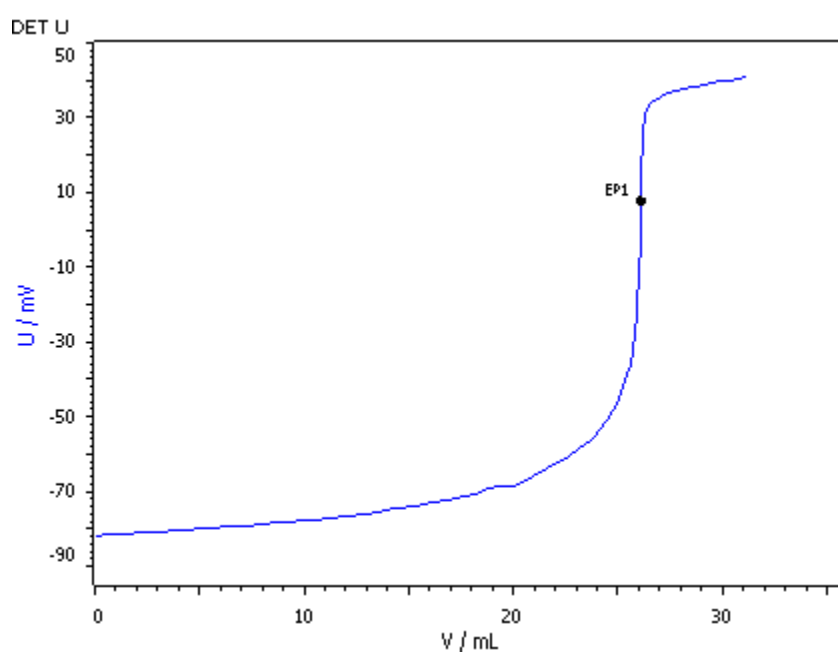


Titration Application Note T-110

# Automated determination of the peroxide value



This Application Note describes the automated determination of the peroxide value using the DIS-Cover technique.

# Method description

## Sample

Sunflower oil

Olive oil

## Sample preparation

No sample preparation required

## Configuration

815 Robotic USB Sample Processor XL (2T/OP)	2.815.0130
2 × 786 Swing Head	2.786.0040
905 Titrand	2.905.0010
7 × 800 Dosino	2.800.0010
Dosing Unit 5 mL	6.3032.150
Dosing Unit 10 mL	6.3032.210
3 × Dosing Unit 20 mL	6.3032.220
2 × Dosing Unit 50 mL	6.3032.250
802 Stirrer	2.802.0020
772 Pump Unit - aspirate	2.772.0120
823 Membrane Pump Unit «rinse»	2.823.0030
Titration head 6 × SGJ 14, 3 × SGJ 9 openings	6.1458.010
Robotic DIS-Cover	6.1462.080
Robotic arm with holder for titration head, right swinging	6.1462.070
Sample rack 28 × 250 mL	6.2041.820
Lid for 250 mL sample beaker	6.2037.060
Sample beaker 250 mL (brown glass)	6.1432.323
iPt Titrode	6.0471.300

## Solutions

Auxiliary solution	Saturated solution of KI.
Solvent mixture	Glacial acetic acid / 1-decanol with approximately 20 mg I <sub>2</sub> / L $\Phi$ (1-decanol) = 40% (v/v)
Titrant	c(Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ) = 0.001 mol/L If possible this solution should be bought from a supplier.

## Analysis

5 or 10 g sample (depending on the expected peroxide value) is weighed into a 250 mL brown glass beaker and placed onto the sample rack. 20 mL solvent mixture and 0.2 mL auxiliary solution are added and the beaker is closed with the DIS-Cover. After one minute, 80 mL dist. water is added and the solution is titrated with c(Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>) = 0.001 mol/L until the first end point.

A blank determination is performed the same way as the sample analysis.

## Parameters

Mode	DET U
Signal drift	20 mV/min
Min. waiting time	10 s
Max. waiting time	72 s
Meas. point. density	4
Min. increment	10 µL
Max. increment	200 µL
EP criterion	20
EP recognition	greatest

## Results

Sample (n = 10)	Mean peroxide value / (meq O <sub>2</sub> / kg)	s(rel) / %
Sunflower oil	8.162	1.52
Olive oil	15.464	1.35

## Comments

The method for determining the peroxide value was adapted from the norm DIN EN ISO 27107. The following change was made:

- a mixture of 1-decanol and glacial acetic acid was used as solvent instead of a mixture of isooctane and glacial acetic acid.

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