



## SUMMARY OF KEY RESEARCH TO DATE

### Studying the safety of acrylamide in food

Acrylamide in food was discovered in 2002 by a group of Swedish scientists whose research detected trace levels of the compound in some baked and fried foods. Prior to 2002, food was not analyzed for acrylamide because acrylamide was not used as an ingredient in food and not known to be a compound in food.

The findings of the Swedish study prompted the food industry, health authorities and scientists around the world to further study acrylamide in food, as little was known about it. Thanks to the tremendous efforts and cooperation among industry, government and researchers across many national borders, there have been significant advances in understanding the effects of acrylamide and how people's exposure to it can be lowered. The knowledge base about acrylamide is rapidly developing.

The consensus from research conducted to this point is that there is not yet enough evidence to understand precisely how much acrylamide in food is harmful to human health. Research is ongoing.

Following is a summary of key investigations about acrylamide and what has been determined to date:

#### 1. **The World Health Organization (WHO) and the Food and Agriculture Organization of the United Nations (FAO)**

These organizations have been studying the safety of acrylamide in food since 2002, through their Joint Expert Committee on Food Additives (JECFA). The most recent expert evaluation by JECFA was released in February 2005. In its report the committee concluded that:

- There is still considerable uncertainty in determining the precise risk level for human health and that further studies are required.
- Because levels of acrylamide in food vary significantly due to the levels of sugar in the food and the time and temperatures for cooking, it is not possible to issue recommendations on how much of any specific food containing the substance is safe to eat.
- Efforts to reduce the levels of acrylamide in food are important but it is not possible to totally eliminate acrylamide in cooked food because it occurs naturally in so many foods prepared by foodservice, food processors and by consumers in the home. The best approach is to develop codes of practice aimed at lowering amount of acrylamide in food.
- Reducing acrylamide is a complex process. New and innovative techniques and technologies must be developed while ensuring they do not create new microbiological and chemical hazards that risk human health and that the food maintains nutritional quality and consumer acceptance.

- The latest information available on acrylamide reinforces advice on healthy eating – consumers should be encouraged to eat balanced and varied diets which include plenty of fruit and vegetables and to moderate their consumption of fried and fatty foods.

## **2. The HEATOX (Heat-generated Food Toxicants: Identification, Characterization and Risk Minimization) Project**

Funded by the European Union, this multi-year project was completed in November, 2007. Among its key findings, the study found that raw materials and baking conditions have a significant influence on levels of acrylamide and that it is possible to reduce levels as it found in several lab experiments. The study called for a continuation of the research by applying them in real food production by industry.

## **3. Government of Canada**

The safety of acrylamide in food is being investigated under the Canadian government's Chemical Management Plan. This plan is looking at hundreds of substances and conducting thorough assessments of them to determine if exposure to them presents a risk to human health and recommending risk management measures if they are deemed to be. The government is slated to release a draft risk assessment report, under the Chemical Management Plan, on acrylamide's use as an industrial chemical in water purification, oil recovery and soil stabilization. The report, to be released on February 14, 2009, will also address Canadians' exposure to acrylamide as a contaminant in food. This will prompt a two-month period in which manufacturers of food and other interested parties can provide data on their research to help the government make a final decision on the safety of acrylamide in food and publish a final report.

## **4. United States National Toxicology Program**

In May, 2004 the National Toxicology Program's Centre for the Evaluation of Risks to Human Reproduction convened a 14-member panel of experts charged with evaluating whether the current general population exposure to acrylamide poses a risk to human reproduction and development. After reviewing 125 research papers, the panel concluded there is not sufficient data to reach the same conclusion in humans that it did for rats and mice – that it is harmful. The National Toxicology Program, which is affiliated with the US Food and Drug Administration, has been further studying the safety of acrylamide in food and will release a report in March, 2009 that is considered to be the most comprehensive toxicological study on acrylamide undertaken to date.

Governments, industry and academia are committed to further research to be certain that any risk to human health is minimized.