



E-Mobility meets High-Performance Lubricants and Thermofluids

Lubricant solutions
and related products
for e-mobility concepts

LUBRICANTS.
TECHNOLOGY.
PEOPLE.



E-MOBILITY – NEW CHALLENGES IN ALL AREAS

The latest e-mobility concepts present more than just vehicle manufacturers with major challenges. The transformation in propulsion technology is also a huge task for suppliers, as the solutions they provide must meet completely new requirements – for example in the fields of cooling, material compatibility, or conductivity. In addition to this, innovative ideas for extreme friction reduction are required in order to extend range and reduce CO₂ emissions.

We are heavily involved in these developments.



Flexibility is exactly our thing

There are many complex applications for specialized lubricants in electric and hybrid vehicles, where these lubricants reduce friction and secure the requisite service life. Thermofluids are also playing an increasingly important role in electrified vehicles, as established coolants offer only limited suitability for use in drive and battery systems, primarily due to their electrical conductivity. Protecting the sensitive components from environmental influences represents another challenge that we are happy to accept.

We find the right solutions for any vehicle both reliably and flexibly – no matter whether for lubrication, cooling, or protection.



Lubricants

Fluids

E-axles
Hybrid transmissions
Shock absorbers

Greases

Electric motors
Electric drive shafts
Wheel-hub drives
Electrical contacts
Electric brake booster
Elec. steering systems

