

## Moplen PP copolymer receives certification from the Association of the German Automotive Industry for collapsible boxes

*Moplen* EP340M, a resin produced by LyondellBasell Industries, has become one of the first polypropylene products to receive certification from the Association of the German Automotive Industry (VDA) for the production of collapsible pallet boxes used in automotive manufacturing. A heterophasic polypropylene copolymer regularly used by converters of small crates and large collapsible boxes, *Moplen* EP340M has now met the requirements of the automotive industry by providing excellent resistance to low and high temperatures and good impact performance for boxes used in this demanding manufacturing environment.



*By the courtesy of Georg Utz GmbH*

### **New standard for automotive manufacturing**

Used as a carrier for large automotive components, the boxes were developed by VDA experts together with the box manufacturers to optimize manufacturing chain logistics, including the reuse of the polypropylene boxes.

“We are proud that our *Moplen* EP340M polypropylene grade is now recommended by the VDA for collapsible boxes,” said Helmut Gersema, LyondellBasell’s Application Development Manager. “By using the VDA 4520 recommendation, car manufacturers can easily select, together with their suppliers, an effective material to produce the boxes.”

To date, the majority of carriers have been produced using traditional products such as wood and steel. Boxes made from polypropylene have proven to be more suitable for automotive manufacturing due to the weight and handling advantages they offer. “Large boxes produced by the German manufacturer Georg Utz, at 1200 mm long and 1000 mm wide, will be the new standard, similar to the small stacking box system already in use by the automotive sector,” explained Gersema.

### **Demanding dynamics testing**

With a ductile brittle temperature of -55 °C combined with a high heat deflection temperature of 80 °C, pallet boxes produced using *Moplen* EP340M fulfill a wide range of requirements, including high impact resistance.

The VDA 4520 recommendation for collapsible pallet boxes for the automotive

industry stipulates the geometric requirements and testing necessary for approval, such as a dynamic vibration test which must be conducted by an independent institute. The test simulates the vibration caused by a truck during transportation. Described by the ASTM 4728, several frequencies, amplitudes and accelerations are forced onto the box while loaded with 500 kg at room temperature, at +40°C and at – 15°C.

Other tests include the definition of the breaking load at room temperature, at +50°C and at -15°C. As a maximum load of up to 2800 kg can be expected on the lower box, the breaking load has to be even higher than 3 times the weight. Horizontal impact must be tested to simulate collisions by forklifts; several drop tests of a loaded carrier are conducted to complete the mechanical testing.

According to Gersema, the collapsible pallet boxes produced using *Moplen* EP340M have met all of these rigorous testing requirements. “With the VDA recommendation, we anticipate that automotive manufacturers will significantly increase their use of collapsible pallet boxes.”

**Photo caption:** *Moplen* EP340M, a resin produced by LyondellBasell Industries, has become one of the first polypropylene products to receive certification from the Association of the German Automotive Industry (VDA) for the production of collapsible pallet boxes used in automotive manufacturing. The resin met the requirements of the automotive industry by providing excellent resistance to low and high temperatures and good impact performance for boxes used in this demanding manufacturing environment.