

CONTROL TEST - CHROMATE ON PHOSPHATE COATED OR PLATED PARTS

Application

This method is used to check phosphate coated or plated parts for the presence of hexavalent chromate.

Chemicals and Apparatus Required

Diphenylcarbazide

1 % solution in ethyl alcohol.

Phosphoric Acid

4 % by volume

Distilled or Demineralised Water

Degreasing Reagent

(Carbon Tetrachloride or Petroleum Ether)

Kessler Tube

25 mm dia x 150 mm long.

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 sufficient number of parts in the "as used condition" to give a test surface area of 50 +/- 10 cm² (see BS 3382 1961, Parts 1 and 2).
2. Degrease the parts using carbon tetrachloride or petroleum ether to remove all traces of oil or grease.

Date	Action	Revisions
2001 01 31	Revised	Editorial – no technical change A. Cockman
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3. Suspend the parts in 200 mL of distilled or demineralised water at 100 °C and simmer for 5 minutes.
4. Remove parts from the water, cool to 23 +/- 2 °C, then three quarters fill a Kessler tube with this solution, add 5 mL of the 4 % phosphoric acid followed by 2 mL of the 1 % diphenylcarbazide solution. Shake and allow to stand for 5 minutes.
5. Run a blank test using the relevant solutions.
6. After allowing the test and blank solutions to stand for 5 minutes to develop a stable colour complex, compare the colours developed in the solutions against a white background.

Evaluation

No colour difference between blank and test solutions indicates absence of chromate.

Pale lilac to purple colouration in test solution indicates presence of chromate. Colour density is indicative of amount of chromate present.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.