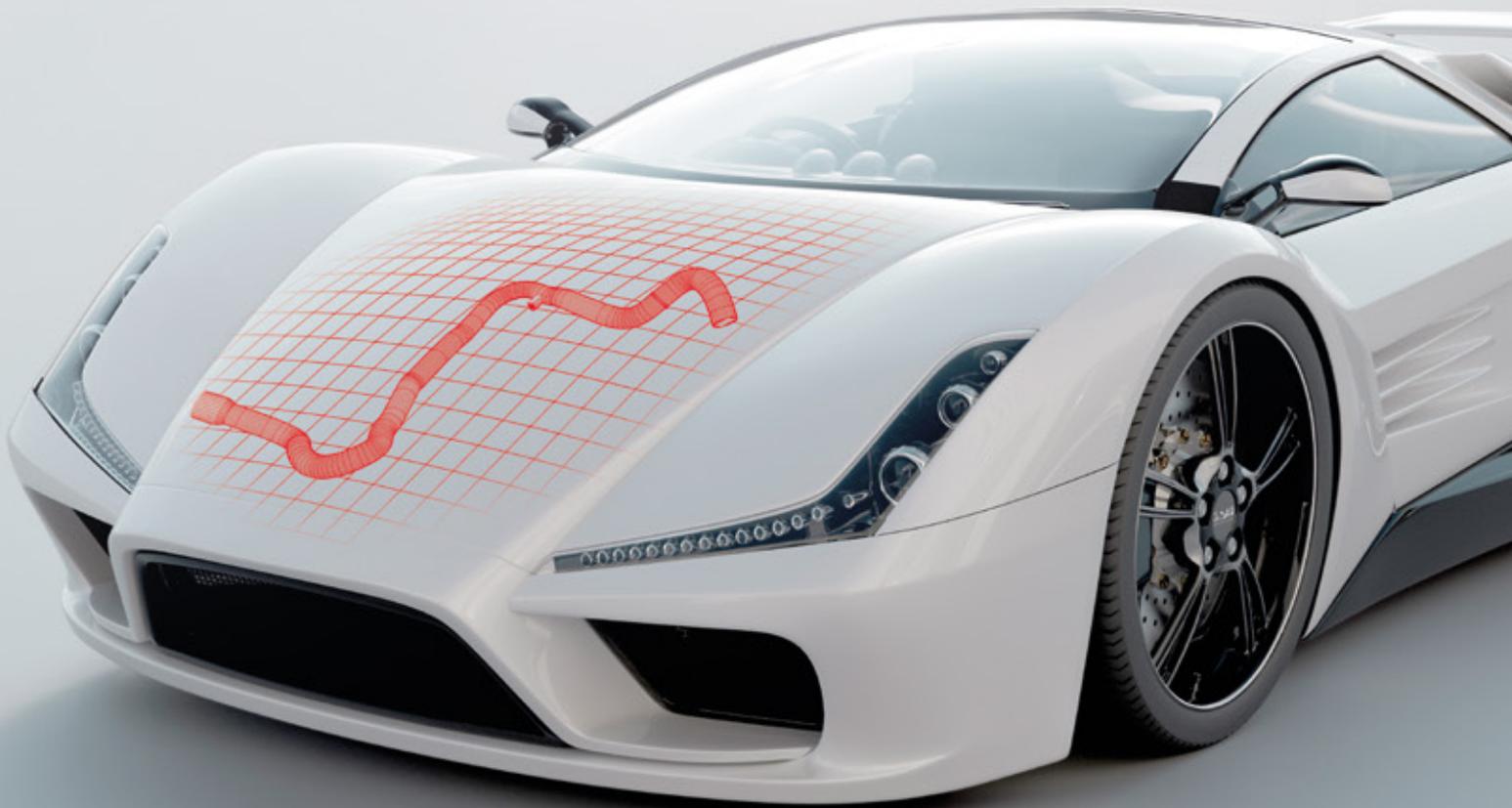


QUALITY MOBILIZES.



High-tech polyamides for
blow-molded parts

X **Durethan**[®] X **HiAnt**[®]

QUALITY WORKS.

