



Ultrason[®] for household and catering

Stylish, durable and safe

 **BASF**

We create chemistry



ULTRASON[®]

KITCHENS HAVE BECOME DESIGN OBJECTS – AND THEY ARE OFTEN THE MOST-USED ROOM IN THE HOUSE.

ULTRASON®: THE POLYARYLETHERSULFONE (PSU, PESU, PPSU) PORTFOLIO BY BASF

HIGH TEMPERATURE RESISTANCE

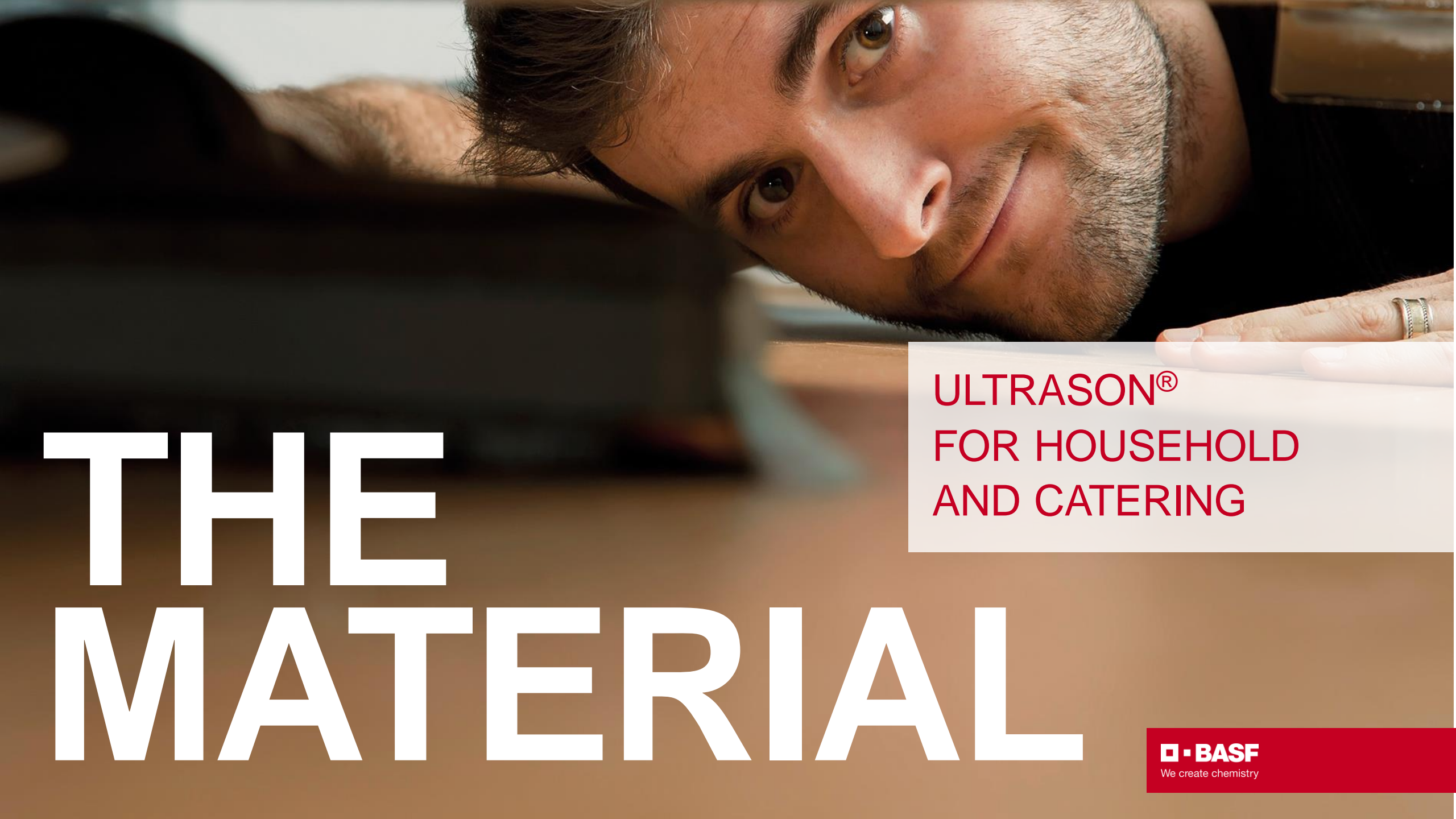
EXCELLENT WATER & STEAM RESISTANCE

FOOD-CONTACT APPROVED

ULTRASON®

The central cube is surrounded by 15 images of products: a washing machine, a yellow tray, a red bottle, a white plate, a black mug, a blue lid, a frying pan, a slow cooker, a juicer, a coffee machine, a microwave, a pair of glasses, and a stovetop kettle.

