ADDITIVES
FOR PROFESSIONALS

The little more that makes you spend less
Total is the 4th ranked global oil company in the world active in upstream (oil & gas exploration and production), refining & chemicals and downstream (marketing & services associated with the distribution of petroleum products and energy solutions). This includes a worldwide and expanding network of more than 15,000 service-stations.

For a great number of years, Total has been offering premium fuels (based on Total additives technology) through its network of retail service-stations and the general sales of bulk fuel for professional customers.

The new offer of TOTAL EXCELLIUM Concentrate Diesel for professional users is a specific transposition making the technology easily accessible for Professionals and allowing them to benefit directly from the technology without changing their current base fuel supply.

TCO (total cost of ownership) approach and environmental policy are today key factors for Professionals. Therefore, in order to bring customers both engine durability, cost reduction through fuel economy and operating costs optimization, and reduction of their environmental footprint, the Total Research centre developed TOTAL EXCELLIUM Concentrate Diesel additives based on TOTAL EXCELLIUM technology.

SAVINGS PROVIDER: REDUCTION IN YOUR OPERATING COSTS

- Reduction in fuel consumption by up to 5%
- Reduction in maintenance costs and extended lifetime of engines

A BETTER ENVIRONMENTAL FOOTPRINT

- Reduction of the impact on environment (polluting and CO₂ emissions)

* In relation to a non-specifically additized fuel.
Day after day, engines can get fouled and their performance is limited due to the accumulation of deposits affecting sensitive parts. TOTAL EXCELLIUM Concentrate Diesel contains new deposit control additives which clean the injectors – the vital organs in diesel engines – and keep them clean.

TOTAL EXCELLUM Concentrate Diesel might prevent up to 93% of injector fouling. It can clean up as far as 45% of existing fouling as from the second tank fill. Optimum fuel spray pattern and optimum fuel quantity (and timing) delivered to the combustion chamber are restored.

**REDUCTION IN MAINTENANCE COSTS AND EXTENDED LIFETIME OF ENGINES**

By eliminating injector deposits and improving combustion, TOTAL EXCELLUM Concentrate Diesel enables the engine to maintain its performance. Protection against wear, fuel degradation, water contamination and corrosion contributes to an extended lifetime of engines.

**Engine performance maintained / Restoration of engine power**

TOTAL EXCELLUM Concentrate Diesel maintains engine power in the long-term thanks to the protection of the injectors against all types of deposits. It enables restoration of engine power, for example, in only 7 hours.

**REDUCTION IN FUEL CONSUMPTION BY UP TO 5%**

The combination of complete engine cleanliness (both clean up and keep clean effects), friction reduction and combustion improvement provides immediate fuel efficiency (up to 5% - see test beds and field-stations results) and economy.
**KEEP YOUR ENGINE CLEAN OVER TIME**

**Optimum engine protection**

ACCUMULATION OF INJECTOR DEPOSITS NOT ONLY PENALIZES FUEL EFFICIENCY, IT MIGHT ALSO LEAD TO OPERATION TROUBLES AND ENGINE MALFUNCTIONING. BY KEEPING THE INJECTORS EXCEPTIONALLY CLEAN OVER TIME, THE OCCURRENCE OF INJECTOR FAILURE AND UNPLANNED ENGINE MAINTENANCE IS REDUCED.

**Corrosion level**

Contamination of diesel fuel with water is a significant issue (also favoring fuel corrosion tendency) and it is vital to separate it quickly and as much as possible from the fuel in case of ingress. TOTAL EXCELLIUM Concentrate Diesel enables a rapid separation of the fuel from the water in order to eliminate it.

Injection systems are increasingly sensitive, thus enhancing the performance requirements of the filtration systems. By conferring the fuel with improved filtrability, TOTAL EXCELLIUM Concentrate Diesel protects the diesel filter from premature clogging.

Use of TOTAL EXCELLIUM Concentrate Diesel has enabled a reduction in polluting emissions at the exhaust of a heavy duty vehicle:
- Carbon monoxide: -32%,
- Unburnt hydrocarbons: -55%,
- Nitrogen oxides: -21%,
- Particulates: -16%.

Furthermore, the reduction in fuel consumption directly results in equivalent reductions in CO₂ emissions: -4.2%.

**FURTHERMORE, THE REDUCTION IN CONSUMPTION DIRECTLY RESULTS IN A REDUCTION IN CO₂ EMISSIONS.**
A test program designed to measure the capacity of TOTAL EXCELLIUM Concentrate Diesel to reduce heavy duty vehicle fuel consumption was carried out within the framework of the French Energy Savings Certificate system and was based on the test protocol presented in the project description form n° T965 in conjunction with form TRA-EQ-119. This program was carried out entirely by the UTAC-CERAM group, the body certified under international standard ISO 9001.

These tests demonstrated a reduction in fuel consumption of 4.4% on a Euro 5 heavy duty vehicle after running on TOTAL EXCELLIUM Concentrate Diesel for 17,000 km.

1 A reduction in consumption in relation to a non-specifically additized fuel of 4.4% after 17,000 km measured by UTAC-CERAM (France) in May 2014 with TOTAL EXCELLIUM Concentrate Diesel STAR on a Euro 5 heavy duty vehicle in compliance with the test protocol of the Energy Saving Certificates TRA-EQ-119 body. The results may vary depending on the type of vehicle.
PROVEN RESULTS ON FIELD TESTS

RESULTS OF A TEST CARRIED OUT IN MOROCCO WITH CTM*
CTM is the Moroccan leader in passenger road transportation.

Tests were conducted on 18 selected vehicles that were assigned to specific routes totaling nearly 2,000 tankfills, 600,000 liters of fuel and 2 million kilometers. Altran, an independent body that is certified according to the ISO 9001 international standard, was entrusted with statistical processing of data. TOTAL EXCELLIUM Concentrate Diesel demonstrated an average reduction of fuel consumption by 4.1%6 at the end of the test period.

* Test conducted with TOTAL EXCELLIUM Concentrate Diesel HT
6 As compared to a fuel without specific additives; results obtained on the basis of a statistical study carried out in 2016 by the Altran Company on 18 vehicles. Results may vary according to vehicle type.

RESULTS OF A TEST CARRIED OUT IN SPAIN WITH D-BUS*
San Sebastian City Council, through Compañía del Tranvía de San Sebastián (d-bus), provides the public transport service to travellers in the city.

Tests were carried out in 2016 under real operating conditions on a fleet of 82 buses (MERCEDES-BENZ and MAN 12 and 18 meters buses). The distance covered represents more than 1.5 million kilometers for a consumption of almost 0.6 million liters of diesel.

* Test conducted with TOTAL EXCELLIUM Concentrate Diesel STD
7 Statistical interpretation of the results was carried out on a population of 82 buses. The results may vary depending on the type of vehicle.

RESULTS OF A TEST CARRIED OUT IN CANADA WITH AN AGRI-FOOD ENTERPRISE*

Tests were carried out in 2016 under real operating conditions on a fleet of 11 trucks. TOTAL EXCELLIUM Concentrate Diesel enabled an average consumption reduction of 5%8. These tests were performed on vehicles operating in the area of Montreal and surroundings. The distance covered represents almost 0.1 million kilometers.

* Test conducted with TOTAL EXCELLIUM Concentrate Diesel PLUS
8 In relation to a non-specifically additized fuel; result obtained on the basis of a statistical analysis carried out in 2016 based on 11 trucks. The results may vary depending on the type of vehicle.

ADDITIONAL BENEFITS

Improvement of fuel durability*
Reduction of fuel supply variability*
Protection of storage installations

* In relation to a non-specifically additized fuel.