LANXESS
Energizing Chemistry

MATERIALS AND KNOW-HOW HAND IN HAND

LANXESS high-tech polyamides have been synonymous with quality, efficiency and reliability for decades. Durethan® grades that have been specially developed for extrusion blow molding enable reliable and cost-effective production of high-grade plastic blow-molded parts for a wide range of automotive applications. These include air-ducting pipes with high thermal and chemical stability for use in engine compartments. This is a rapidly growing market thanks to the increasing use of turbocharged combustion engines. Other examples include tanks for fuels such as gasoline, diesel and natural gas with their particular requirement of low permeability for hydrocarbons.

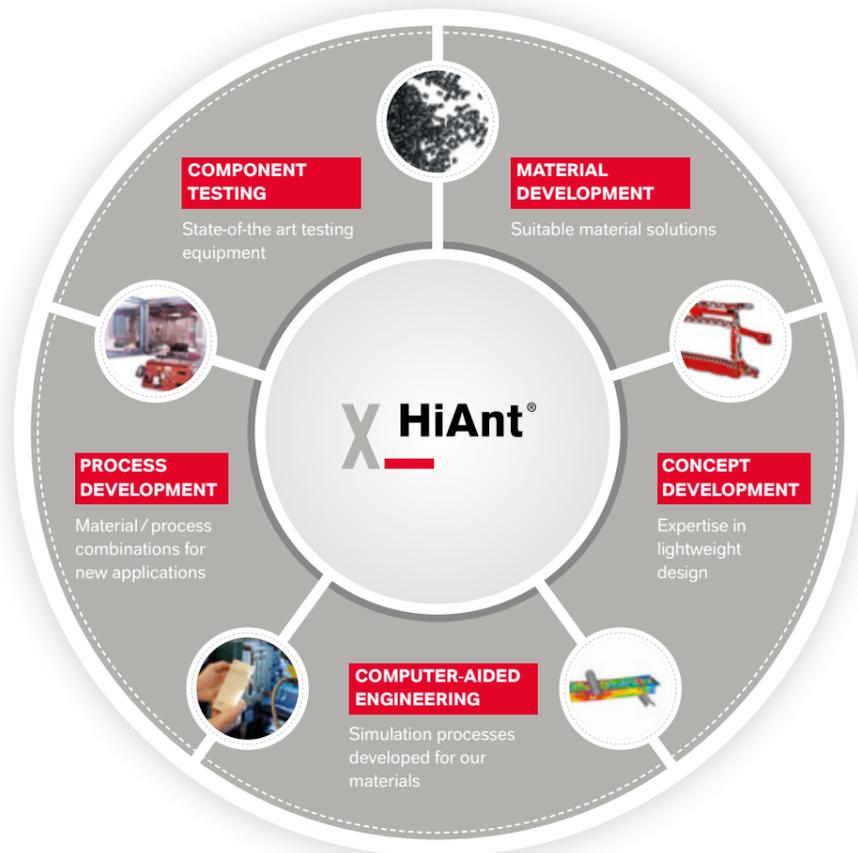
The value-enhancing combination of these customized, engineering plastics with extensive engineering know-how is a key performance pledge at LANXESS's High Performance Materials business unit. This combination makes optimal use of the potential of Durethan® materials to meet our customers' needs.

The HiAnt® brand represents this engineering expertise as part of an integrated service portfolio. This includes five service areas that cover the entire development chain from raw material to finished component in series production:

- Material development
- Concept development
- Computer-aided engineering (CAE)
- Component testing
- Process development

The name HiAnt® is just a few letters away from "high end," which is no coincidence, but primarily it is a combination of the words "high-tech" and „ant“. It stands for material properties and technological expertise combined with interactive and communicative teamwork – qualities that are reflected in the highly specialized and organized nature of ants.

Expertise in all phases of future-focused component development



APPLICATIONS IN AUTOMOTIVE ENGINEERING



■ Demonstrator tanks made of Durethan® BC550Z DUSXBL in the EPA test with UV exposure (image source: k3works)