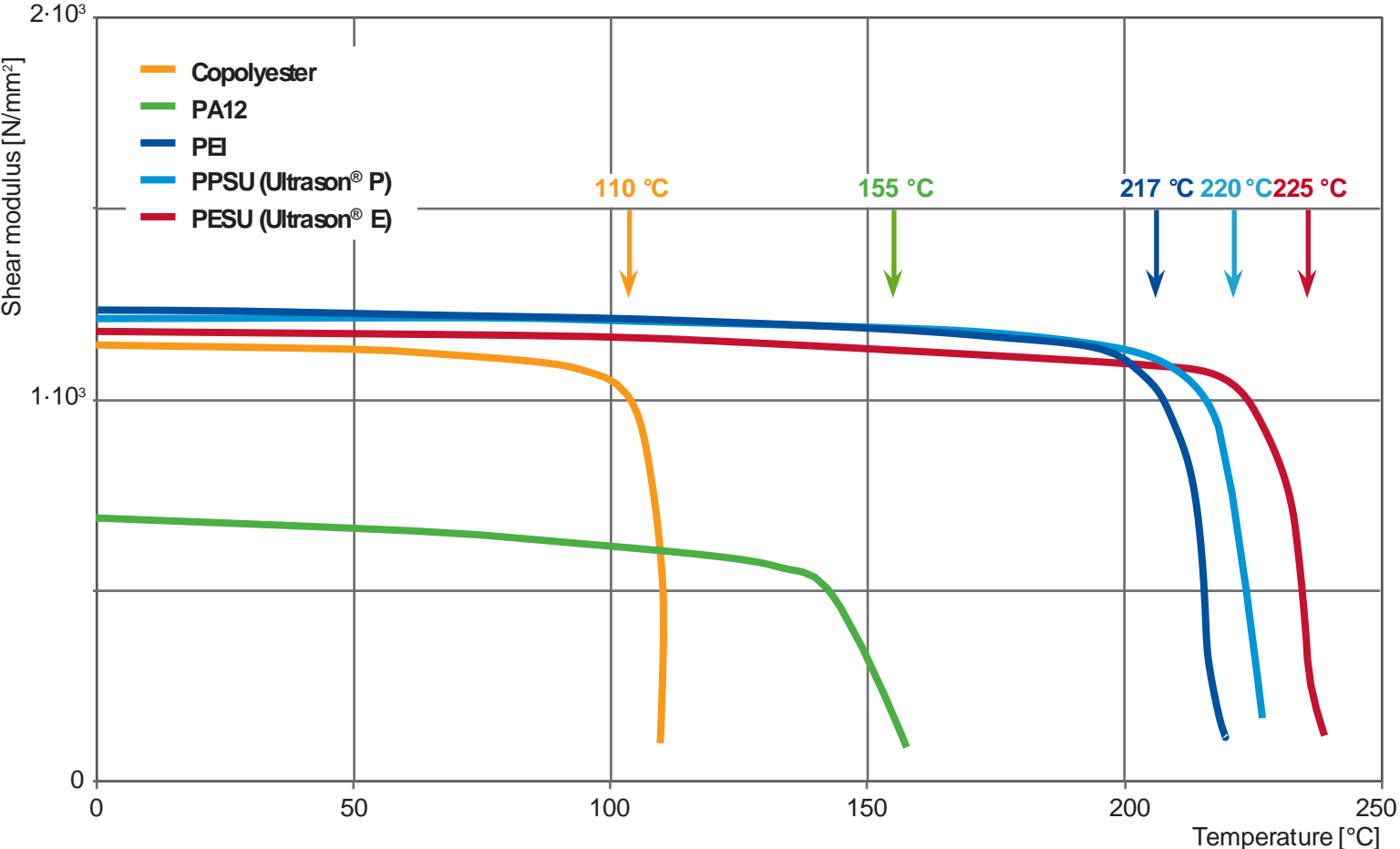
**FOR HOUSEHOLD
AND CATERING**



THE MATERIAL

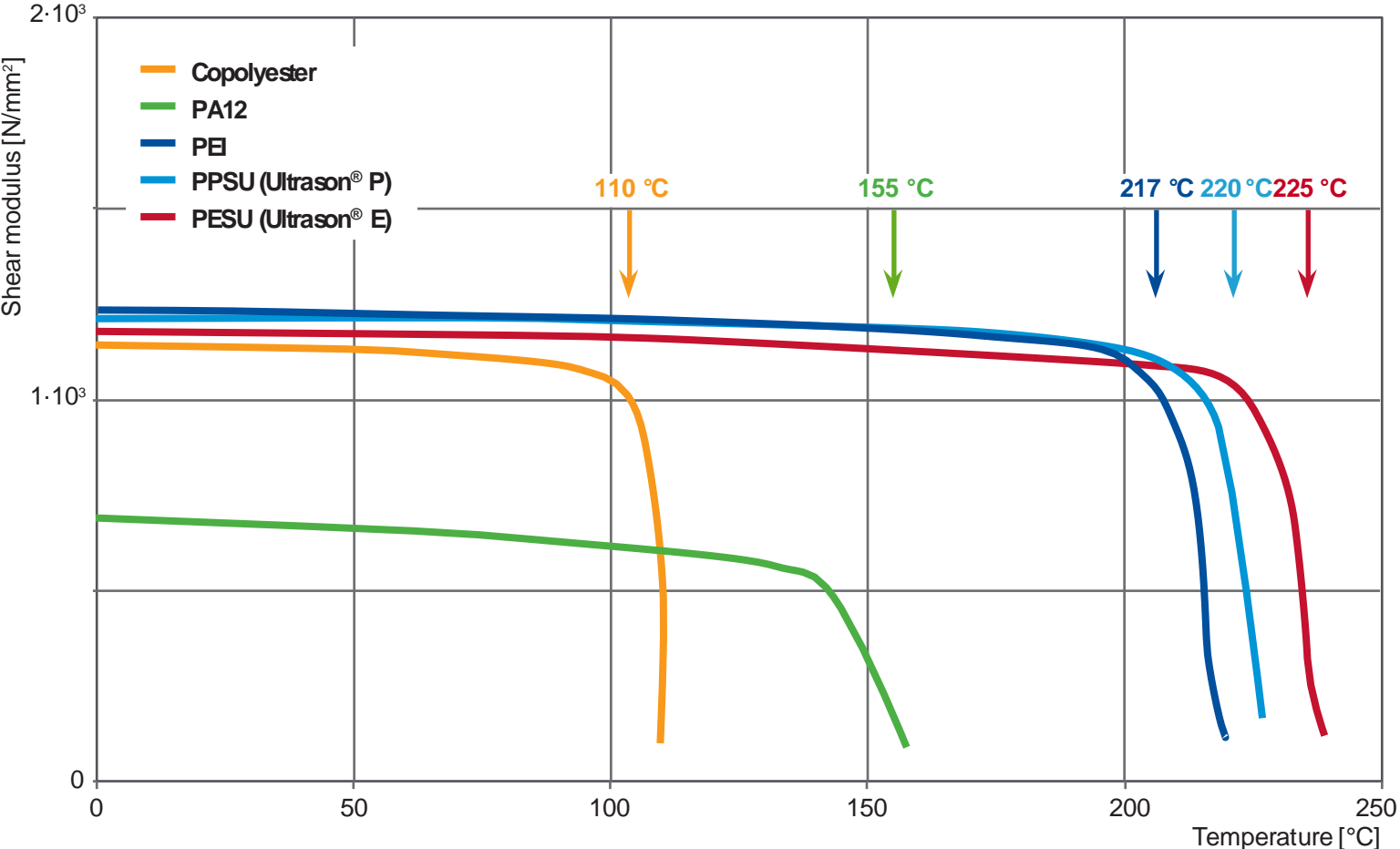
ULTRASON®
FOR HOUSEHOLD
AND CATERING

ULTRASON®'S ADVANTAGE OVER OTHER TRANSPARENT POLYMERS: Properties unaffected at high temperatures



Ultrason®
High heat-resistant and safe material for food contact applications.

