

**SILICATE TO HYDROXIDE RATIO - HYDROPHILIC SEALER
FOR CONVERSION COATING****Application**

This procedure determines the silicate to hydroxide ratio of the hydrophilic sealer for the conversion coating of aluminum.

Apparatus Required**Buret**

50 mL; graduated to 0.1 mL

Erlenmeyer Flask

250 mL

Pipet**Graduated Cylinder**

100 mL

Analytical Balance

Precision 0.001 g; capacity 200 g

Bottle(s)

With stoppers, 1 L

Materials Required**Sodium Fluoride**

Reagent grade

Isopropyl Alcohol

Caution: Low flash point

Deionized or Distilled Water

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

Date	Action	Revisions
2001 01 31	Revised	Editorial – no technical change A. Cockman
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Solutions Required

Hydrochloric Acid

1 N (standardized to the nearest 0.001 N)

Sodium Hydroxide

1 N (standardized to the nearest 0.001 N)

Methyl Red Indicator

Dissolve 0.1 g of methyl red in 100 mL of methyl alcohol

Bromocresol Green Indicator

Dissolve 0.1 g of bromocresol green in 50 mL of isopropyl alcohol and dilute to 100 mL with distilled water

Methyl Orange Indicator

Dissolve 0.1 g of methyl orange in 100 mL of distilled water

Sodium Fluoride Slurry

Refer to Procedure section

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. Combine 50.0 mL of Methyl Red solution and 50.0 mL of Bromocresol Green. Note: It may be necessary to heat the solutions to assure that all the material is in solution prior to combining the solutions.
2. Prepare a neutralized sodium fluoride slurry by adding 100.0 g of sodium fluoride to 950 mL of distilled water in a 1 L bottle. Then add 2 to 3 mL of the Methyl Red/Bromocresol Green solution from step 1 and mix thoroughly.
3. Add 1 N hydrochloric acid to the sodium fluoride slurry from step 2 to obtain the gray/green color indicating neutrality.

Note: The pH of this solution may drift and therefore must be checked and adjusted, if necessary, for neutrality before each use.