Developed 40 years ago and still working

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An oil company showed us how long-lasting our titrators really are. 40 years ago, we at METTLER TOLEDO developed our first titrator. One of these original DV10/DK11 systems is still being used to determine bromine number at a refinery in Sisak. Ease of use combined with excellent quality was our primary focus for instrument development back then and remains so today.

The INA Group is a medium-sized European oil company, employing around 14,000 employees, with their headquarters in Zagreb. INA maintains 2 refineries in Croatia, one on the shore of Rijeka and the other in Sisak just 50 km south of Zagreb. The proximity to Zagreb is strategically important as the area around Zagreb has the highest energy consumption in the region.

The Sisak site produces around 2.2 million tons of oil and manufactures a variety of petroleum derivatives, such as diesel, bitumen, liquefied petroleum gas, heating oil, petrol coke and liquid sulphur mainly for the domestic market.

Quality control

For several years now, INA has produced gasoline and gas according to the Euro V European emission standard. The thorough testing of all materials in the process is, therefore, crucial.

The quality control lab follows ASTM standards for testing the raw materials (crude oil, chemical and additives), finished products and in-process materials (feedstock, semi-products and stored products). The QC lab is accredited according to EN ISO/IEC 17025.

Lucija Konjević, Senior Quality Control Engineer at the quality control laboratory in the Sisak refinery relies on several METTLER TOLEDO titrators (C20, DL28 and DL25) for these important tests. Fast and simple analyses and instrument durability were the main considerations when choosing METTLER TOLEDO as their supplier.

Surprising discovery

During a recent visit, one of our METTER TOLEDO service engineers, found a perfectly working DV10/DK11 Titration System. This was an exciting find as it was the first titrator developed by METTLER TOLEDO 40 years ago.

It was a surprise for our local sales specialist, "I was recently at the customer site for the C20 installation but nobody told me about this old-timer." It was never mentioned, because the DV10/DK11 Titration System had simply been running and perfectly fulfilling the customer's needs without any problems for years. The lab technician especially appreciates the instrument's ease of use.

The titrator was originally bought in 1981 to replace manual bromine number titration. This example proves the importance of ease of use combined with excellent quality and durability that were METTLR TOLEDO's primary focus 40 years ago and remain so essential up to the present day.

Figure 1:
Refinery at Sisak.

METTLER TOLEDO's first titrator

METTLER TOLEDO's first developed titrator system consisted of a DV10 unit. This is a digital burette with a stepping motor drive. Milliliters consumed are displayed on a four-digit display. At that time the system already offered a modular approach designed for system expansion with the DK11 and DK 14 units. The DK11 unit is used as an electrode amplifier and the DK14 defines test parameters, such as titration rate, end point potential and termination delay. These combined units make up METTLER TOLEDO's first automatic titrator.

Read more about METTLER TOLEDO's titration history at www.mt.com/titration-innovation

Figure 2:
Bromine number determination with the DV10/DK11 titrator system developed at METTLER TOLEDO 40 years ago.