ULTRASON®'S ADVANTAGE OVER OTHER TRANSPARENT POLYMERS: Properties unaffected at high temperatures



Ultrason®
High heat-resistant and safe material for food contact applications.



KEY FEATURES

ULTRASON®

Key features

- **Temperature-independent properties**
- **Temperature resistance up to 180 °C** (short-term up to 220 °C)
- **Good mechanical properties** (high mechanical strength and dimensional stability; tough and impact-resistant; high crack resistance)
- **Excellent hydrolysis resistance**
- **Exceptional chemical resistance**
- **Resistance to superheated steam**
- **Stain resistant**
- **Break-resistant**
- **Transparent and colorable**
- **Suitable for food contact (FDA-US and FC-Europe)**



Photo by kind permission of De'Longhi.

ULTRASON®

Key features

- **Temperature-independent properties**
- **Temperature resistance up to 180 °C** (short-term up to 220 °C)
- **Good mechanical properties** (high mechanical strength and dimensional stability; tough and impact-resistant; high crack resistance)
- **Excellent hydrolysis resistance**
- **Exceptional chemical resistance**
- **Resistance to superheated steam**
- **Stain resistant**
- **Break-resistant**
- **Transparent and colorable**
- **Suitable for food contact (FDA-US and FC-Europe)**



Photo by kind permission of De'Longhi.

ULTRASON®

Core Ultrason® grades for household and catering applications

Product	Description
Ultrason® E 2010	Standard injection-molding grade of medium viscosity
Ultrason® E 2010 MR	Injection-molding grade of medium viscosity with improved mold release for complex parts
Ultrason® E 3010	Higher viscosity injection-molding and extrusion grade with improved toughness and chemical resistance (stress crack resistance)
Ultrason® E 3010 MR	Higher viscosity injection-molding grade with improved toughness and chemical resistance, improved mold release for complex parts
Ultrason® P 2010	Medium viscosity injection-molding and extrusion grade with superior toughness and chemical resistance, resistant to superheated steam
Ultrason® P 3010	Higher viscosity injection-molding and extrusion grade with superior toughness and chemical resistance (stress crack resistance), resistant to superheated steam



HOUSE HOLD

HOUSEHOLD
APPLIANCES AND
CATERING EQUIPMENT
HAVE TO BE STYLISH,
DURABLE AND SAFE.

PERFECT COMBINATION OF HEAT AND CHEMICAL RESISTANCE

Fat-free fryer

Key properties:

- Temperature resistance for long term usage up to 180°C (short-term up to 220°C)
- Good mechanical properties, tough and impact-resistant
- Transparent and colorable
- Exceptional chemical resistance, i.e. to oils, acids, bases
- Resistance to superheated steam and multiple sterilization process
- Suitable for food contact, FDA-US and FC-Europe approved

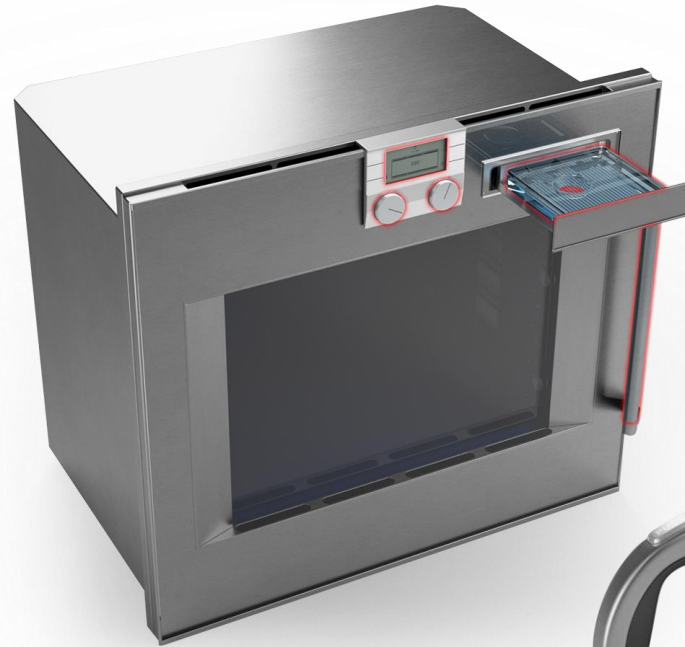


IDEAL FOR HIGH TEMPERATURES

Thermomix, oven, and electric kettle

Key properties:

- High temperature resistance
- Good mechanical properties
- Transparent and colorable
- Suitable for food contact



