

Acrylamide Guidance: Steps food business operators need to take to reduce the amount of acrylamide in food



What is acrylamide?

- Acrylamide is a chemical substance formed when sugar in starchy foods are cooked at high temperatures (above 120°C). It can be formed when foods are **baked, fried, grilled, toasted or roasted**. It is a natural by-product of the cooking process and gives food a desirable colour, smell and taste but is **harmful in excess**.

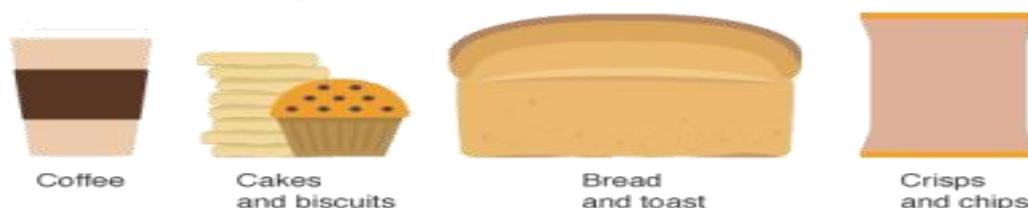
What are the potential health effects of acrylamide?

- Scientific tests show that too much acrylamide in the diet has the potential to cause cancer in humans, with young children most at risk.

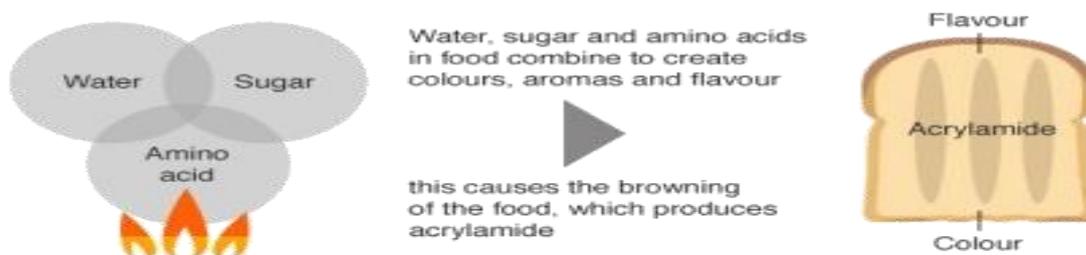
Where is it found?

- It is found in a wide range of foods including: roasted potatoes and root vegetables, chips, crisps, toast, cakes, biscuits, cereals, coffee.

What foods can acrylamide be found in?



How does it form when food is cooked?



Source: Food Standards Agency

BBC

- What does the new law (Regulation (EU) No. 2017/2158) say food businesses operators must do?**
- From May 2018, food businesses must **control** how much acrylamide is in **specific foods** they produce all along the production process 'from farm to fork' - requiring all food businesses to do the following:
- The law **lists specific foods** that require action to be taken to reduce acrylamide:
 - french fries, other cut (deep fried) products and sliced potato crisps from fresh potatoes**
 - potato crisps, snacks, crackers, other potato products from potato dough**
 - bread** (Includes pizza, toast and toasted products)

- **breakfast cereals (excluding porridge)**
- **fine bakery wares: cookies, biscuits, rusks, cereal bars, scones, cornets, wafers, crumpets and gingerbread, as well as crackers, crisp breads and bread substitutes**
- **coffee: (i) roast coffee; (ii) instant (soluble) coffee and coffee substitutes**
- **baby food and processed cereal-based food intended for infants and young children**

- Sets out specific **reduction measures (controls) to reduce acrylamide** in the above foods dependent on the nature and size of the business with the larger ones having to do more than smaller ones. The three groups are:
 - A) Large, national manufacturers**
 - B) Large, non- local group/franchise caterers with a central control, supply chain and standard menus, such as restaurant chains**
 - C) Independent, local food businesses serving direct to the final customer or to local outlets e.g. hotels, restaurants, cafes, takeaways and bakeries.**

- Requires **representative sampling and analysis** of acrylamide in the listed foods for businesses in groups A and B.

