



## Infrared Heat For Food

# Meat

## Appetisingly Brown

Hams are browned and hamburgers are roasted so that they taste better to us. Chicken and other poultry meat is browned on the outside before being used in sandwiches.

Infrared heat finds particular application in modern meat preparation. Medium wave carbon infrared emitters heat meat surfaces in a targeted fashion. Sandwich meat, hamburgers and hams are made to look even more appetising without additional fat.



Hamburger meat is browned



Infrared is used to brown chicken meat for sandwiches



Infrared heat makes cooked ham look appetising

# Desserts | Cakes | Biscuits

## Looking Sweet

People love desserts, biscuits and cakes but they must still look good enough to eat. Infrared heat ensures that almonds are warmed before being flaked, that the sugar on crème brûlée or pavlova is browned and that cheese cake has an attractive colour.

Infrared emitters from Heraeus are modern heat sources. Without any pre-heating and with very efficient energy input, heat is applied precisely where it is required.



Cheese cake receives a browned surface



Baking biscuits



Heating almonds before crushing



Melting of sugar on crème brûlée

# Chocolate

## Fine Quality

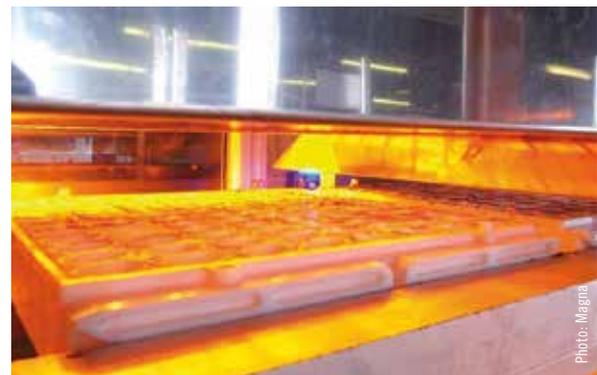


Filling chocolate with caramel

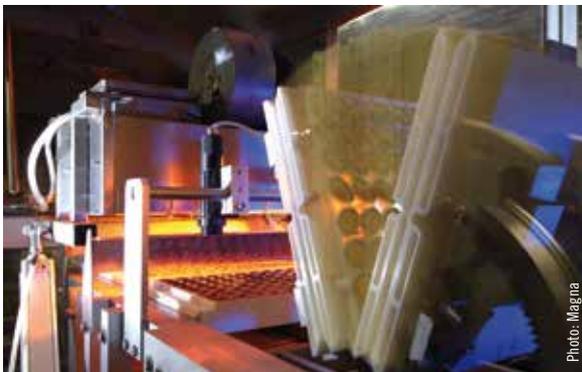
Filled chocolates need infrared heat – and a lot of it. Chocolate halves are heated before they are filled and then once more to seal them. The edges of two chocolate half shells are slightly melted so that they can be firmly joined together. Also the plastic moulds can be preheated prior to filling or warmed to allow cleaning before the chocolate-making process begins again.

Each of these heating stages must be carried out at a precise temperature for a precise time.

Infrared emitters from Heraeus have very fast response times and so can be very closely controlled. And that is very important for the quality of fine chocolates.



Heating moulds before filling



Fusing chocolate halves together



Heating moulds before cleaning

# Bread

## It's not only the crust that counts

Yeast allows dough to rise and become aerated – if the baker has done everything right. However, if yeast grows well, mildew also thrives, and nobody wants to find this in bread. Consequently, during the baking of bread, rolls and other baked products, the dough must be able to ferment without the propagation of unwanted mildew or other microbes.

Baking trays, and all other baking equipment, must at all times be hygienically faultless. Disinfection and the elimination of fungal growth on surfaces and equipment is therefore a priority.

Newly baked bread also has a longer shelf-life without the addition of conservation materials when it is briefly disinfected once again before packing.

Infrared radiation transfers large amounts of energy in a short time. Disinfection with infrared is a thermal disinfection, using controlled heat.

Carbon infrared kills spores reliably and practically. And there is no problem with thicker spore layers, porous surfaces or dust particles.



Disinfection of baking trays



Disinfecting bread before it passes through the bread cutter



Disinfecting bread before packing



# Ready Meals

## You eat with your eyes



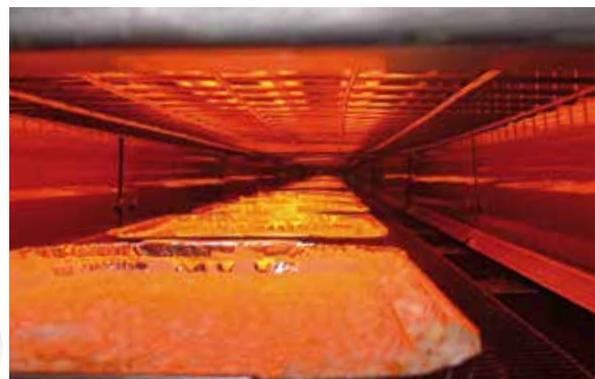
Compact infrared system dovetail into every factory

Infrared heat makes ready meals more attractive. Carbon infrared emitters brown the toppings or other garnishing of ready meals, without causing any further unwanted cooking of the meal itself. Compared with conventional heating sources, carbon emitters are more efficient, saving energy and minimising maintenance costs.

Heraeus infrared systems are so compact that the complete manufacturing plant design can be improved and valuable production space reclaimed.



