

Fully automated determination of TAN/TBN in oil samples

Metrohm presents the 864 Robotic Balance Sample Processor, an advanced system for fully automated TAN/TBN determinations in petroleum products. Capabilities include weighing, solvent addition, waiting times for complete dissolution and optimized electrode conditioning procedures between samples, as well as convenient collection of all data in a database. Results are available within minutes and even very low TAN/TBN values can be determined with reproducibilities better than 2%.

ASTM D 664 and ASTM D 2896 describe two methods for the determination of TAN and TBN based on potentiometric titration of the acidic and basic constituents, respectively. If carried out manually, these procedures are time-consuming and labor-intensive. Further drawbacks are the handling of toxic solvent mixtures and the tedious cleaning of oil-smearred beakers and electrodes.

All of this can be avoided with the 864 Robotic Balance Sample Processor, as it allows the complete automation of these procedures from sample preparation all the way to collecting and processing results in a comprehensive database. A unique feature of the system is the patented technique of weighing the sample directly on the rack. There is no simpler way to prepare a sample – just position it on the rack and press START, all other steps are carried out fully automatically. This includes taring of the titration beaker as well as transferring the correct amount of sample. This technique significantly improves the accuracy and reproducibility of results.