■ Charge air tube (hot side) made of Durethan® AKV325H2.0

■ Clean air line made of Durethan® BC700HTS DUSXBL

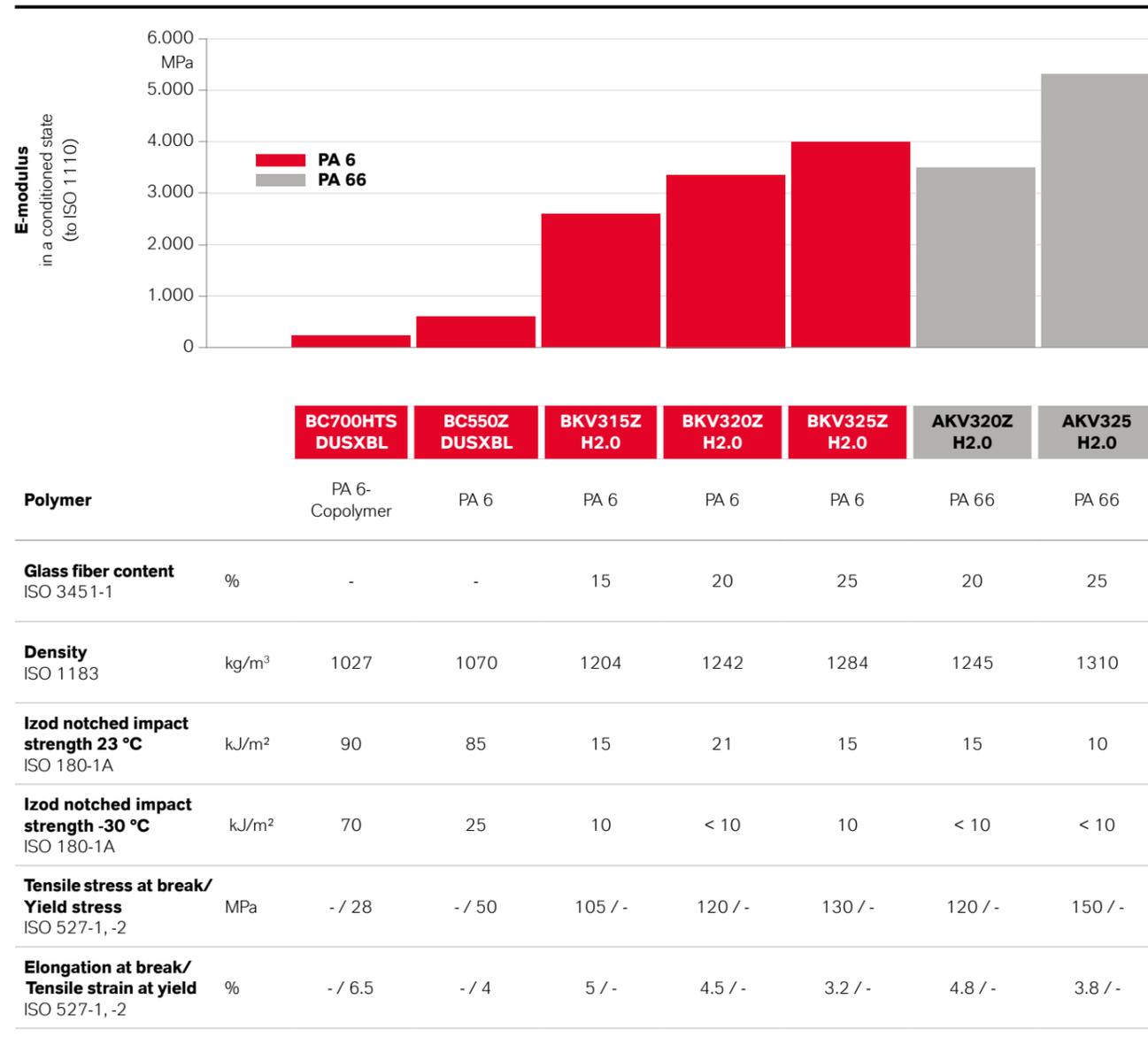
■ Resonator housing with mounting flange made of Durethan® AKV325H2.0 (housing) / Durethan® AKV30H2.0 (flange)

