PRESS RELEASE

Hella Pagid further develops its range of copper-free brake pads

- **Copper-free brake pads have been an integral part of the product range for years**
- **A specially developed material mix ensures the same high braking performance and comfort as with brake pads containing copper**
- **By 2025, Hella Pagid wants to offer copper-free brake pads exclusively**

Essen, July 4, 2017. Brake pads need to be able to withstand up to 800 degrees Celsius. In order to guarantee this, brake pads contain a proportion of metal of up to 65 percent depending on the design. An important constituent is copper, for example. The material reduces the wear of the pads, prevents noises and vibrations, and contributes to friction stability. However, copper is also suspected of damaging the environment. When braking, the smallest particles of the material may come loose and then get into the air, onto the road and, for example, into the ground water. Hella Pagid therefore already offers a wide range of copper-free brake pads or brake pads containing a reduced amount of copper. "Environmental protection is an extremely important issue for our company," explains Thomas Weyler, Product Manager for brake pads at Hella Pagid. In February 2017, the TÜV Rheinland awarded Hella Pagid the environmental certificate ISO 14001 and the energy management certificate ISO 50001 for the first time.

For years now, TMD Friction, co-shareholder of Hella Pagid and one of the world's largest brake pad manufacturers, has been researching new material compositions without copper for brake pads in original equipment. "The friction material of a brake pad is made up of more than 25 different materials. This meant it was a complex development process. Particularly because there is no single material that can adequately replace copper and its special characteristics," says Thomas Weyler. Finally, the group's engineers and technicians succeeded in developing a friction material made out of various metal sulfides, minerals, abrasive materials, fibers, ceramic particles, and graphite types. This material provides copper-free brake pads

with the same excellent wear and friction characteristics as the ones containing copper. The copper-free brake pads or brake pads containing a reduced amount of copper are marked with a leaf symbol on the product label according to their copper content. Hella Pagid is continually developing this range and distributes it around the world.

Brake pads without copper are also gaining increasing support in legislation. For example, since 2010 manufacturers of friction materials that are sold in certain US states have been encouraged to register their products through the "Better Brake Rules" law and to mark them with the corresponding leaf symbol. From 2021, the proportion of copper in brake pads will not be permitted to exceed the 5% mark. By 2025, brake pads sold in the USA must be entirely copper-free. Hella Pagid wants to exceed this goal and completely convert its range to copper-free brake pads earlier than this date.

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Hella Pagid GmbH, **Essen:** The joint venture between the automotive parts suppliers TMD Friction and HELLA sells brake components and brake accessories on the international automotive spare parts market. Both partners have a 50% share in the joint venture. Hella Pagid benefits greatly from the competencies of the two automotive suppliers, skills which complement each other exceptionally well. This joint venture perfectly combines the strengths of two market-leading companies in original equipment, aftermarket, and service. TMD Friction is the global market leader for brake linings, whose product portfolio combines top brake technology with constant innovation. The products of Hella Pagid are distributed via the global aftermarket organization of HELLA.

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