GOOD OPTICAL PROPERTIES FOR STYLISH APPLIANCES

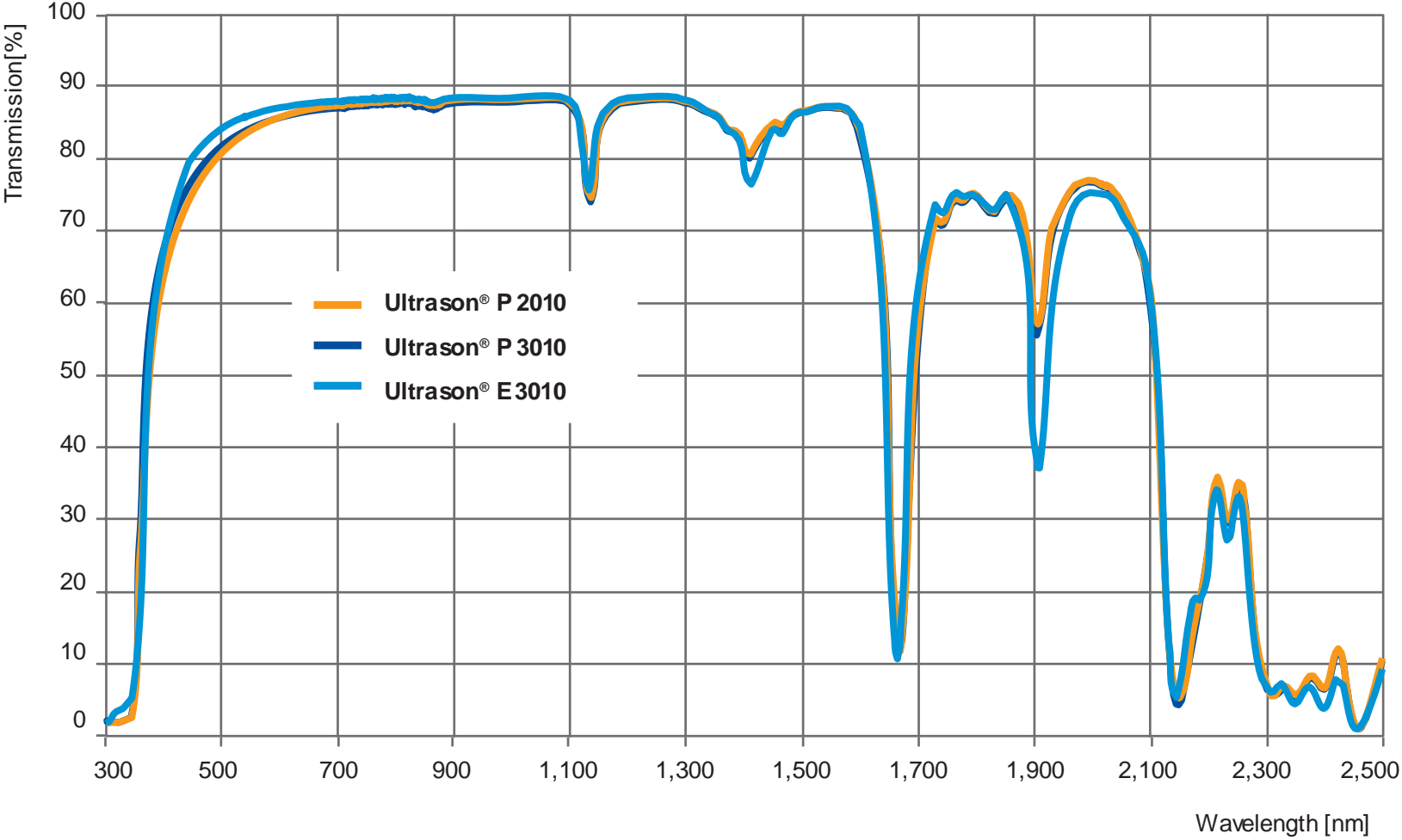
Washing machine, refrigerator, juicer

Key properties:

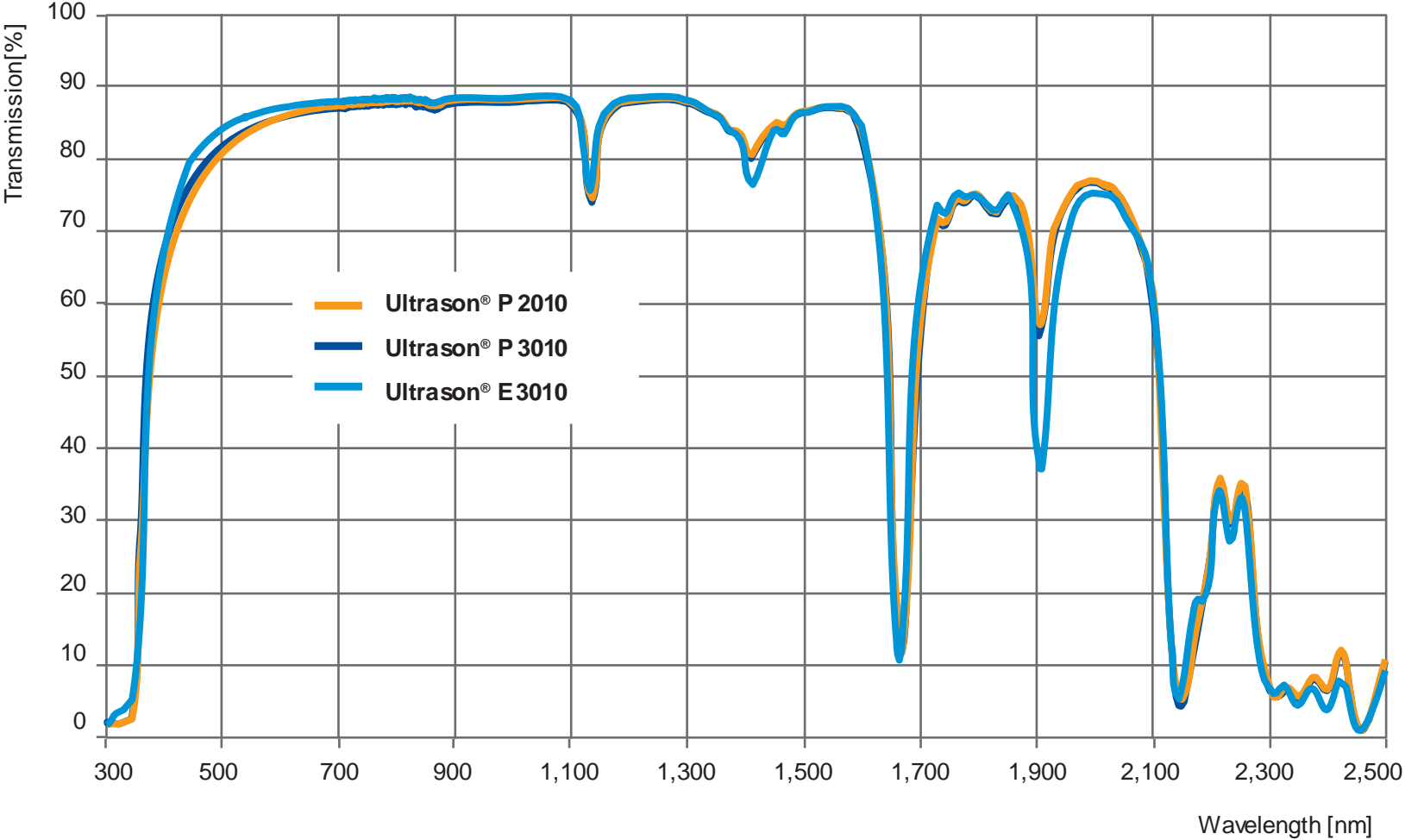
- High temperature resistance
- Good mechanical properties
- Transparent and colorable
- Exceptional chemical resistance
- Suitable for food contact



