

# Corrosion potential of fuel ethanol



## Straightforward determination of pHe according to ASTM D6423 and EN 15490

**Excessive acidity in alcohol based fuels accelerates engine corrosion. Total Acid Number (TAN) accounts for all titratable acids regardless of their strength and is therefore not suitable to predict the corrosion potential. pHe, on the other hand measures the strength of the acids present in the sample. Therefore, pHe is the better parameter for manufacturers to ...**

- monitor the corrosion potential
- maintain the quality of their product
- and maximize profits.

### **How to measure: ASTM D6423 and EN 15490**

Measurement of pHe in ethanol and ethanol fuel blends is standardized according to ASTM D6423 and EN 15490. Application Notes describing the measurement of pHe are available free of charge from Metrohm.

### **Metrohm Application Note AN-T-173**

Determination of the pHe value of denatured ethanol fuel in accordance with ASTM D6423

### **Metrohm Application Note AN-T-183**

Ethanol as blending component for petrol – Determination of pHe according to EN 15490

# EtOH Trode – the preferred sensor for accurate, reproducible pHe measurements

Recommended by the ASTM standard

The design of the sensor is crucial for accurate pHe measurements. The ASTM standard recommends a high leak-rate sleeve junction reference electrode and a large membrane glass measuring electrode, as these perform best for measurements of alcohol fuels. The Metrohm EtOH Trode is one of two sensor **explicitly mentioned by ASTM D6432** as suitable for pHe measurements in ethanol and ethanol fuel blends.

## Benefits of the EtOH Trode

- **Full flexibility:** Double junction system allows the use of aqueous  $c(\text{KCl}) = 3 \text{ mol/L}$  (ASTM D6423) **or**  $c(\text{LiCl}) = 1 \text{ mol/L}$  in ethanol (EN 15490) as bridge electrolyte
- **Higher accuracy:** Fixed ground-joint diaphragm reducing the potential drift due to a constant electrolyte leak rate
- **More stable readings:** low-resistance membrane glass with large surface

## Ordering information

6.0269.100 EtOH-Trode



[www.metrohm.com](http://www.metrohm.com)

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