

TECHNICAL DATA

AUSTRALIAN CHEMICALS & COATINGS PTY LTD

ABN 92 884 104 142



69 Quantum Close,
Dandenong South
Vic 3175

Ph: (61 3) 9799 9833

Fax: (61 3) 9799 9033

NSW Ph: (61 2) 9737 9772

QLD Ph: (61 7) 3865 5787

Email: sales@auschem.com.au

Website: www.auschem.com.au

THIS CHEMICAL IS
FORMULATED FOR
INDUSTRIAL USE ONLY

WARNING

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.

AUSEAL CS 2 PACK

LIQUID CHEMICALS FOR COLD SEAL PROCESS

INTRODUCTION

AUSEAL N & F is a liquid (two pack) Cold Seal for the use of sealing anodised aluminium for both natural and electrolytic coloured finishes.

NEW TANK SOLUTION MAKE UP

AUSEAL N : 20mL/L

AUSEAL F : 10mL/L

The process requires two liquid chemicals:

AUSEAL N – containing Ni⁺⁺

AUSEAL F – containing F⁻

This allows dosing separately according to necessity, however in general production processing the additions should be made based on the Nickel concentration with additions of both Auseal N & Auseal F at the ratio of 1:1

OPERATING CONDITIONS

AUSEAL N : 18 – 24 g/L

AUSEAL F : 300 – 900mg/L (Optimum 600mg/L)

pH - 5.5-6.5 (optimum 6.0)

TEMPERATURE - 25 - 30 °C

DIPPING TIME - 0.8-1.0 min/micron

Deionized water is suggested for the makeup of the new solution and for the rinses before and after the sealing process.

A second step is a warm rinse solution 50-60°C (according to Euras Qualanod recommendations) which increases the pore sealing and permits a quality control with one of the conventional methods. (e.g. ISO 2143) after a short time (2-4 hours).

The use of a filter pump is also advised in case of turbidity of the solution due to, accidental causes, or excessive contamination by extraneous ions.

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The solution is never dumped and may be maintained clear by (random) filtration and the correct concentration by analysis and proper additions.

Using a suitable apparatus, additions are made by dosing pumps according to the actual necessity and the amount of anodized aluminium.

ANALYTICAL METHOD

NICKEL CONCENTRATION

Reagents

EDTA 0.01 M solution

Murexide, as indicator (99g of NaCl + 1g of pure murexide ground in a mortar)

pH buffer solution (dissolve 54 g ammonium chloride in 350 ml concentrated ammonia solution in 1 litre of distilled water, pH 10)

Procedure

- About 100ml of distilled water
- 10ml of bath solution
- 5 ml buffer solution
- A very small amount of murexide, as indicator
- Titrate with 0.01 EDTA solution until a persistent violet colour appears. Recording "A" as the ml of titrate.

Calculation

$$A \times 1.32 = \text{g/L AUSEAL N}$$

pH

pH corrections are made according to readings obtained and the usual correction is to reduce the pH. The correct pH adjusting solutions should be used. These solutions are: 'pH correction down' and 'pH correction up' (only if required).

FLUORIDE CONCENTRATION

Analysis of Fluoride Ion, using the F⁻ ion sensitive electrode:

Prepare the calibration curve, using the following indication:

Preparation of 10,000ppm solution of F (Solution A):

Dissolve 30.58 g of Potassium Fluoride anhydrous (KF) in 1 litre of distilled water.

Preparation of 2g/Ni solution (Solution B):

Dissolve 44.4 g of Nickel Acetate in 5 litres of distilled water.

Preparation of standard solutions:

100 ppm: dilute 5ml of Solution A in 500ml volumetric flask with Solution B

200 ppm: dilute 10ml of Solution A in 500ml volumetric flask with Solution B

300 ppm: dilute 15ml of Solution A in 500ml volumetric flask with Solution B

400 ppm: dilute 20ml of Solution A in 500ml volumetric flask with Solution B

500 ppm: dilute 25ml of Solution A in 500ml volumetric flask with Solution B

600 ppm: dilute 30ml of Solution A in 500ml volumetric flask with Solution B

800 ppm: dilute 40ml of Solution A in 500ml volumetric flask with Solution B

1000 ppm: dilute 50ml of Solution A in 500ml volumetric flask with Solution B

Prepare the calibration curve using the mV (millivolt) read by means of the probe VS. the concentration as ppm F^- on a semi-logarithmic paper.

The analysis of the bath sample is made by dipping the probe into a portion of cooled solution and by reading mVs by means of the calibration curve, the mVs are transformed into concentration as F- ppm

Advised F ion concentration 600ppm.

STORAGE

It is good management practice to keep all chemicals in a locked weatherproof area to control access of unauthorised persons and protection from the elements.

For further information on AUSEAL CS or any other products and equipment available to the Surface Finisher and Aluminium Industry, please contact the Technical Department of AUSTRALIAN CHEMICALS AND COATINGS PTY LTD.