

Automatic determination of the hydroxyl number (HN) according to ASTM E 1899-08 and DIN 53240-2

Metrohm presents a fully automated titrimetric method for the determination of the hydroxyl number according to ASTM E 1899-08 and DIN 53240-2. The hydroxyl number is defined as the mg of KOH equivalent to the hydroxyl content of 1 g of sample. The system used to carry out the test consists of: 814 USB Sample Processor, 905 Titrando, 800 Dosino, Solvotrode and the *tiamo*TM software.

The method suggested in **ASTM E 1899-08** is based on the reaction of the primary and secondary hydroxyl groups with excess toluene-4-sulfonyl-isocyanate (TSI) to form an acidic carbamate. The latter can then be titrated in a non-aqueous medium with the strong base tetrabutyl-ammonium hydroxide (TBAOH).

The method suggested in **DIN 53240-2** is based on the catalyzed acetylation of the hydroxyl group. After hydrolysis of the intermediate, the remaining acetic acid is titrated in a non-aqueous medium with alcoholic KOH solution.

The two methods allow, for example, the determination of polyols and oxoils without any tedious and time consuming sample preparation and is therefore a big benefit for laboratories that have to analyze a great number of these samples per day.

