

TECHNICAL DATA

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THIS CHEMICAL IS
FORMULATED FOR
WARNING INDUSTRIAL USE ONLY

Contact with skin or clothing or other improper handling or use of this product may result in bodily harm or other damage. Before using or mixing the contents with other substances, all labels applied to container, the applicable Technical Data Sheet and Material Safety Data Sheet should be read and specific instructions and precautions followed to assure correct use and personal safety.

FERRIC AMMONIUM OXALATE

INTRODUCTION

Ferric Ammonium Oxalate (F.A.O.) is a water soluble product used for the chemical absorption on anodised aluminium, producing a range of gold colours from light champagne hues to dark gold finishes. Tanks and fittings to be made from Stainless Steel or an appropriate acid resistant material.

OPERATING CONDITIONS

- After anodising & consequent rinsing
8 - 18 g/L of F.A.O. For Light Colourings:
18 - 30 g/L of F.A.O. For Dark Colourings:
- Water Quality: Preferably de-ionised water.
If water of this quality is not available an addition of oxalic acid of 2-5 g/l is required.
- Dyeing Temperature:
40 - 55°C
25 - 40°C (for the lighter colours)
- Dyeing Time:
0.5 - 30 min, depending on the shade required, but preferably 2-5 min.
- pH of the tank:
Between 4-5
To adjust down: oxalic acid
To adjust up: dilute ammonia, however the process and the reaction of the product with air and light will increase the pH so under normal operating conditions this should not be required.
- Relative concentration of oxalate: It has proved best to keep the percentage of oxalate between 100 - 150%. If this value is below 100%, an addition of oxalic acid is required to bring into range.

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STORAGE OF THE DYE SOLUTIONS

When not in use, the F.A.O. solution should be protected from light, air and heat as much as possible.

BATH MAINTENANCE

- 20ml filtered bath solution
- 100ml (approx.) D.I. water
- 10ml 20% Sulphuric Acid heat to 50 - 60°C with stirring
- Titrate with 0.2N Potassium Permanganate to a permanent faint pink Record as titre A.
- Add 20ml of Buffer solution
- 1ml Indicator Solution
- Titrate with 0.1 M. EDTA until the red colour disappears.
- Record titre as B.

CALCULATIONS:

F.A.O. Concentration: $6.50 \times B$ in g/L
% Oxalate concentration: $33.3 \times A/B$

REAGENTS:

0.2 N KMnO_4 (Potassium Permanganate)
6.32g in 1000ml
EDTA (Ethylene Diamine Tetra Acetic Acid)
37.2g in 1000 ml
Indicator solution: 20g Sulphosalicylic Acid (M.W. 254.2)
are dissolved in 100ml D.I. water
Buffer solution: 164g Anhydrous sodium acetate (M.W. 82)
and 100g Chloroacetic acid (M.W. 94.5) are dissolved in D.I. water and
diluted to 1000ml in a volumetric flask.
Sulphuric Acid - 20%

SAFETY

Normal good industrial practice should be observed using this product. Gloves, goggles dust mask. Refer to Material Safety Data Sheet for further information.