

TA 1000-0099D

Technical Instruction



Determining the initial pH value (ipH) for
waste lube oil as defined in TA 1000-0099B



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Purpose:

To standardise the method for determining the ipH value in the individual analytical laboratories in order to ensure comparability between the individual values and with our limit level.

Method: INNIO Jenbacher GmbH & Co OG

Reference: ASTM D 664, 7.15 - TITRATION SOLVENT

Requirement:

- Buffer parent solution A**
- Titration solvent
- pH glass electrodes manufactured by METROHM AG, HERISAU

Recipe:

Titration solvent: Toluol, water and isopropyl alcohol as described in ASTM D 664

Buffer parent solution A:**

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Weigh in 24.2 +/- 0.1 g of 2, 4, 6-TRIMETHYL PYRIDINE into a 1-litre flask filled with 100 ml of isopropyl alcohol.

Add 750 +/- 5 ml of 0, 2 normal alcoholic hydrochloric acid and fill with isopropanol up to 1000 ml.

The solution can be kept for 2 weeks at room temperature and 4 weeks at approx. 8°C (refrigerator).

Procedure:

The used-oil sample is heated to 60 +/- 5°C in its original container and shaken thoroughly so that all sediments are evenly distributed throughout the used oil.

5 g of the used-oil sample is dissolved in 125 ml of the (above-mentioned) titration solvent.

The electrodes are dipped into a non-aqueous buffer solution (= 10 ml of buffer parent solution A** and 100 ml titration solvent) in accordance with the relevant operating instructions, or are agitated in the buffer solution for approx. 5 minutes and the millivoltmeter is set to pH = 4.

The electrodes are then placed in the titration solution (see above: i.e. 5 g of used oil + 125 ml of titration solvent), agitated for approx. 5 minutes and then the initial pH value is read

Method: Mobil**Procedure:**

The pH meter must be calibrated before the pH value is measured. In order to do so, aqueous buffer solutions with a pH value of 4.0 and 7.0 are measured consecutively. If the calibration is performed using two points of reference, the relative rate-of-rise of the measuring chain can be determined. If this determination results in a value below 95%, the set-up of the measuring instruments must be checked to ascertain the source of the problem!

To determine the pH value of a used oil sample, 3.6 g of the sample is first mixed with 90 ml of solvent. To produce one litre of solvent, 500 ml toluol, 495 ml isopropanol and 5 ml of demineralised water are mixed thoroughly. This mixture corresponds to the solvent described in ASTM D664 (Standard Test Method for Acid Number Determination)I. The degree of purity described in this standard for the chemicals used must be adhered to in each case.

Once the weighed-in oil sample has been thoroughly mixed with the solvent, the pH value can be measured without further stirring. On completion of the measurement, the electrode should be cleaned with pure i-pH solvent. Oil residues must be removed completely. During the intervals between measurements, the electrode should be stored in slightly acidified (pH 3-4) demineralised water. In our experience, insufficient cleaning of the measuring electrode is the most frequent cause of faulty measurements.

1 Revision code**Revision history**

Index	Date	Description / Revision summary	Expert Auditor
5	30.04.2019	GE durch INNIO ersetzt / GE replaced by INNIO	Opoku <i>Pichler R.</i>
4	26.05.2015	Ergänzung „Klassifizierung – Potenzieller Kunde“ / Additional „Classification - Prospective Customers“	Bilek <i>Kelly</i>
3	05.11.2014	Hinweis zur Einhaltung der Bedingungen / Information on observing the conditions	Bilek <i>Lippert</i>

Revision history

2	06.09.2012	Ergänzung rechtlicher Hinweis / legal notice added	Provin Spieker
1	26.05.2010	Umstellung auf CMS / Change to Content Management System ersetzt / replaced Index: f	Schartner Giese

