

DIESEL FUEL - QUALITY MANAGEMENT

Introduction

Sasol Oil (Pty) Ltd. issues a brochure on “Diesel Fuel Quality Management and Storage for all Diesel Retailers, Farmers and Commercial Fleet Operators”. The front page states:

“Today, a large number of oil company clients have diesel storage tanks situated on their property and many are unaware that when fuel has been delivered into the tanks it is their responsibility and in their own interest to ensure that the quality of the fuel as delivered is maintained. Poor housekeeping can result in degradation of the stored fuel and subsequent breakdown of machinery and vehicles, incurring unnecessary and often excessive financial loss to the operator.”

This unequivocally places responsibility for fuel quality management on the customer and this is the norm in the industry throughout the world.

The question is, how does a customer maintain fuel quality as delivered? It is common knowledge within the industry that diesel fuel degrades with time, turning dark brown in colour and releasing resinous gum (also known as “asphaltine”) even when kept in sealed containers. Fuel storage tanks are not sealed, but have breather vents allowing air to enter the tank as fuel is drawn off or temperature fluctuates.

The only advice offered by oil companies to clients are such tips as using the fuel as quickly as possible, identifying poor housekeeping as a problem, good filtration and draining water from tank bottoms regularly. Sadly, this is insufficient to maintain fuel quality.

Contamination

The brochure goes on to identify water as the “largest single contaminant of diesel fuel.”

The fact is that water is not only the largest, but also the most detrimental, contaminant of diesel fuel. While the quantity of water may well be considered negligible, its chemical activity in fuel is not. All other forms of contamination are secondary to, and the result of, water contamination.

The most seriously neglected and misunderstood form of water contamination is water-content, also called suspended water, which is invisible, therefore ignored. S.A.B.S. 342 and EN590, the standard specifications for Automotive Diesel Fuel, stipulate that test samples must be free of visible water, yet the properties listed in Table 1 of the specification include water-content, allowing 0,05% (max) by volume.

This is the Achilles heel of diesel fuel. The negligible quantity of water contained within the fuel is the culprit behind (i) the ageing process of the fuel in storage, (ii) corrosive properties of the fuel, (iii) the growth of fungi and bacteria, (iv) acid contamination of crankcase oil.

Water-Content of Diesel Fuel

The word “hygroscopic” is defined as: “the tendency of a substance to absorb moisture from the air.” Diesel fuel is hygroscopic.

Water-content is invisible and hangs in diesel in exactly the same way as humidity hangs in the air, only lots more of it. Free water is clearly visible, lying below the fuel. It can be detected just as clearly with water-finding paste on a dipstick.

The oil industry has never had a solution to this, so are forced to pass it off as being negligible. Many diesel consumers are actually unaware that it even exists!

Water-content has always been an integral part of diesel fuel. The detrimental effects that water-content has in diesel equipment have always been accepted as part of “normal wear and tear”. Only when water-free diesel became available through the advent of **DIESELFIX**, was it possible to evaluate and quantify the difference.

Water-Traps and Filters

There is no alternative to good filtration. The possibility of contaminated diesel always exists all over the world. Filtration is the only way to remove solid contaminants and protect against the destructive effects of free water.

The best water-traps and filters available are totally ineffectual against water-content of diesel.

This is proven by the fact that, even when high quality water-traps and filters are in place, corrosion occurs in pumps and injectors and acids are produced during the combustion process.

DIESELFIX

DIESELFIX is formulated from a totally unique combination of non-petroleum chemicals. When applied to fuel tanks at 1-in-2000 for the initial dose and 1-in-4000 with every consecutive delivery, fuel quality can be maintained at better than the quality as delivered, until used, without any deterioration. This is proven by fuel analysis.

This is the first time that any means of pro-actively managing diesel fuel quality in storage has ever been available to diesel consumers.

DIESELFIX and Water

DIESELFIX chemically converts water into a completely different liquid that is a fully combustible lubricant, which is non-corrosive, chemically inert with oxides of sulphur and nitrogen and, crucially, diesel soluble.

NB. This chemical change does not convert water into fuel. It does, however, produce a liquid that bears no similarity to water and is infinitely more compatible with diesel fuel and diesel-powered equipment. In this manner, all of the undesirable characteristics of diesel fuel, i.e. ageing, corrosion, gumming and acid formation are eliminated. The beneficial impact on equipment is greater than educated guesswork would calculate. The economic

benefits to commercial equipment operators is vastly more than the cost of using **DIESELFIX**.

DIESELFIX and Fuel Quality Management

For the first time, diesel consumers now have an effective means of managing the quality of their fuel in storage. Instead of bland generalities like “good housekeeping”, the use of DIESELFIX with every new delivery of fuel will prevent the deterioration of the fuel in storage.

“An ounce of prevention is worth a pound of cure”, is a saying that has never been more applicable to any situation. Eliminating the accumulation of water, rust and microbial “muck” at the bottom of fuel storage tanks and the total elimination of water-content in the fuel is the **only** means available for ensuring that fuel quality as delivered is maintained.

DIESELFIX and New Equipment Warranties

New vehicle warranties do not cover failures due to the use of sub-standard fuel. The warranty is fully applicable when fuel is used that conforms to the specifications of S.A.B.S. 342 and EN590. DIESELFIX, in its pure form, complies with all of the specifications of S.A.B.S. 342 and EN590. It is the only product of this nature in the world that does so.

Diesel fuel” is a generic term that applies to any liquid that can be used as fuel for diesel engines. DIESELFIX, therefore, is diesel fuel and not an “additive”. In most respects, it is superior to petroleum-based diesel, however used on it’s own, it is not financially viable. When used as an additive, however, DIESELFIX eliminates the process whereby diesel fuel deteriorates with age. It will also gently clean the fuel-injection system, dissolving resin build-up in pumps and injectors. Provided that the pump and injectors are not excessively worn and settings are correct, this will optimise fuel efficiency and eradicate the need for periodic servicing of the fuel system. **It converts fuel system maintenance from a periodic manual procedure into a full-time automatic function.**

The Acknowledged World Leader in Fuel Quality Management