Transmission rates of selected Ultrason[®] grades



Transmission rates of selected Ultrason[®] grades



SAFETY FIRST

Drinking bottle

Key properties:

- Food contact compliance (FDA-US and FC-Europe)
- Good transparency
- Superheated steam sterilization
- Dishwasher and microwave proof
- Lightweight and shock-proof
- No discoloration by liquid contact



SUSTAINABLE: 20 TO 100 WASH CYCLES IN CATERING

High heat pan and lid

Key properties:

- Suitable from cold to hot temperature up to 180°C
- Ideal for use in microwave ovens, steam serving tables and chafing dishes
- Precisely designed to Gastronom GN specifications
- Non-stick smooth interior surface increases yields and promotes easy cleaning
- Commercial dishwasher safe



UNIQUE: PROVEN MICROWAVE RESISTANCE

Microwave dishes

Key properties:

- Maintains stiffness at high temperatures
- Lightweight and toughness/shock-proof
- Odorless, no taste transfer
- Resistant to fats, oils and detergents
- Transparent and colorable
- Food contact compliance (FDA-US; FC-Europe)



ULTRASON® FOR COIL COATING AND SPRAY COATING

Non-stick pan

Key properties:

- Steam, fat and oil resistant
- High heat resistance
- No discoloration by food contact
- Food contact compliance (FDA-US; FC-Europe)
- Good adhesion to metal



STYLISH, LIGHTWEIGHT AND REUSABLE TABLEWARE

Food dishes

Key properties:

- Maintains stiffness at high temperatures
- Lightweight and toughness/shock-proof
- Odorless, tasteless
- Resistant to fats, oils and detergents
- Transparent and colorable
- Food contact compliance (FDA-US; FC-Europe)

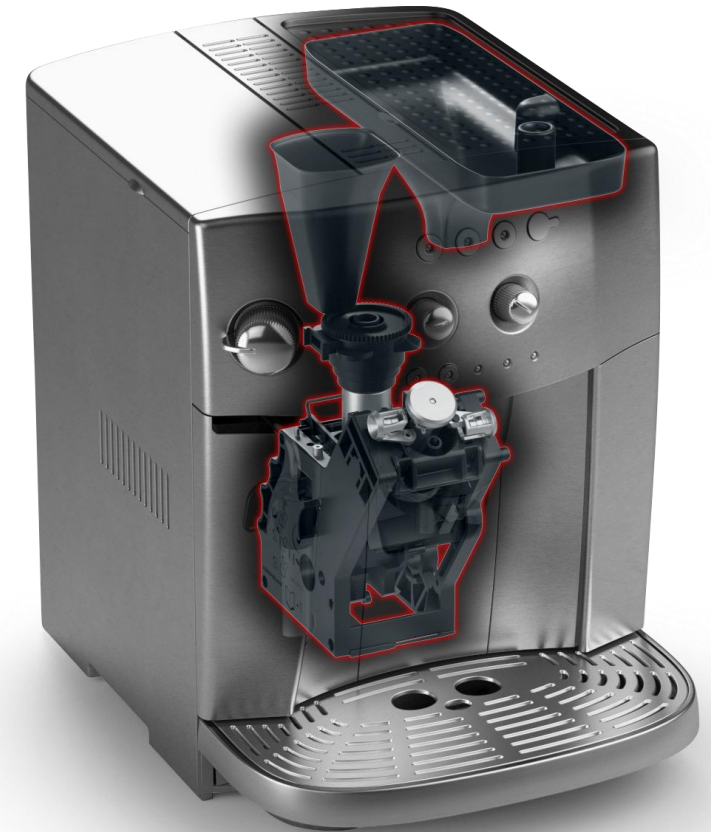


FOR HIGH REQUIREMENTS AND TASTY RESULTS

Coffee machine

Key properties:

- Temperature resistance for long term usage up to 180°C (short-term up to 220°C)
- Good mechanical properties, tough and impact-resistant
- Transparent and colorable
- Exceptional chemical resistance i.e. to oils, acids, bases
- Resistance to superheated steam and multiple sterilization process
- Suitable for food contact, FDA-US and FC-Europe approved

