The Print Works 35a Dane Road
Coventry CV2 4JR
United Kingdom.
Tel +44(0)2475 090 133 Fax +44(0)2475 090 139
sales@pretreatmentsolutions.com
www.pretreatmentsolutions.com

PHOS-PREP®

Experts in non Chrome Preparations

TECHNICAL DATA SHEET

PHOS-PREP® PP984 TRI-CATIONIC PHOSPHATE

INTRODUCTION

PHOS-PREP® PP984 phosphate has been specially formulated to produce phosphate coatings on steel, zinc and aluminium surfaces prior to powder coating, wet painting, and Anodic and Cathodic (E Coat) processes.

The PHOS-PREP® PP984 solution produces a medium weight uniform zinc phosphate conversion coating which gives excellent adhesion and flexibility whilst providing salt spray, detergent and humidity resistance after painting.

PHOS-PREP® PP984 is supplied as a single pack liquid system and is suitable for both spray and immersion processes. Additive packs are available for the system the use of which are advised for processing aluminium alloys and when acidity regulation is necessary.

Operating the PHOS-PREP® PP984 will produce uniform phosphate coatings, with coating weights of between 1 and 5 g/m^2, assuming uniform processing conditions.

The PHOS-PREP® PP 984 will offer performance > 1000 hrs on subsequent paint applications in compliance to BS117 Neutral Salt Spray testing.

EQUIPMENT

The recommended material of tanks, pipe work, pumps, heater tubes and elements, should ideally be constructed from 316 Grade Stainless Steel or a suitable plastic including GRP.

Spray nozzles should be constructed from 316 Grade Stainless Steel or a suitable plastic.

The Print Works 35a Dane Road
Coventry CV2 4JR
United Kingdom.
Tel +44(0)2475 090 133 Fax +44(0)2475 090 139
sales@pretreatmentsolutions.com
www.pretreatmentsolutions.com

PHOS-PREP®

Experts in non Chrome Preparations

PROCESS

Appropriate chemical treatment ahead of PHOS-PREP® PP984 depends on the condition of the metal to be processed, but adequate cleaning and etching is recommended, so as to remove all dirt and grease and sufficient metal to comply with any required process standard. Any smut formed during etching should be removed.

For galvanised work, any white rust or oil should be removed in a cleaner, freshly galvanised material may be treated with PHOS-PREP® PP984 with no intermediate stage.

Fill the process tank to approximately 60% of its working volume with clean water and heat to approximately 50^0C

Add the required quantity of PHOS-PREP® PP 984 then top up to the working volume ensuring that solution is thoroughly mixed. Heat the solution to the recommended operating temperature.

Example of a typical process

1. PHOS-PREP® PP 934
2. Rinse.
3. Activation
4. PHOS-PREP® PP 984
5. Rinse.
6. Rinse.
7. PHOS-PREP® PP 973 Chrome free seal. (If required)

For use in an E Coat line please use a De-Ionised water rinse following process # 5 and continue with existing process.

The Print Works 35a Dane Road
Coventry CV2 4JR
United Kingdom.
Tel +44(0)2475 090 133 Fax +44(0)2475 090 139
sales@pretreatmentsolutions.com
www.pretreatmentsolutions.com

PHOS-PREP®

Experts in non Chrome Preparations

Operating Parameters.

METHOD OF APPLICATION	SPRAY	IMMERSION
Total Acid Pointage (TA)	10 to 15pts	15 to 20pts
Free Acid Pointage (FA)	0.8 to 2.0	0.8 to 2.5pts
Operating Temperature.	45 to 65^{0}C	65 to 80^{0}C
Dwell Time.	30 to 120secs	5 to 15mins
Total Acid : Free Acid	> 8:1	> 7:1

Operating the PHOS-PREP® PP984 within the parameters given above should produce uniform phosphate coatings, with coating weights of between 1 and 5 g/m^2, assuming uniform processing conditions.

The PHOS-PREP® PP984 solution should be regularly analysed to determine the total acid pointage. The total acid pointage is maintained by adding P129 concentrate where 10 ml per litre of PP984 will raise the pointage by 5 to 7.

Periodically the free acid of the solution should be analysed and the total to free acid ratio calculated.

This should be greater than 7:1 for immersion processes and greater than 8:1 for spray processes. If necessary the total to free acid ratio can be adjusted by calculated additions of PHOS-PREP® PP DM1 sodium hydroxide, but is generally maintained by the additions of the PP984.

LABORATORY TESTING

EQUIPMENT AND REAGENTS.

25/50ml Burette.	0.1 Normal Sodium Hydroxide.
10ml Pipette.	Phenolphthalein Indicator.
250ml Conical Flask	Bromo phenol Blue Indicator.

The bath is controlled by testing the acidity.

ANALYSIS OF TOTAL ACID.

Pipette 10mls of working bath into Conical Flask. Add 50 mls of deionised water and 5 to 6 drops of phenolphthalein indicator. Titrate against 0.1N Sodium Hydroxide from clear to a pink end point.

TITRE = TOTAL ACID POINTAGE.

ANALYSIS OF FREE ACID.

Pipette 10mls of working bath into Conical Flask. Add 50mls of deionised water and 5 to 6 drops of bromo phenol blue indicator. Titrate against 0.1N Sodium Hydroxide from yellow to a blue end point.

TITRE = FREE ACID POINTAGE.

GENERAL MAINTENANCE.

To maintain satisfactory performance of the PHOS-PREP® PP984 solution when spraying it is important that sufficient volume of the solution is sprayed onto the work whilst it passes through the phosphate zone. It is therefore advisable to adopt an inspection and cleaning schedule to ensure that no blocking or partial blocking of nozzles occurs.

As a by-product of the phosphate reaction, some insoluble residue will be formed which settles to the bottom of the process tank. This residue should be removed periodically before its presence results in dusting of the coatings or interferes with the spray system. Residue is removed by decanting the phosphate solution into a spare or empty rinse tank, sludge is removed whilst it is in a semi liquid state before it is allowed to dry out. Alternatively filtration methods may be employed.

Product Safety Data Sheet – A safety data sheet is available

PHOS-PREP® PP 984 is part of Pre-Treatments Ltd range of products for the treatments of iron, steel & aluminium and aluminium alloys at low temperatures.

Pre – Treatment Solutions ltd continues to improve the quality and performance of the PHOS-PREP® range of products and reserves the right to modify product formulations without prior notice