SUPERFOS CM

Issue 3

TECHNICAL DATA SHEET

Description

Superfos CM is an acidic, calcium modified phosphating chemical with an S.G. of 1.38. Superfos CM when used in conjunction with FOSAID (a nitrite accelerator) provides a means to apply a fine dense crystalline zinc phosphate coating by immersion process prior to decorative finishing. Superfos CM is designed for the treatment of iron, steel and zinc, providing a suitable base for all types of paint.

The Control of Substances Hazardous to Health regulations 2002 (COSHH)

For a safety data sheet on this product please contact Cambrian Solvents by telephone, or by e-mail at lab@cambriansolvents.co.uk

Instructions for use

All metal to be processed must be free from grease, oil, rust, loose scale or other foreign matter.

Initial make-up – 20 Points Total Acid Working Solution

Superfos CM	47kg	34 litres
FOSAID	0.5kg	0.4 litres
Water	Up to 1000 litres	Up to 1000 litres

Pointage:	19 - 23 Points Total Acid
Temperature:	60 - 70°C
Time:	5 - 15 minutes

Control

The bath is controlled by three determinants:

1. The Total Acid. This should be maintained at a suitable pointage to produce the required coating weight.

   Take a 10ml sample from the Superfos CM bath. Titrate against 0.1N Sodium Hydroxide solution using Phenolphthalein indicator to the colourless to pink end point. Each ml of Sodium Hydroxide required represents 1 point of Total Acid. For each point below the desired pointage add 2.4kg of Superfos CMR per 1000 litres of working solution.

2. The Free Acid. Under conditions where excessive physical losses occur it may be necessary to adjust the Free acid separately.

   Repeat the titration for Total acid but replace the indicator to use Bromophenol Blue to the green-blue end point. Each ml of Sodium Hydroxide represents 1 point of Free Acid.

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3. The Accelerator Content. (FOSAID)

   By means of starch iodide paper, determine the presence of an oxidising agent. If this absent, add small quantities of FOSAID until the paper turns blue, then proceed as follows:

   Take a 50ml sample of the Superfos CM bath, acidify with 10ml of 50% Phosphoric Acid. Titrate with 0.1N Potassium Permanganate to a permanent pink end point lasting 15 seconds. Each ml of Potassium Permanganate required is considered 1 point.

   Adjust the pointage to be within the range 1-3 by adding 190ml of FOSAID per 1000 litres of working solution for every point required.

Equipment

Heavy gauge mild steel is adequate for tank construction, however, 316 grade stainless steel is preferable due to the longevity it offers. Immersion heaters, pipework, standpipes and nozzles should be stainless steel 316 grade.