Ford Motor Company

FORD LABORATORY TEST METHOD AK 107-01

QUANTITATIVE ANALYSIS OF CAUSTIC SODA OR CAUSTIC POTASH IN CLEANERS

Application

This test method is used to determine the percentage of sodium hydroxide (NaOH) or potassium hydroxide (KOH) in cleaners. The procedure is intended to be a simplified version of the applicable ASTM standard (e.g., D 501 or D 800) as well as being more appropriate for dealing with the many formulations of cleaners that are commonly encountered in plant operations.

Apparatus Required

Titration Apparatus

Steam Bath

Erlenmeyer Flasks
300 mL; 500 mL

Hot Plate

Funnel
Suitable for use with filter paper

Glass Rod

The above apparatus is available from any reputable laboratory equipment supply house.

Material Required

Methyl Alcohol
Reagent grade; CAUTION: Low flash point.

Hydrochloric Acid
Concentrated; Reagent grade; CAUTION: Corrosive

Filter Paper
Whatman No. 541

Date	Action	Revisions	
2001 01 22	Revised	Editorial – no technical change	A. Cockman
2000 03 23	Revised	Editorial – no technical change	A. Cockman
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Solutions Required

Hydrochloric Acid - 0.5 N

Phenolphthalein Indicator

Dissolve 0.2 g of phenolphthalein in 50 mL of ethyl alcohol and add 50 mL of distilled water.

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

1. Take a 2 to 3 g sample of the material in a 300 mL Erlenmeyer flask.
2. Add 40 to 50 mL of methyl alcohol.
3. Heat to boiling.
4. Remove from hot plate.
5. Stir, using a glass rod.
6. Decant through a Whatman No. 541 filter paper into a 500 mL Erlenmeyer flask.
7. Repeat steps 2 through 6 for a total of 5 extractions.
8. Wash the insolubles from the extraction flask onto the filter paper with hot alcohol (approximately 45 - 60 °C).
9. Wash the contents on the filter paper for a minimum of 5 times using hot alcohol. Collect all washings in the receiving flask.
10. The final washing shall be neutral to phenolphthalein.
11. Add phenolphthalein indicator to the recovered extract.
12. Titrate with 0.5 N hydrochloric acid to the colorless end point.

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