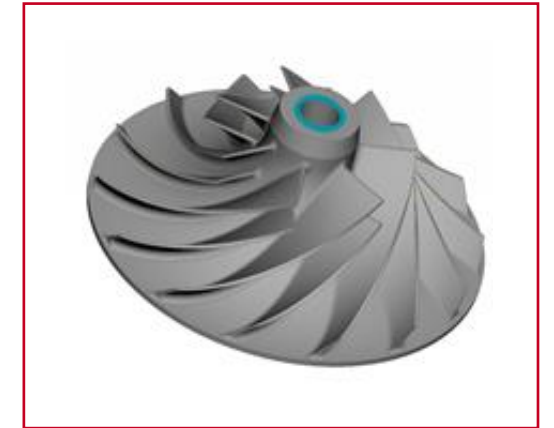
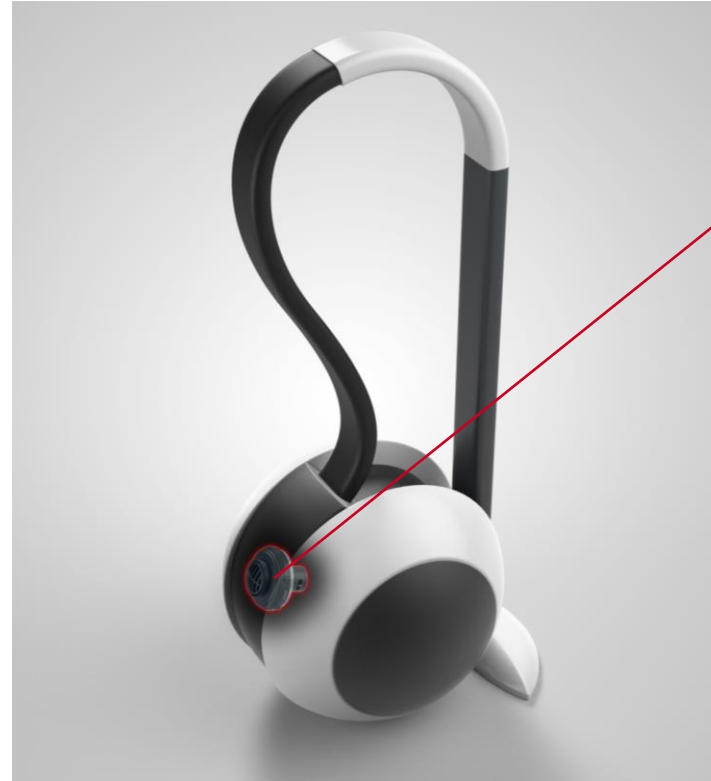


HIGH MECHANICAL STRENGTH LEADS TO LONG-TERM OPERATION

Vaccuum cleaner: impeller

Key properties:

- Temperature resistance
- Good mechanical properties
- Transparent and colorable
- Exceptional chemical resistance





