POLYSTYRENE
PACKAGING
COUNCIL

The Use of Polystyrene to Heat and Re-heat Foods in Microwave Ovens

Both foamed and solid polystyrene containers, as well as food-contact plastics that are designed to contain food in a microwave oven during cooking, do not pose a food safety concern when used or reused in such ovens to heat or re-heat food.

When food is heated or re-heated in a microwave oven, the microwaves interact directly with the food in the container, not the container itself. Therefore, any consideration of microwave heating is a function of the time and temperature conditions involved, and not a result of the use of the microwave in and of itself.

Studies have demonstrated that very small amounts of styrene and ethylbenzene may migrate to food under exaggerated conditions of use from polystyrene containers used as packaging for food. The conditions of use tested include the most extreme of the potential uses of polystyrene "hot fill" packaging, in which the food is placed hot in the container, allowed to cool in the container, and then stored at room temperature for some time. It has been shown that the amount of styrene and ethylbenzene that potentially migrate from the polystyrene container to the food under these exaggerated conditions is in the parts per billion range and poses no health and safety issues or concerns.

In contrast, microwave re-heating of food in a polystyrene container would involve, at most, several minutes of increased contact between the food and the container as compared to "hot fill" conditions of food packaging. These few minutes at temperatures that begin low and increase perhaps to boiling will not significantly increase the potential migration to food from polystyrene containers, compared to tests already conducted at exaggerated conditions.

Therefore, there are no health and safety concerns associated with such use of polystyrene containers.

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