tank with PA 6 inliner for use in vehicles powered by natural gas



■ Clean air line made of Durethan® BKV315ZH2.0

BLOW MOLDING GRADES IN DETAIL

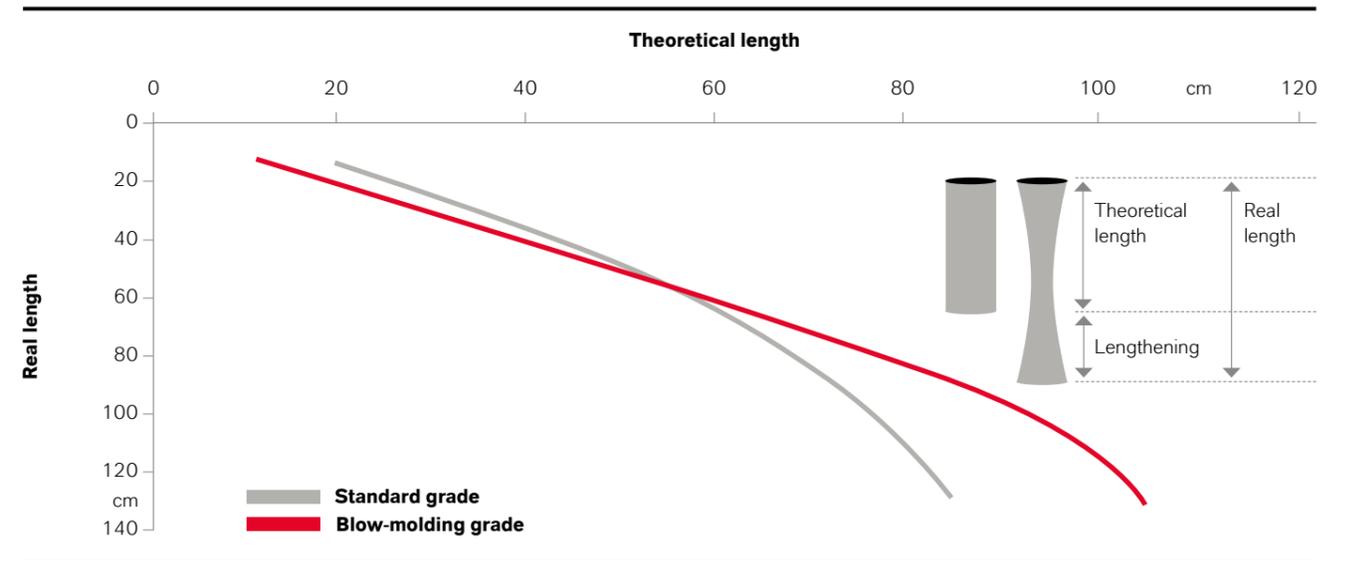


Values in freshly molded state

CUSTOMIZED POLYAMIDES FOR STABLE PROCESSES

Durethan® blow molding grades are optimized for the blow molding process. Their increased melt stiffness compared to standard injection molding grades allows effective control of

sagging, i.e. additional elongation of the extrudate resulting from its own weight. This ensures accurate reproduction of high-quality blow-molded parts



The many years of experience and extensive know-how of the High Performance Materials business unit ensure a wide range of processing options for our blow molding grades. This is a major prerequisite for stable processes and high component quality.

High chemical and heat resistance are common key characteristics of LANXESS polyamides. Glass-fiber-reinforced polyamide 66 grades exhibit excellent dimensional and pressure stability even at temperatures of over 200 °C, for example. They can be used in conjunction with both non-reinforced, flexible and stiff polyamide 6 grades to ensure complete air flow in engine compartments. Various applications – from

fresh air ducts to charge air tubes and resonators – can be produced using Durethan® blow molding grades. Engines specially fitted with turbochargers are set to become increasingly important in the future to achieve the desired/necessary results using smaller, fuel-saving and more environmentally friendly engines. Relevant Durethan® grades also withstand fuels, oils and blow-by gases. They therefore reliably meet the needs of OEMs for these types of components. The components can also be welded to other polyamide components easily and permanently, which greatly facilitates assembly.

TANKS MADE OF DURETHAN® LIGHTWEIGHT AND SAFE

Fuel tanks for applications other than in cars, e.g. for motorcycles, boats, lawnmowers and garden vacuums, also offer excellent potential for reducing weight if they are made of plastic. Naturally, cost-effectiveness and reliability mustn't fall by the wayside. Polyamide 6 blow molding grades from the Durethan® range are the ideal materials to meet all these requirements.

Polyamides, particularly Durethan® BC550Z DUSXBL, exhibit excellent barrier behavior in resisting hydrocarbons and, as a single-layer, single-material system, also enable efficient manufacturing. Tanks made of these materials meet the strict requirements of the U.S. EPA (Environmental Protection Agency) for fuel tanks for applications other than in cars and the ECE (United Nations Economic Commission for Europe) in terms of permeability for hydrocarbons. Unlike aluminum, for example, they are also resistant to biofuels containing ethanol.