**HARD
FACTS**

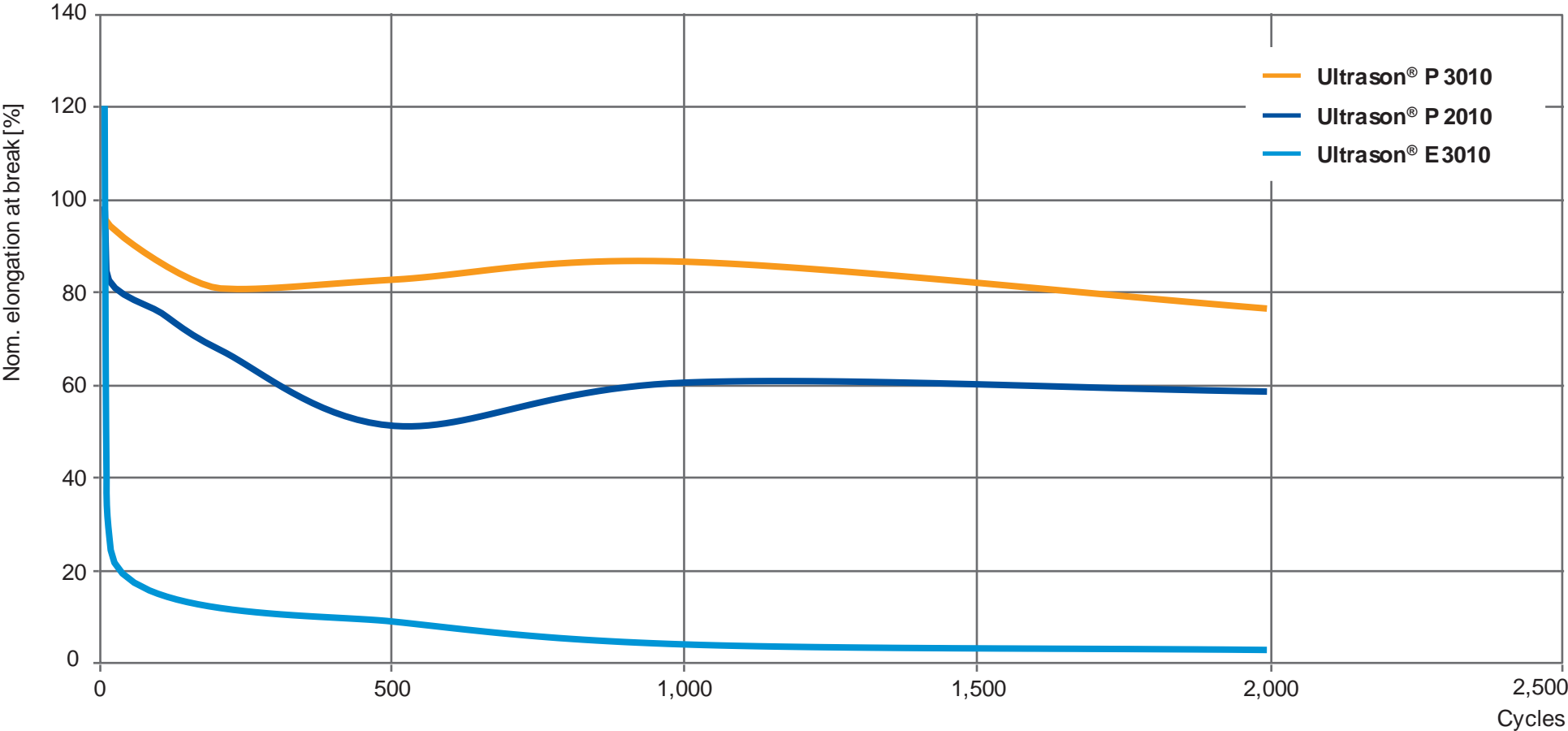
**BEST
VALUES**

Comparison of transparent materials for household and catering applications

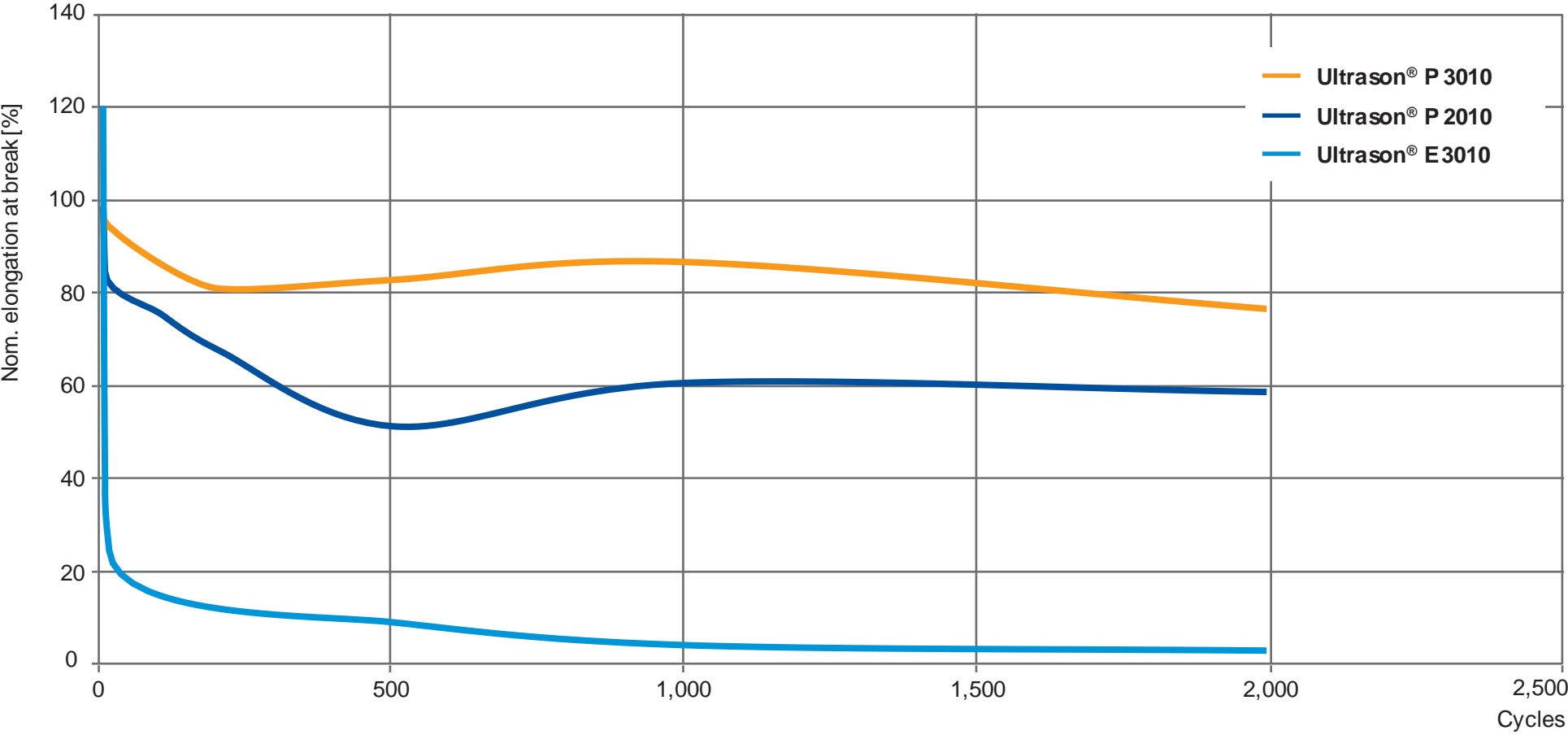
Property/Material	PP	Co-polyester	PET	PC	Amorphous PA	PEI	PESU Ultrason® E	PPSU Ultrason® P
Optical quality, aesthetic appearance	– milky	++	++	++	++	– yellow	+ Slight honey tint	+ Slight honey tint
Dishwasher and detergent resistance	+/-	+/-	+/-	–	+	+	+	+
Microwave resistance	–	–	–	–	+	–	++	++
Hot steam resistance (sterilization)	–	–	–	–	–	+	++	++
Mechanical properties at high temperatures	–	–	–	+	+	++	++	++

– : poor | +/- : acceptable | + : good | ++ : excellent

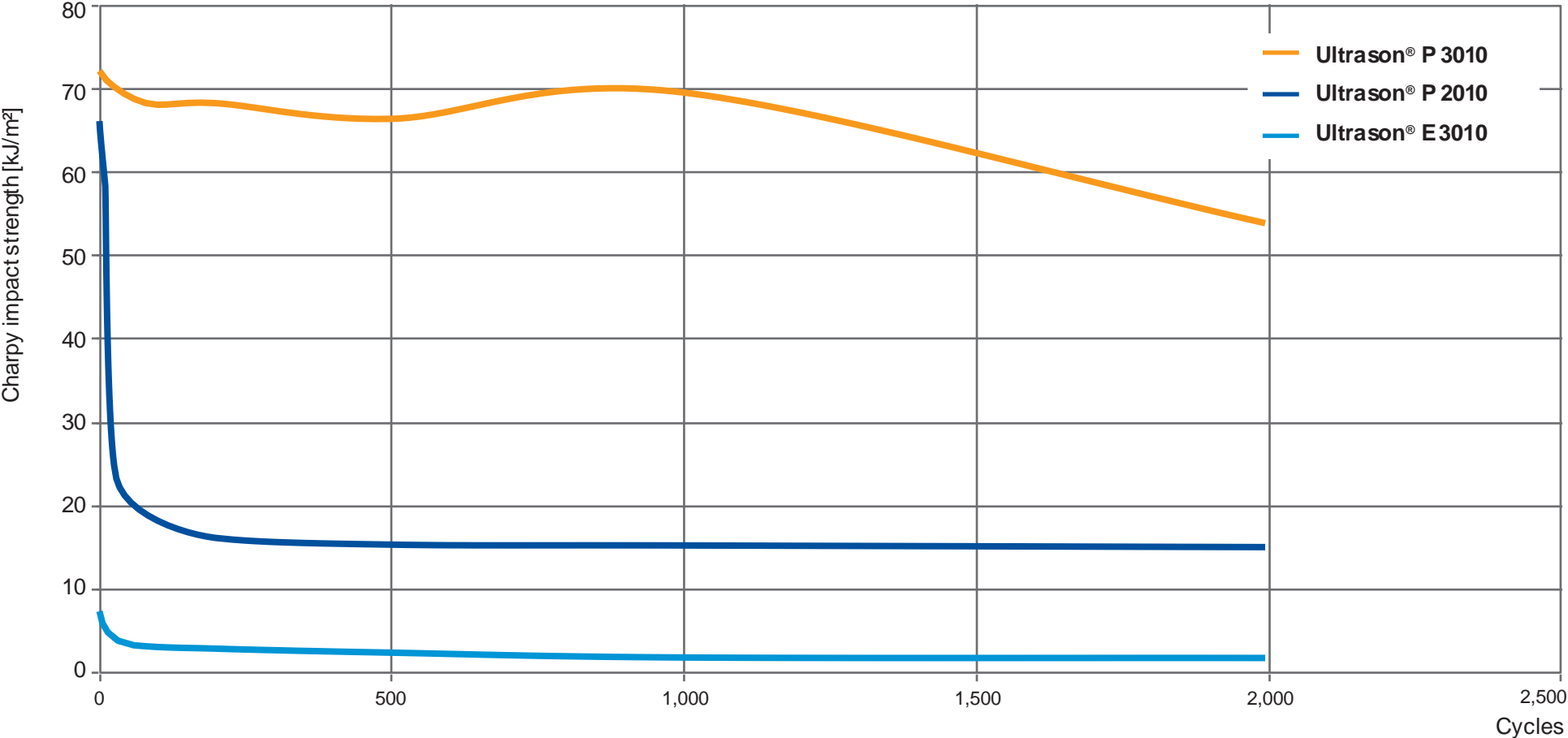
Hot steam sterilization of different Ultrason[®] grades at 134 °C: influence on nominal elongation at break



