

Electric Mobility & Innovation : Total Launches a Pioneering Line of Fluids for Electric and Hybrid Vehicles

Paris, December 5, 2018 – Total is consolidating its position as key player in electric mobility by launching today an innovative line of fluids for electric and hybrid vehicles. Produced thanks to important efforts of the Group's R&D teams, these products have been specially developed to meet the cooling and lubrication needs of the various components of these new types of engines and to ensure that they remain in peak condition throughout their lifetime.

Two new product lines are now available to automakers: **Total Quartz EV Fluid**, for light vehicles, and **Total Rubia EV Fluid**, for industrial & utility vehicles and electric buses.

Marketed by Total Lubricants, these products join the other electric mobility solutions Total offers through a variety of concrete applications for charging, storage, and fleet management.

"Through extensive research efforts, we are proud to have developed products that align with the new needs of electric mobility," explains Philippe Charleux, Senior Vice President Lubricants and Specialities at Total. *"Integrated before the vehicles leave the factories, these high-performance fluids will accompany them throughout their service lives, benefitting all our customers: parts manufacturers, automakers and end users. This project illustrates our technical excellence and our ability to anticipate and innovate, which we leverage for a sustainable and performing mobility."*

Developed in Response to New Technical Requirements

These lines were developed to provide a better solution for the specific issues linked to engines and transmissions with high rotation speeds, and the need to control heat exchange in electric batteries.

Total researchers focused their research and development efforts for these fluids on four main characteristics, required by any electric or hybrid application:

- **dielectric properties**, essential to any usage with electric current
- **compatibility with new electrification components**, helping to prevent the corrosion of copper coils in electric engines and protect their polymer coatings
- a **solution for the temperature constraints** specific to electric models: rapid calorific evacuation during major accelerations or fast charges, thermal management for batteries, etc.
- **conventional lubrication services for transmissions** to protect their mechanical components, maintain optimal friction properties and ensure vehicles efficiency over time

Total and ElectroMobility

This line of fluids for electric and hybrid vehicles, now available from Total Lubricants, is in line with [Total Climate Strategy](#) and the Group's ambition to reduce the carbon footprint of the energy products offered to its customers.

It comes in addition to the wide selection of electric mobility solutions already available from Total and its subsidiaries, including:

- **A territorial grid of charging points within the TOTAL service station network, which will eventually include 1,000 high-powered (150 kW) charging points** at 300 service-stations, one every 150 km in Western Europe
- **Access to tens of thousands of public charging points throughout Europe** through partnerships, offered to professionals **via the TOTAL GR Card**
- **10,000 public charging points in France, managed by G2Mobility** and located in local and regional authorities as well as in businesses and companies' premises
- Private-use solutions, with **electric charging offers from Direct Energie and Total Spring in France as well as Lampiris in Belgium**, combined with their electricity provision services

About Total Lubricants

Total Lubricants is a world leader in the production and distribution of lubricants, with 41 production sites worldwide and more than 5,800 collaborators in 150 countries. Total Lubricants offers innovative, high-performance and environmentally-friendly products and services from its R & D center, with more than 130 researchers. Total Lubricants is an essential partner for the automotive, industrial and marine markets.


www.lubricants.total.com   
www.elf.com

About Total

Total is a major energy player, which produces and markets fuels, natural gas and low-carbon electricity. Our 100,000 employees are committed to better energy that is safer, more affordable, cleaner and accessible to as many people as possible. Active in more than 130 countries, our ambition is to become the responsible energy major.

* * * * *

Total Contacts

Media Relations: +33 1 47 44 46 99 | presse@total.com |  [@TotalPress](https://twitter.com/TotalPress)

Investor Relations: +44 (0)207 719 7962 | ir@total.com

Cautionary note

This press release, from which no legal consequences may be drawn, is for information purposes only. The entities in which TOTAL S.A. directly or indirectly owns investments are separate legal entities. TOTAL S.A. has no liability for their acts or omissions. In this document, the terms "Total" and "Total Group" are sometimes used for convenience where general references are made to TOTAL S.A. and/or its subsidiaries. Likewise, the words "we", "us" and "our" may also be used to refer to subsidiaries in general or to those who work for them.

This document may contain forward-looking information and statements that are based on a number of economic data and assumptions made in a given economic, competitive and regulatory environment. They may prove to be inaccurate in the future and are subject to a number of risk factors. Neither TOTAL S.A. nor any of its subsidiaries assumes any obligation to update publicly any forward-looking information or statement, objectives or trends contained in this document whether as a result of new information, future events or otherwise.