Charge air tube (hot: 130–220 °C)

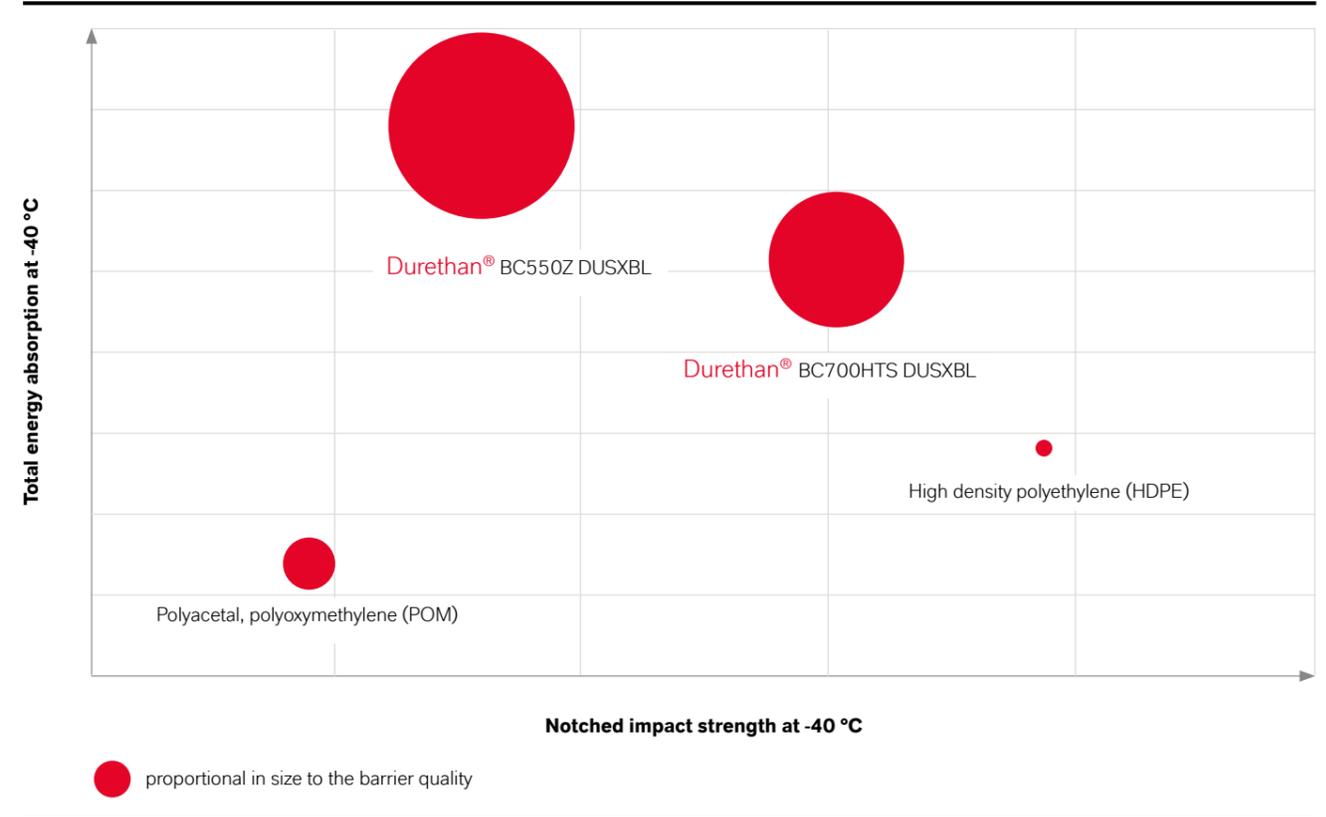
Durethan® BKV315ZH2.0
Durethan® BKV320ZH2.0
Durethan® BKV325ZH2.0
Durethan® AKV320ZH2.0
Durethan® AKV325H2.0

Clean air line (80–150 °C)

Durethan® BC700HTS DUSXBL
Durethan® BKV315ZH2.0

Charge air tube (cold: 80–160 °C)

Durethan® BC700HTS DUSXBL
Durethan® BKV315ZH2.0
Durethan® BKV320ZH2.0
Durethan® BKV325ZH2.0



Non-reinforced PA 6 grades with modified impact resistance are also highly elastic and pressure- and impact-resistant even at temperatures below -40 °C. This makes them the ideal material for manufacturing inliners used in tanks for compressed natural gas (CNG). These types of tanks only weigh

around a quarter of the corresponding steel versions and are thus perfect for use in vehicles powered by natural gas. Total vehicle weight could therefore be cut by up to seven percent. These inliners can be produced in an energy-saving single-stage process.



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