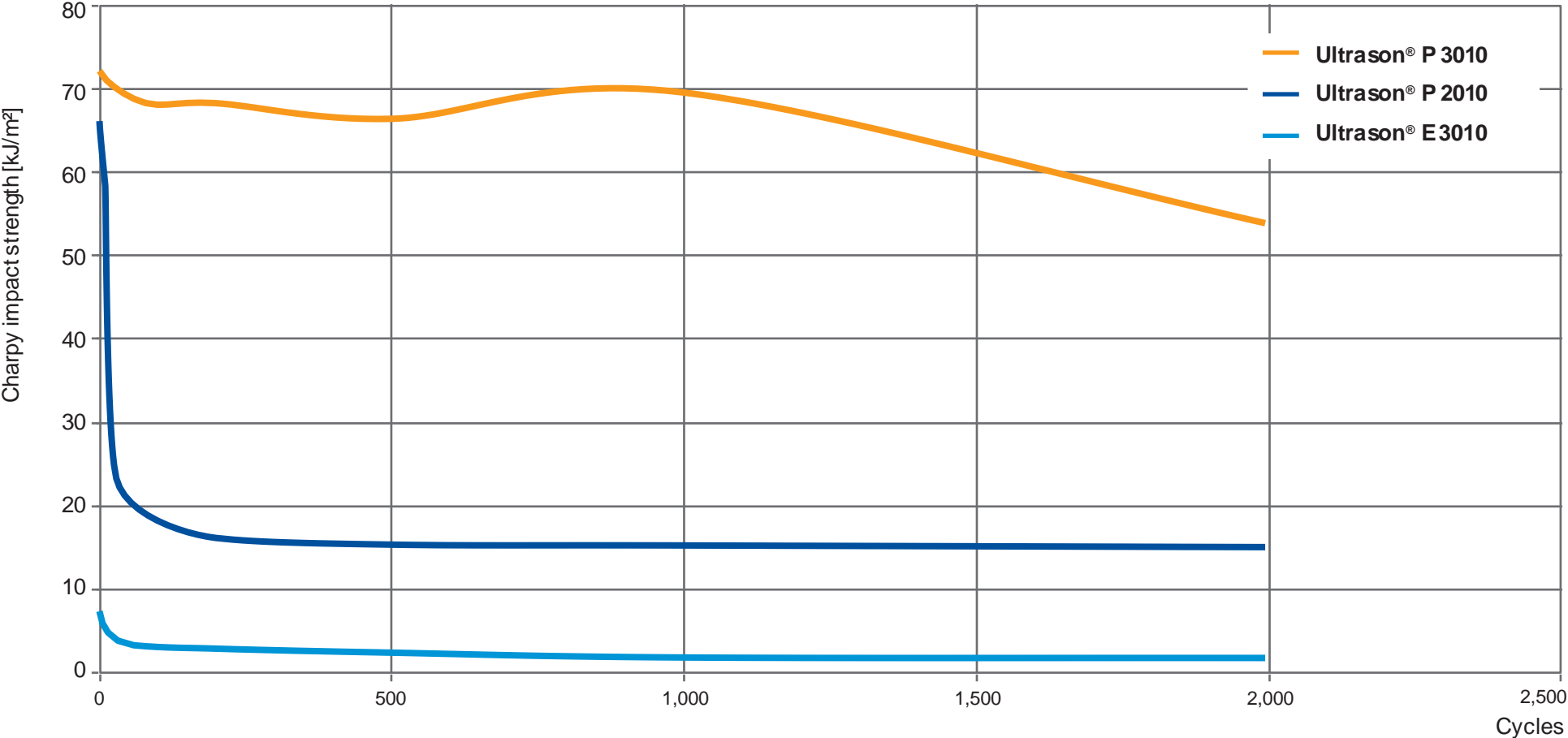
Hot steam sterilization of different Ultrason[®] grades at 134 °C: influence on nominal elongation at break



Hot steam sterilization of different Ultrason® grades at 134 °C: influence on Charpy impact strength



Hot steam sterilization of different Ultrason® grades at 134 °C: influence on Charpy impact strength



THANK YOU!

Questions?

Georg Grässel

Global Business Development Ultrason

[E-Mail: georg.graessel@basf.com](mailto:georg.graessel@basf.com)

Tel: +49 (0)621 60 21292

PRODUCT DISCLAIMER

The data contained in this presentation are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose.

Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

BASF SE, October 2020.



We create chemistry