- Requires different types and detail of **documentation** dependent on which group the business is in. Whereas Groups A & B require detailed '**records**' of sampling and procedures, Group C can show '**evidence**' in a simpler format that they are following suitable **controls**.

What should this look in practice?

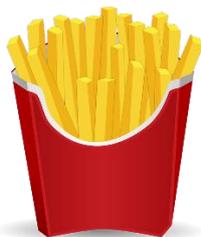
In general

- All businesses will need to consider acrylamide in their written **Food Safety Management System** as a Chemical Hazard (potential to cause harm), put in place appropriate **controls** to reduce it to a safer level, **monitor** this effectively and take **corrective action** when something goes wrong. The degree of documentation depends on the size and nature of the food operation.

- Management must set up:
 - a) **safe operating procedures (SOPs), instructions or guidance** to include **following manufacturer's instructions** for bought- in, part- baked/frozen products to finish cooking on site e.g. bread, croissants, biscuits and
 - b) **maintain equipment** (especially thermostat controls) in clean and good working order and

- c) **train staff** of the dangers and their role in applying the controls.

Examples of the types of controls required when making some of the listed foods



- **Chips**

Ordering & Storage: Use potato varieties with less sugar and store them in a dark, dry, cool place that must never be below 6°C.

Preparation: soak prepared/cut potatoes in cold water but not in the fridge. Then rinse, dry and blanch before final cooking.

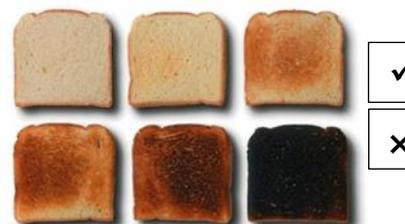
Cooking: in oils that fry quickly at lower temperatures eg rapeseed, never exceed 175°C (or 220°C for oven chips), clean oil regularly and monitor using SOPs, instructions and/or colour charts. Aim for a golden colour and use computerised fryers with preset time/temperatures settings where possible. Discard dark products.

- **Bread, Toast Toasted Sandwiches and Bakery Goods**

Ordering: Inform suppliers not to provide overcooked products.

Preparation: Use ingredients and methods that allow for longer yeast fermentation and proving times

Baking: bake at lower temperatures for longer and maintain maximum moisture in the product. Use SOPs, instructions and colour charts to monitor, aiming for a golden colour but allowing for darker finish where darker ingredients are used e.g. wholemeal flour, brown sugar. Reject/discard overcooked foods.



- **Coffee**

Official guidance is less clear for coffee; colour and temperature is less of an indicator and depends on blend and roast. When **ordering/blending** consider that Arabica beans have less acrylamide than Robusta beans and care when roasting or ordering to aim for levels as low as possible below the set standard of 400 µg/kg (see Fooddrink Europe Toolbox below for more information).

Where can I find more information and advice?

- **Food Standards Agency** <https://www.food.gov.uk/business-guidance/acrylamide-legislation?navref=related>
- **Fooddrink Europe: pamphlets in different languages and Toolbox for manufacturers and caterers**

<http://www.fooddrinkeurope.eu/publication/Download-FoodDrinkEurope-Acrylamide-Pamphlets-in-23-languages/>

<http://www.fooddrinkeurope.eu/publication/fooddrinkeurope-updates-industry-wide-acrylamide-toolbox/>

- **UKHospitality Interim Acrylamide Guidance for Catering and Food Service: practical advice**

http://www.bha.org.uk/bha_news/ukhospitality-provides-interim-guidance-industry-new-acrylamide-legislation-brought-force-today/

- **Cooking Chips and colour guides:** <http://goodfries.eu/en/home>
- **East Cambridgeshire District Council Commercial Team**
foodandsafety@eastcamb.gov.uk or ring 01353 665555

Thank you

East Cambridgeshire District Council would like to thank colleagues in the Brighton & Hove Council Food Safety Team in the preparation of this guidance.