



**PAMAS S40 Fuel**  
for on-site analysis



**PAMAS S40 GO Fuel**  
for on-site analysis in harsh environment



**PAMAS S50P Fuel**  
for online monitoring of fuel tanks



**PAMAS S50DP**  
for water-free online measurement of fuel

## **PAMAS Fuel Analysers** **Particle counters for Diesel, Petrol** **and DEF (Diesel Exhaust Fluid)**

# PAMAS Fuel Analysers

## Particle counters for Diesel, Petrol and DEF (Diesel Exhaust Fluid)



Contaminants in tank fluids may cause operation stoppage and wear-related machine failure. The risk for contamination is usually highest when fresh tank liquids are filled into vehicles, since new, unfiltered fuel which is freshly taken out of a barrel or a tanker, is often highly contaminated and contains too many solid contaminants. To ensure that vehicles filled up with pure, particle free fluids, the fluids are filtered and re-filtered until the required cleanliness level (e.g. as per ISO 4406) is achieved.



Among automotive tank fluids, there are fuel and the aqueous urea solution DEF (DEF stands for „Diesel Exhaust Fluid“). This fluid consists of 32.5% urea and otherwise mostly of deionized water. In Europe, the aqueous urea solution is commonly known as trademark AdBlue®. The common designation in North America is Diesel Exhaust Fluid (DEF). In vehicle technology, Diesel Exhaust Fluid is used to reduce the harmful emission of exhaust. The urea solution lowers the harmful Nitrogen oxides in the exhaust of Diesel engines. Besides the additional tank needed for the Diesel Exhaust Fluid, this reduction tech-

nique also requires a so-called SCR converter. SCR stands for „Selective Catalytic Reduction“. The SCR technique decreases harmful pollutants in Diesel truck engines. Diesel Exhaust Fluid is standardised as aqueous urea solution (AUS) in the specifications of ISO 22241 (Diesel engines - NOx reduction agent AUS 32). For safety reasons and in order to prevent any complications when the pollution decreasing fluid is sprayed into the exhaust, only high-purity urea and deionized water must be used for DEF production.



The filtration process of fuel or DEF can be monitored with the aid of an automatic particle counter. Depending on the application, analysis is done either with a portable unit or with an online device. Design and construction of the PAMAS S40 Fuel portable particle counter is adapted to the specific requirements of fuel tank analysis on site. Both online and batch sampling are possible with this instrument. For online sampling, the tank fluid is led through a bypass into the particle counter, so the fluid does not need to be refilled into another vessel. The PAMAS S40 GO Fuel portable particle counter is equip-

ped with a rugged case for the use in harsh environment. The PAMAS S50P Fuel online particle counter is used when vehicles tanks are permanently monitored. The instrument is integrated as fixed installation into the tank system. The construction of the PAMAS S50P Fuel is ideally designed for the analysis of low viscous tank fluids. The instrument's display shows the triple code cleanliness class as per ISO 4406. In some cases, fuel can contain free water. The water droplets in fuel would lead to false measurement in particle analysis, since the particle counter would interpret them as particles. In order to prevent false measurements, the PAMAS S50DP online particle analysing system is equipped with an integrated dilution system. The water droplets in the fuel sample are dispersed in the added dilution solvent and thus do not affect the posterior online measurement.

PAMAS particle counters have been tried and tested for the analysis of tank liquids. During filtration, they are ideal instruments for the quality control of fuel and Diesel Exhaust Fluid. The use of a PAMAS particle counter ensures that fuel or urea solution are highly pure and particle free before they are filled into the automotive tank.



Management System  
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