



## Information You Should Know

## MICROWAVE SAFETY

**THE STORY** -- A 26-year old man decided to have a cup of coffee. He took a cup of water and put it in the microwave to heat it up (something that he had done numerous times before). In an effort to bring the water to a boil, he set the timer on the microwave. When the timer shut the oven off, he removed the cup from the oven. As he looked into the cup, he noted that the water was not boiling, but suddenly the water in the cup 'blew up' into his face. The cup remained intact until he threw it out of his hand, but all the water had flown out into his face due to the build up of energy. His whole face is blistered and he has 1st and 2nd degree burns to his face which may leave scarring.

*According to [www.snopes.com](http://www.snopes.com), the phenomenon in this story does have the possibility of happening. However, the details of the story can not be confirmed.*

**HOW DOES THIS HAPPEN?** According to the FDA, "Hot-water eruption can occur if you use a microwave oven to super-heat water in a clean cup. ("Super-heated" means the water is hot beyond boiling temperature, although it shows no signs of boiling.) A slight disturbance or movement may cause the water to violently explode out of the cup. There have been reports of serious skin burns or scalding injuries around people's hands and faces as a result of this phenomenon. Adding materials such as instant coffee or sugar to the water before heating greatly reduces the risk of hot-water eruption. Also, follow the precautions and recommendations found in microwave oven instruction manuals; specifically the heating time".

**REAL LIFE - AN ACTUAL CLAIM** The claimant, age 45, is a resident in a group home. During lunchtime, the claimant was making her lunch and placed a cup of soup in the microwave oven. When the claimant was removing the hot soup, she spilled some on her left hand. There was a staff member present and they put the soup dish down and went over to the sink and washed the hand in cool water. They also applied a spray used for minor burns and the claimant went about having her meal. Over the following days the burn on the hand did not get better. Finally the claimant complained about soreness to the hand and it was noted to have blistered. A staff member took the claimant to the local hospital and she was seen in the Emergency Room. There she was treated for a first degree burn to her left hand. Thankfully, the claimant fully recovered from the injuries. The insured reviewed the incident in their safety committee and educated the staff on the dangers of super-heating and how to minimize these instances. The insured has had no similar incidents since.

## ADDITIONAL RESOURCES

- [www.phys.unsw.edu.au/~jw/superheating.html](http://www.phys.unsw.edu.au/~jw/superheating.html)
- [http://www.who.int/peh-emf/publications/facts/info\\_microwaves/en/](http://www.who.int/peh-emf/publications/facts/info_microwaves/en/)
- [https://www.fsis.usda.gov/shared/PDF/Microwave\\_Ovens\\_and\\_Food\\_Safety.pdf](https://www.fsis.usda.gov/shared/PDF/Microwave_Ovens_and_Food_Safety.pdf)

## THE FOLLOWING CONDITIONS PROMOTE THESE POTENTIALLY DANGEROUS EVENTS:

- Using a container with a very smooth surface, such as an unscratched glass or glazed container, in a microwave.
- Heating liquids for too long.
- Quickly adding a powder, such as instant coffee, or an object to stir it, to a cup of microwave heated liquid.
- Standing with one's face above the container makes injury more likely.

## AVOID SUPER-HEATING

- Follow precautions and recommendations found in the microwave oven instruction manual, specifically guidelines regarding heating time.
- Do not use excessive amounts of time when heating water or liquids in the microwave oven.
- Determine the best time setting to heat the water just to the desired temperature and use that time setting regularly.
- Don't operate a microwave oven if the door doesn't close firmly or is bent, warped, or otherwise damaged.
- If you are heating water in the microwave oven, place something in the cup to diffuse the energy such as a wooden spoon, tea bag, stir stick, or some other microwave safe, non metallic item.

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