sanitization is effective over a broad range of microorganisms and penetrates into cracks and crevices.

- Spray (dish machines) uses a final rinse temperature of at least 180°F.
- Immersion in hot water at least 170°F for one minute.

Utensil surface temperature should reach 160°F as measured by an irreversibly registering temperature indicator such as a heat measuring labels or maximize registering thermometers in dishwashing machines.

## **Factors Affecting Sanitizer Effectiveness:**

- Surfaces to be sanitized should be free of cracks, pits, or crevices, which can harbor or protect microorganisms. Surfaces should be "in good repair".
- Surfaces must be thoroughly cleaned and rinsed to remove any soap residue before sanitizing. The presence of organic matter dramatically reduces the effectiveness of sanitizers and may totally inactivate them. An unclean surface cannot be sanitized.
- Generally, the longer time a sanitizer is in contact with the surface, the more effective.
- Sanitized surfaces should air-dry.
- Chemical sanitizers become more corrosive at temperatures greater than 130°F.
- A common misconception regarding chemicals is that "if a little is good, more is better." Using sanitizers above recommended concentrations does not sanitize better; it may corrode equipment and lead to less cleanability. High concentrations can be unsafe and leave an odor or bad taste on surfaces. Follow manufacturer's label instructions. A suitable testing method must be available and used regularly to ensure correct sanitizer levels.