

Date: Thu, 15 Jan 1998 10:12:46 -0700  
From: Meredith Brown <racer@lanl.gov>  
Subject: Blue Alert : Near Miss Microwave Fire

Title: BLUE - **Near Miss Fire in Microwave Oven**  
Identifier: INEEL Lessons Learned #97199

**Lessons Learned Statement:** While microwaves are less likely to cause burns than conventional ovens, the potential hazard of burns and fire associated with microwave cooking should always be considered.

**Executive Summary:** Correctly used, microwave ovens offer a convenient and safe method of food preparation, without any detrimental effects on consumer safety or nutrition. Safety guidelines should be followed.

**Discussion of Activities:** An oven fire was narrowly avoided in a company lunchroom. An individual was attempting to microwave a potato (long cooking time) and had placed the potato on more than eight paper plates while in the microwave oven. Several of the plates began to discolor in the oven and the lunchroom was filled with smoke.

**Analysis:** The fire protection engineer suggested that too many paper plates were used, they reached a high temperature more quickly than the potato, and began to burn.

**Recommended Actions:** The following safety guidelines should be posted near microwave cooking stations. Additionally, fire extinguishers should be available where any cooking is done. More guidelines on microwave oven safety are available on the internet at <http://www.dfst.csiro.au/micwavel.htm>.

- 1) Only utensils designed for the purpose should be used in a microwave oven.
- 2) Some additives used in the manufacture of plastics, particularly those which make it pliable, may migrate into food, especially at high temperatures. Only those plastic containers which have been specifically designed for microwave cooking should be used, and they should be discarded when the surface shows any signs of breaking down.
- 3) Container shape may also influence the way food reacts to reheating. Circular or oval containers help prevent the edges of food from burning because energy absorption occurs evenly around the edges. Square containers tend to encourage burning on the edge of the product.
- 4) Because of the long cooking duration of some types of foods, it is a good idea to open the oven periodically and stir, turn, and/or check the contents for even cooking and container integrity.

Originating Organization: Projects  
Contact (Facility Manager): Dave Lord; Phone 6-6675  
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Priority Descriptor: YELLOW/Caution  
Keywords: microwave oven fire

**Follow-up Action:** Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please notify Terry Pierce at (208) 526-4288 (or by electronic mail at [txp@inel.gov](mailto:txp@inel.gov)) or the INEEL Lessons Learned Program Office at (208) 526-1530 (e-mail at [mae@inel.gov](mailto:mae@inel.gov) or [limitl@inel.gov](mailto:limitl@inel.gov)) of any action taken as a result of this report or of any technical inaccuracies you find. Your feedback is important and appreciated.