Browning cheese toppings on ready meals



Browning mashed potato

# Technology

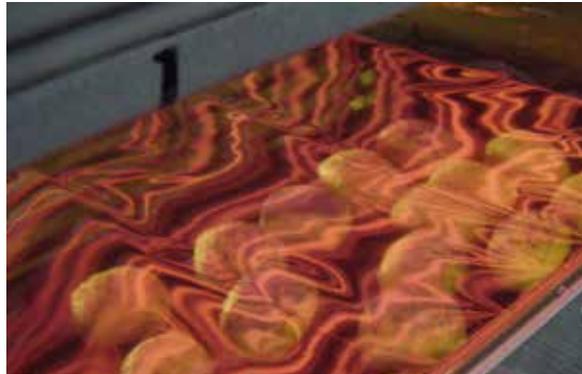
## Clean and Reliable

For the food sector, infrared modules are manufactured in stainless steel and fitted with a wire mesh to afford mechanical protection. An additional foil frame can, if requested, protect the food from any falling particles.

Infrared emitters from Heraeus are very responsive and can be switched on and off inside 1-2 seconds.

All infrared systems can be controlled so that any unexpected or unwanted conveyor belt stoppage will have minimal effect on the equipment or product. Emitter failure detection is also incorporated within the control system.

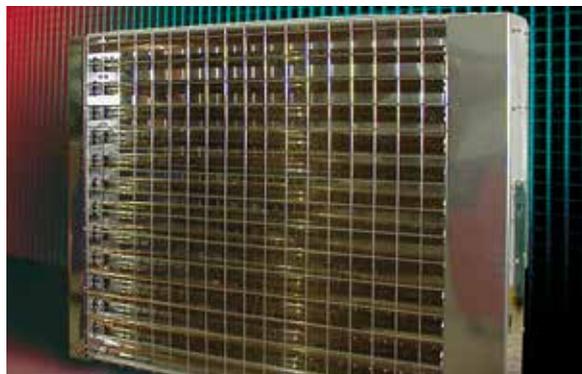
The parameters required for any system can be established in one of our test centres or by using hire modules on site. The investigations are carried out by experienced engineers and technicians, who can assist in the selection of the right emitters and systems to suit a particular product and process.



Foil frame



Stainless steel infrared module



Wire mesh

## Other Applications

Infrared heat provides a particularly efficient and reliable solution for many heating processes in the food sector.

Apart from the applications described here, there are many more:

- Baking of bread and cakes
- Roasting without fat
- Cooking sausages
- Heating wafers prior to embossing
- Setting coatings on chicken strips
- Browning waffles
- "Relaxing" shellfish
- Melba toast
- Blackening vegetables
- Browning of hams
- Popping corn for cereals
- Branding of meat and cheese

**Could infrared optimise your heating process?  
Have a word with us!**

**Thank you very much for any information and photo material!**

- Cadbury Trebor Bassett Ltd./UK
- Geest/UK
- Heinz/UK
- Infrabaker International/NL
- Magna Specialty Confectioners /UK
- Midor/Switzerland
- Oscar Mayer Ltd./UK
- Protech Food Systems/UK
- Rego Herlitzius GmbH/Germany
- Weissttechnik/Belgium



The Infrared Process Technology division of Heraeus Noblelight (business segment specialty lighting sources) develops and manufactures infrared emitters and systems for industrial heating processes. For over 50 years we have focused on their specific application requirements. With a wealth of experience encompassing more than 3000 different heating processes, we can match our emitters precisely to meet your needs in terms of spectrum, power, length and shape.

Make use of the intelligence of infrared technology. In contrast to conventional thermal processes, infrared transmits large amounts of energy in a short time. This heat is used exactly where it is required and only for as long as it is required for a particular process. This offers energy savings of up to 50%.

Profit from the acknowledged Heraeus quality – the proven twin tube design with a unique length of up to 6.5 meters – contoured emitters, which are shaped to match the geometry of your work piece – the new QRC<sup>®</sup> emitter, with its nano reflector for stable heating processes under aggressive ambient conditions. Convince yourself personally of the efficiency of infrared emitters for your process in our Application Centers.

Make use of our expertise and experience to optimize your production process and realize real competitive advantage.

Germany

**Heraeus Noblelight GmbH**

Infrared Process Technology  
Reinhard-Heraeus-Ring 7  
63801 Kleinostheim

Phone +49 (6181) 35-8545  
Fax +49 (6181) 35-168410  
hng-infrared@heraeus.com  
www.heraeus-noblelight.com/infrared

USA

**Heraeus Noblelight America LLC**

1520C Broadmoor Blvd.  
Buford, GA 30518

Phone +1 (678) 835-5764  
Fax +1 (678) 835-5765  
info.hna.ip@heraeus.com  
www.heraeus-thermal-solutions.com

Great Britain

**Heraeus Noblelight Ltd.**

Clayhill Industrial Estate  
Neston, Cheshire  
CH64 3UZ

Phone +44 (151) 353 2710  
Fax +44 (151) 353 2719  
ian.bartley@heraeus.com  
www.heraeus-infraredsolutions.co.uk

China

**Heraeus Noblelight (Shenyang) Ltd.**

2F, 5th Building 5  
No. 406, Guilin Rd, Xuhui District  
200233 Shanghai

Phone +86 (21) 3357 5555  
Fax +86 (21) 3357 5333  
info.hns@heraeus.com  
www.heraeus-noblelight.cn



Reg. No. 39254