



Q: Why did you say that the FDA Food Code does not permit me to use a bimetallic stem thermometer for food temperature monitoring?

A: Three reasons. First, the food code requires that you will take point specific food temperatures. The minimum safe temperature for cooking hamburger (ground beef or pork) is 155°F for 15 seconds at its CORE. This is a very specific space and it is less than 2" diameter; it's more like 1 or 2mm dia. at best. Bimetal thermometers average the temperature from their tip to a dimple that is found roughly 2.5" up the stem. This is not point specific and you are not reasonably able to measure a "core" temperature because of this. Second, bimetallic stem thermometers are not accurate to $\pm 1^{\circ}\text{C}$ or $\pm 2^{\circ}\text{F}$ which is **required** by the 2009 FDA Food Code section 4-203.11. Cheap bimetal stem thermometers are at best $\pm 3-4^{\circ}\text{F}$ across their stems if properly calibrated. Third, just because the inspector allows you to use them does not mean that you are not liable for your duty of care to verify – accurately, safe food temperatures. Inspectors have discretionary immunity from prosecution; you and I have a *duty of reasonable care* and the food code minimums are just that; *minimum* reasonable safety. Never use bimetal stem thermometers for monitoring your safe food temperatures for cooking, cooling or hot or cold holding.

Q: Is quats effective against Norovirus?

A: Read the label for the product you are using. If you follow the manufacturer's instructions for dilution, and they make the claim for efficacy, the U.S. EPA will say that their marketing claim is accurate. *I'm skeptical.* I never believe marketing claims that I can clean and sanitize at the same time. This is hyperbole that the government lets them get away with. You cannot sanitize that which is unclean. You must first CLEAN a surface before you can sanitize it because bio-burdens inactivate all oxidizing agents. Even a clean surface can be a challenge for quats when viral particles are present. Up until three years ago quats (quaternary ammonium compounds and their detergents) had to be used in a range from 50-200PPM in order to comply with requirements as a food contact surface sanitizer. Anything over that range was considered unreasonably toxic, so EPA limited their concentration to less than 200PPM. But, the big chemcos had a problem. They could not pass the AOAC test method approved by EPA against Norovirus (let alone H1 N1 and H5 N1) with their quat based products at that concentration. The chemcos tweaked their formulations and then got together and petitioned EPA (and lobbied politicians *hard*) to raise the "reasonable non-toxic"

limit of quats to 400PPM. They got their wish and voila – they got the log reduction needed to claim it worked. But, the residue left behind by this high concentration is nasty and requires a potable water rinse. Who rinses away quats with fresh water after applying it to a surface? Further, it must be on the surface for at least 30 seconds. 400PPM quats is hard on the hands, eyes and nose; its bad stuff. The cruise lines do not use this for NoV control, nor does the gaming industry as they all know better. Bleach (sodium hypochlorite) at 200PPM FAC is a better choice, though you need more contact time than usual. Virkon and Virox are two common NoV antimicrobials and neither of them can be aerosolized (sprayed) and neither can quats. That said, my favorite effective NoV anti-viral is non-toxic ECA anolyte with a pH 6.5 and FAC concentration of 150+PPM. It inactivates NoV almost on contact. I have a paper on this that is being published (currently) in a major infection control journal. The PI is Dr. Sagar Goyal, a Professor of Virology at the University of Minnesota.

Q: What was the name of the digital thermometer mentioned in the program?

A: It is a Comark model PDQ 400. You can buy these for right around \$30 each. They are fast response, thin tip, water-proof, have a hold feature and are field calibratable. You can send them through the dish-machine and they will hold the highest temp that they find; great for verifying final rinse temps. Let me know if you have trouble finding a source at that price. They also have a product called Foodpro Plus that combines IR with a folding probe, though these cost over \$200. They also have temperature data loggers that we use to validate meal delivery programs and a HACCP manager product. ComarkUSA.com.

Q: When should I use bleach?

A: I prefer chlorine (bleach) to quats - always. Chlorine is a very effective oxidizer. Google 40 CFR 180.940 to learn more about various chemicals and concentration approved for use as a food contact surface sanitizer. I believe that you must always clean with a surfactant or detergent first and then rinse it away before you try to sanitize. The quats supporters advocate the convenience of one step to clean and sanitize. They say quats has a reduced surface tension as a detergent and it has antimicrobial properties, both of which are technically true, but somewhat misleading. Do they tell their users that quats is inactivated by woven fabric towels? Chicopee exposed this inconvenient truth six years ago . Did you know that hard water also reduces the efficacy of quats? Compliance is not safe harbor and risks are not necessarily reduced just because you use the right dilution ratio per the label instruction.

Q: Why did you say to never spray water at a floor drain?

A: Listeria monocytogenes (LM) is known to find habitat in the biofilms associated with floor drains. It thrives in a wet environment with an elevated pH, which is what you get from the use of floor detergents that have a pH above neutral. Another problem is that LM replicates even down near the freezing point. This is very troubling, and is the reason that we must take great care around drains in or near walk-ins/cold storage lockers. Many outbreak of LM in RTE meats have been traced to bad drain hygiene SOP's in meat packing plant operations and in retail stores. LM has very high mortality as compared to other pathogens,

even higher than Salmonella spp. All microorganisms are heavier than air and most eventually make it to a drain. Treat drains as the filthy, poisonous, dangerous places that they are and avoid aerosolizing their residents.

Q: When should apples and pears be individually wrapped?

A: After they are washed and before you offer them to the public for self-service, in bulk.

Also, apples and pears are RTE foods. You are not allowed bare hand contact with them after washing. So don the gloves and wrap them before you place them into a bulk display where consumers pick the one(s) that they want and serve themselves. If you are serving them individually, no need to wrap – but – no bare hands...

Q: What is the appropriate temperature for hot foods when it reaches the Resident? I need a reference on this as well. I was under the impression that per Title 22 it is based on palatability but had recently come across a note stating 120-140F.

A: All of the temperature requirements in the food code are specific to food temps while the foods are in the custody of the licensed operator.

The moment those foods are served - title transfers and they become the property (custody) of the consumer.

When serving vulnerable persons it is reasonable to expect that while in the care of the facility some supervision of those served foods will be provided.

Because the food code allows you (4) hours to be outside of temp control, I would say that is reasonable to allow foods to be in the TDZ for up to (4) hours after removal from approved temps controls, and after service to the consumer.

But - when 4 hours have elapsed and the foods are still not consumed, it would be prudent to tell the resident that you are throwing the food away - and then throw it away and document the time it was thrown, what was thrown away and by whom.

One more thing - children do not like hot foods. They will not eat hot foods either, but if you allow it to cool to less than 100F, they will eat them.

This is perfectly safe as long as you do not exceed the (4) hr time limit suggested above and you protect foods in the TDZ from cross contamination. This is done with a cover, or saran wrap or something like that.

Q. What is the link for the FDA sites that discusses each states food codes.

A:

<http://www.fda.gov/Food/FoodSafety/RetailFoodProtection/FederalStateCooperativePrograms/ucm122814.htm>