

KES

Analysis of Magnesium
Calcium and Barium
for Lubgicating Oils.

KES T – M057

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1. Scope of application

This standard shall prescribe method for quantitative analysis of annex, Mg, Ca, Ba, in new oils and used one.

2. Atom photometry (Solvent dilution)

2.1 Outline.

Method by which dilute sample to solvent to lower viscosity then by atom photometry quantitative of Mg

2.2 Reagent

- (1) Methyl iso butyl ketane
- (2) Xylene

2.3 Operation

- (1) Heat sample to $60 \pm 1^\circ\text{C}$ till mix completely then put regular sample to 100ml of measuring flask.
- (2) Dilute with mibk or ylene to scale to use as analysis sample.
- (3) As the same operation, treat MIBk or xylene instead of sample to make cipher sample.
- (4) With the same operation, measuring line prescribe standard sample.

2.4 Measurement

Analysis or Mg use air Oacutylene fuel gas at wave length 2852 Å.

2.5 Calculation

$$\text{Mg (\%)} = \frac{A - B}{S} \times 100$$

In this, A : Consistency Mg in sample

B : Consistency Mg in cipher sample

S : Amount of sample(g)

3. Adjusting

3.1 Outline

This method shall be applied to analysis method for quantitative analysis of annex, Mg, Ca, in new oils and used one.

3.2 Summary of method

Burn sample to dilute and after dissolving with HCl treat with surfate. If residual products remains, filter and burn sample with potassium pyrosulfate then dissolve with light surfate.

Next, adjust with DTPA solution to analyze Ca and Mg.

3.3 Equipment

- (1) pH meter
- (2) Magnetic stirrer
- (3) Pot : 30mℓ of capacity

3.4 Reagent and material.

- (1) Use first grade reagent and distilled water or ion water.
- (2) Eriochrome black T indicator(1%) : Blend indicator 0.1g with potassium chloride 10g to pulverize less than 40mesh and preserve.
- (3) Calcon indicator(1%) : Treat and preserve like 3.4(2)
- (4) Support solution (pH10) : Dissolve ammonium chloride 67.5g to water 200mℓ then with