

# PMD ALCHROMATE

## INTRODUCTION

PMD Alchromate is a chromate conversion process for aluminium and its alloys. The self coloured film offers protection for subsequent painting or powder coating and is applied by simple immersion or spraying techniques using the diluted material.

## APPROVALS

Approved to M.O.D. Specification DEF STAN 03-18/1. Conforms to MIL-C-5541 (Chemical Films and chemical film material for aluminium and aluminium alloys).

## FEATURES AND BENEFITS

1. Golden yellow iridescent conversion coating.
2. Good corrosion resistance.
3. Promotes excellent paint and powder adhesion and will withstand normal stoving temperatures after coating.
4. Self-healing properties: if the film is scratched, the hexavalent chromium is leached when in contact with moisture thus reforming the film.
5. Very low electrical contact resistance.
6. The film does not inhibit spot, seam or resistance welding.
7. The solution is easy to operate using simple dip or spraying techniques.
8. Short process times.
9. Does not contain cyanide in any form.
10. Supplied as a concentrate which is simply diluted before use making the process very economical to operate, with low material and labour costs.

## APPLICATIONS

1. With its good corrosion resistance and excellent paint adhesion properties, PMD Alchromate is ideal for aircraft components, window frames, cladding, struts, radar equipment including spun dishes etc.



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**EQUIPMENT**

Tanks	Stainless steel, PVC, moulded polyethylene, polypropylene or mild steel lined with neoprene or one of the polymers above.
Heating	A thermostatically controlled stainless steel or PTFE electric immersion heater, steam coil or water jacket may be used.
Spraying	Commercial spray guns constructed of stainless steel are suitable for hand spraying. Fixed plant should have stainless steel jets with PVC or ABS risers and pipework and stainless steel or GRP tunnel area.

**INSTALLATION**

Equipment to be used for PMD Alchromate should be cleaned thoroughly before any product is added.

1. Fill the clean empty equipment with the appropriate amount of water.
2. Add the required amount of PMD Alchromate Concentrate and mix thoroughly.
3. Heat to operating temperature.

**PROCESS SEQUENCE**

1. Clean using a mild cleaner such as PMD 707 or PMD 505 Cleaner.
2. Rinse.
3. Alkaline etch, if required, using PMD 606 Cleaner or PMD 607 Cleaner.
4. Rinse.
5. De-smut, if required, using PMD Alchromate Pre-Dip.
6. Rinse.
7. PMD Alchromate
8. Rinse (Drag out).
9. Rinse
10. Dry in warm air, maximum 50 °C.
11. Where applicable, apply the appropriate coating as soon as possible.

## MAINTENANCE AND CONTROL

The solution should be regularly analysed for concentration and replenished as necessary.

Evaporation losses should be replaced using water. Concentration losses should be replaced with PMD Alchromate Concentrate.

Routine additions will normally maintain the pH within the specified range. If it becomes necessary to adjust the pH dilute ammonia solution or dilute nitric acid may be used. If in any doubt, contact PMD (UK) Ltd, Technical Department.

## ANALYSIS METHOD

### REAGENTS

50% v/v sulphuric acid

0.1N ferrous ammonium sulphate (Standard Volumetric Solution.)

0.1N potassium permanganate (Standard Volumetric Solution.)

### METHOD

1. Pipette a 10ml sample of the working solution into a 250ml conical flask.
2. Add approximately 150ml of deionised water and mix well.
3. Add 20ml of 50% v/v sulphuric acid, mix well.
4. Cover the flask and boil for 10 minutes.
5. Cool the flask.
6. Pipette 25ml of 0.1N ferrous ammonium sulphate into the flask and mix well.
7. Titrate with 0.1N potassium permanganate to a pink end point.
8. Record titre = t mls.

### CALCULATION

$(25-t) \times 0.81 = \% \text{ v/v Alchromate Concentrate.}$

### ADDITIONS

For every 1% drop in concentration, add 10ml/l of PMD Alchromate Concentrate.

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**NOTES**

Brush Application - Only recommended for touch-up. Use only in a contained hose down area or wet workshop. PMD Alchromate can be applied by means of a synthetic sponge or nylon brush at a strength dependent on application. Clean the area with a mild alkaline cleaner and rinse until uniformly wetted. Brush or swab on for 3 to 30 minutes until a satisfactory coating is obtained. Wash down thoroughly, especially areas where the solution may have run and collected.

**DISPOSAL**

Dispose of in accordance with local authority requirements.

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**PRODUCT FAMILIES**

The following products or families of products are referred to in this data sheet.

<u>Product Name</u>	<u>Product Number</u>
PMD Alchromate Concentrate	237003
PMD 505 Cleaner	206001
PMD 606 Cleaner	206002
PMD 607 Cleaner	206031
PMD 707 Cleaner	205003
PMD Alchromate Pre-Dip	237004

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