Thermofluids

E-axles
Battery
Fuel cell
Power electronics

Coatings

Corrosion protection

Battery casings
Other components

Friction reduction

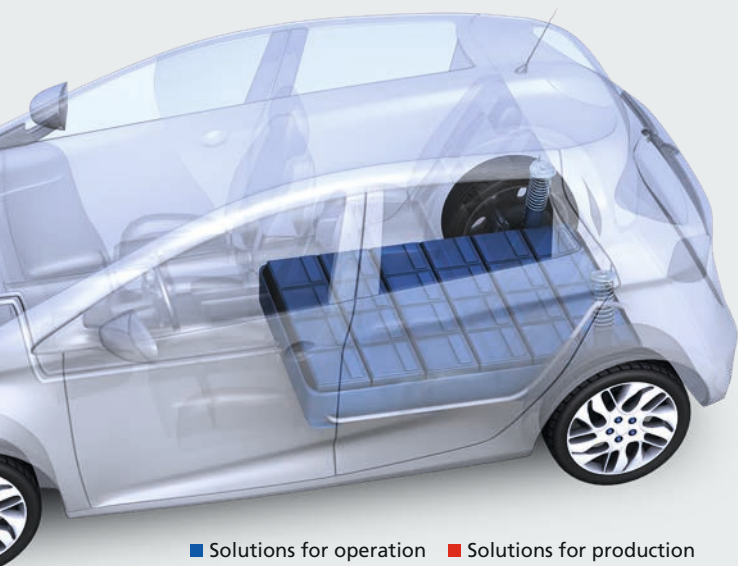
Sealings
Plugs

Cleaners, coatings

Battery components
Propulsion components
Electronic components

Fluids

Forming
Drawing
Punching
Machining

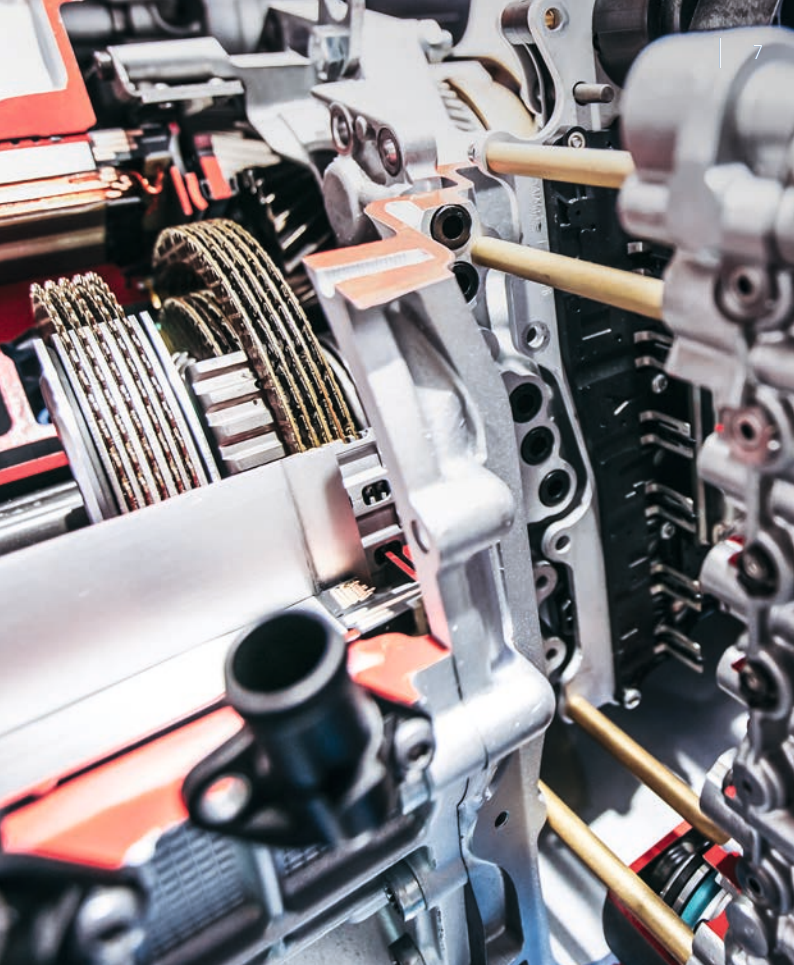


Good ideas for your drivetrain

At FUCHS, we are well versed in developing suitable lubricants with ideal properties and high performance for new applications. High-end solutions for our customers can only be produced with dedicated products for extreme friction reduction and improved heat transfer, while complying with all requirements. Yet our customers are often also keen to use existing solutions in electrified drive systems. We are happy to test these to determine whether they can be used to meet new, additional requirements, as well as to help our customers select and adapt the respective system. Indeed, FUCHS is represented in many electric and hybrid vehicles of the leading premium manufacturers – whether dedicated or converted.



Drive-train \ Lubrication Lube	AXF Axle Fluid	MTF Manual Transmission Fluid	DCTF Double Clutch Transmission Fluid
Conventional drivetrain	✓	✓	✓
Hybrid P0	✓	✓	✓
Hybrid PS/P2/P3/DHT	✓		✓
Hybrid P4 E-Motor dry			
BEV/FCV E-Motor wet			
BEV/FCV E-Motor dry			

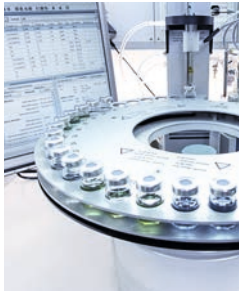


ATF Automatic Transmission Fluid	E-DCTF, E-ATF Hybrid Transmis- sion Fluid (DHTF)	EDF E-Drive Fluid = E-Axle Fluid	EMG E-Motor Grease
✓			
✓			✓
✓	✓		✓
		✓	✓
		✓	
		✓	✓

Always one step ahead!

Our many years of experience, intensive advance development, as well as major R&D laboratory and test bay capacities enable us to develop and test suitable solutions for new challenges together with our customers. Extensive expertise, speed, flexibility, and when necessary unconventional approaches secure reliable results here.

We would be happy to work with you in determining the right media for your tasks from the large number of potential solutions.





Achieving more together

Participating in joint research projects allows us to constantly find new ways of making drive systems even more efficient together with customers and value-adding partners. As a result, we can increase the achievable range in battery-powered electrical vehicles and minimize CO₂ emissions in hybrids, while helping to reduce costs for both.

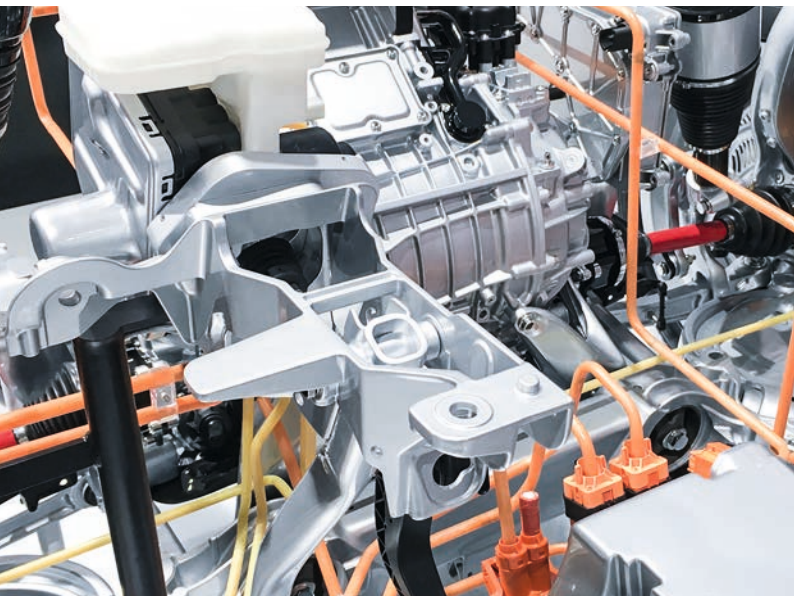
One such joint project in which FUCHS is collaborating with other OEMs and suppliers is Speed4E. The objective here is to achieve both lubrication and cooling using just one fluid in a highly integrated drive system that reaches speeds of up to 50,000 rpm.

*Speed*4E



Simulation of the fluid flow in the high-speed transmission
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