

COPPER AND SMART CARS

By making the most of technological innovations, cars are now becoming “smart” in order to ensure the safety and improve the comfort of passengers. Thanks to its remarkable electrical conductivity and corrosion resistance, copper is playing a major part in this development. A car already contains between 15 and 28 kg of copper depending on the model, primarily for the cables and a broad range of electrical system components. But the use of copper, a key player in electronics, will continue to grow, with an increase of 28% expected over the next five years in the most innovative vehicles.

Safer cars

Modern cars are equipped with a multitude of electronic based equipment to make them safer. The first electronic applications appeared in the '70s, with the first electrically controlled automatic transmission and electronic ignition systems. Nowadays, sensors give cars real-time capability to detect dangers on the road. Braking is optimised using ABS (Antilock braking system), while Electronic Stability Control (ESC) optimises car trajectory control. Numerous other applications to further improve passenger safety are well advanced, such as monitoring driver alertness, unlocking and automatic starting with a smart card, active suspension systems and headlights where the light intensity can be adapted as a function of speed and night vision.

“We use around 20 kg of copper in the production of a Saab passenger car” says Umberto Stefani, Public Affairs Manager of Beherman European. S. A., Saab’s distributor in Belgium. “Clearly the major part of this copper is used in the electric wiring systems, as well in many small electric motors. However, at Saab, where safety is a key consideration, we select materials which combine reliability and performance – minimum weight for maximum efficiency. That’s why we use copper for critical applications such as the connectors in braking and transmission systems.”

More functional cars

Cars are also adapting to the new needs of their passengers, thanks to applications, such as GPS positioning, navigation assistance and DVD players. Plus, thanks to the Internet, very soon all manner of communication, navigation and entertainment services will be available onboard vehicles. In certain models the onboard computer is already connected to the Internet, with the possibility of getting travel information and weather forecasts, receiving faxes and emails, or being in direct contact with breakdown assistance services. Comfort is constantly being improved through, for example, seats that automatically adjust to the size and weight of the passengers.

The essential role of copper

All of these innovations make use of copper’s outstanding conductivity to transmit electrical current and data. With the increase in the number of applications, onboard electrical systems must be constantly improved, with wires that are ever thinner and shorter and ideally fewer of them. Interconnections between the cards, chips and sensors must be quicker and shorter. Optimising copper use also significantly improves the energy efficiency of all electrical systems.

Used in almost every mechanical and electromechanical component in vehicles, copper and its alloys also contribute to improving overall engine performance and efficiency and play a key role in modern fault diagnostics and maintenance scheduling. Copper is also important for the development of environmentally friendly cars, through its ability to be 100% recyclable without any loss in terms of quality or performance.

About the European Copper Institute:

The European Copper Institute is a joint venture between the world’s mining companies (represented by the International Copper Association, Ltd.) and the leading European fabricators. Its mission is to promote copper’s benefits to modern society across Europe through its Brussels office and its network of eleven Copper Development Associations. www.eurocopper.org

Further information: European Copper Institute
Christian de BARRIN, Communications Manager
Tel: + 32 2 777 70 82- GSM: 0476 30 99 60
cdb@eurocopper.org

Press contact: Ogilvy Public Relations
Evelyn GESSLER
Tel: +32 2 545 65 42 – GSM: 0475 23 53 92
evelyn.gessler@ogilvy.be