

QUANTITATIVE ANALYSIS OF CHLORIDES IN CLEANERS**Application**

This test method is used to determine the percent chlorides in cleaners.

Apparatus Required**Hot Plate****Oven**

Mechanical convection: Must be capable of heating to 150 °C as well as maintaining 105 +/- 2 °C for 15 minutes.

Bunsen or Meeker Burner**Fritted Glass Crucible with a Glass Microfiber Filter**

A Gooch crucible may also be used. (Whatman No. 934-AH)

Analytical Balance

Precision +/- 0.1 mg

Beaker

250 mL

Watch Glass

Suitable for 250 mL beaker

Buret or Pipet**Suction Flask**

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

Materials Required**Nitric Acid**

Concentrated, reagent grade. Caution: Corrosive

Date	Action	Revisions
2001 01 22	Revised	Editorial – no technical change A. Cockman
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Page 1 of 4

Silver Nitrate

Reagent grade

Distilled or Deionized Water

20 micromhos/cm at 25 °C maximum conductivity (ASTM D 1125)

Solutions Required

Nitric Acid Solution

1:1

Nitric Acid Solution

1 % concentration (1 mL per 99 mL of distilled water)

Silver Nitrate Solution

10 % concentration

Silver Nitrate Solution

0.05 g/L

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

A. Gravimetric Method

1. Take a 0.5 or 1.0 g aliquot of the prepared 1 % solution of cleaner in a 250 mL beaker.
2. Dilute to 200 mL with distilled water.
3. Add 10.0 mL of 1:1 nitric acid and boil on hot plate for 15 minutes.
 - (a) If nitrites are present, an excess of nitric acid must be used.
 - (b) Boiling must also be used to drive off the fumes of NO₂.
 - (c) Cool solution after this boiling. This will eliminate loss of chloride due to a possible spattering.