

We provide technical answers to ecological challenges.

Dr Claus Heubeck, Manager Research and Development



Modern brass materials as key components in developing fuel-efficient engines

Valve stem guides, synchronizer disks and slide bearings made of special brass are part and parcel of today's engines. The downsizing strategies of practically all the automobile manufacturers towards increased fuel efficiency means that standard special brasses are reaching their limits.

Thanks to our materials research, new brass alloys have successfully been developed in close contact with the automobile industry that already fulfil all the requirements of the downsizing strategy towards reducing CO₂.

The following properties of these new brass alloys should be noted in particular:

1. These special brasses have a temperature stability above 400°C (today's materials melt at about 300°C).
2. Wear resistance is again much higher in comparison with other materials, with or without lubrication. In the event of lubricating film breakage or lubrication malfunction, emergency operation is a crucial prerequisite for a modern engine material.
3. It is easier to work these materials (turning, drilling, milling, buffing, etc.) than other substances, as they provide optimal chip breakage thanks to their micro-porous structure – and this without the conventional chip breaker, lead. Minute, hard, intermetallic compounds take over the well-known properties of lead that have a positive effect on chip breakage.

These alloys already meet the future requirements of the End-of-Life Vehicles Regulation.

Gallery



1 synchronizer disk made of brass



Valve stem guide made of brass



Product

New alloys as the prerequisite for smaller, fuel-saving engines with reduced CO₂ emissions.

Saving:
about 10 % CO₂

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