

Crucial for dynamic stability control VESTAMID® L1930 gear wheels for steering angle sensors

Driving in the dark, on a bend, or on a wet road—modern vehicles are usually equipped with dynamic stability control to keep them in lane in situations such as these. This electronically controlled driver assistance system requires an angle sensor with an important safety function to be built into the steering column. This is why Valeo Schalter und Sensoren GmbH, headquartered in Bietigheim-Bissingen (Germany) opted for VESTAMID® L1930 polyamide 12 from the Resource Efficiency Segment of Evonik, Essen, as the material for the gear drive of the steering angle sensor.

The steering angle sensor measures the steering angle of the steering wheel and continuously indicates to the dynamic stability control system—also known as the electronic stability control, or ESC—the direction in which the driver wants to go. The ESC compares the driver's intended course with the vehicle's actual direction and makes the necessary adjustments by targeted braking of individual wheels. This should prevent acceleration of the vehicle on bends, for example, and ensure that the driver can retain control of the vehicle.

The sensor is mounted in the steering column. A rotor consisting of a large gear wheel is actuated by the steering column and drives two smaller gear wheels with different numbers of teeth (on the Nonius principle). The magnets embedded in the gear wheels allow detection of the rotational position of the gear wheels by means of Hall or MR angle sensors. The electrical information provided by the angle sensors thus allows calculation of the absolute steering angle. The materials used for the gear drive must satisfy stringent requirements to ensure high accuracy and ruggedness in the steering angle sensor and maintain the required angular accuracy.

December 10, 2015

Scarlett Shi

Communications

Tel +86 21 6119-1200

Fax +86 21 6119-1116

scarlett.shi@evonik.com

Evonik Industries AG

Rellinghauser Straße 1-11
45128 Essen

Germany

Phone +49 201 177-01

Telefax +49 201 177-3475

www.evonik.de

Supervisory Board

Dr. Werner Müller, Chairman

Executive Board

Dr. Klaus Engel, Chairman

Dr. Ralph Sven Kaufmann

Christian Kullmann

Thomas Wessel

Ute Wolf

Registered office Essen

Registered court

Essen local court

Commercial registry B 19474

VAT ID no. DE 811160003

VESTAMID® L1930 offers exactly these properties: As a polyamide 12 it is temperature-stable over a wide range, from -40°C to 125°C. Its properties change only very slightly with variations in ambient humidity; molded parts show almost no dimensional changes. It has extraordinarily high impact resistance and notched impact strength, even well below freezing point. It has good to very good resistance to oils and greases, fuels, hydraulic fluids, and salt solutions, making it ideal for automotive use. Its outstanding abrasion resistance and low sliding friction coefficient are essential qualities for the gear wheels of the steering angle sensor, and it also has noise- and vibration-damping properties.

VESTAMID® has been used in the automotive sector by well-known car makers for 50 years. Continued development has led to an increasingly large number of application areas, ranging from line systems through cable sheathing to the very smallest injection-molded parts.



Photo caption:

VESTAMID® L1930 gear wheels contribute to safer driving: They ensure an accurate measurement result, which is essential for dynamic stability control.

Company information

Evonik, the creative industrial group from Germany, is one of the world leaders in specialty chemicals. Profitable growth and a sustained increase in the value of the company form the heart of Evonik's corporate strategy. Its activities focus on the key megatrends health, nutrition, resource efficiency and globalization. Evonik benefits specifically from its innovative prowess and integrated technology platforms. Evonik is active in over 100 countries around the world. In fiscal 2014 more than 33,000 employees generated sales of around €12.9 billion and an operating profit (adjusted EBITDA) of about €1.9 billion.

Evonik Industries has been producing specialty chemical products in the Greater China region (Mainland China, Hong Kong and Taiwan) since the late 1970's; with wide-ranging trading relations already in place prior to this in the region. Evonik regards Greater China as one of the driving forces of the global economy and we consequently endeavour to grow our business in the region. The company now has around 3,000 employees in the Greater China region, the regional sales reached over €1.1 billion in 2014.

Disclaimer

In so far as forecasts or expectations are expressed in this press release or where our statements concern the future, these forecasts, expectations or statements may involve known or unknown risks and uncertainties. Actual results or developments may vary, depending on changes in the operating environment. Neither Evonik Industries AG nor its group companies assume an obligation to update the forecasts, expectations or statements contained in this release.