

TECHNICAL DATA SHEET

BONDERITE M-CR 1200S AERO**Chromium Conversion Coating**

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| Description | A chemical powder which when dissolved in water, will impart an iridescent, golden chromate protective coating to aluminium and aluminium alloys. |
| Features | <ul style="list-style-type: none">• Excellent corrosion protection with or without paint.• Excellent paint or powder adhesion.• Contains powerful accelerators to enhance the chromate coating of more difficult aluminium alloy surfaces, to counter mild alkali carry-in and allow shorter treatment times.• Designed for application by dipping, brush or spray.• A very rapid non-electrolytic chromate conversion treatment.• Produces attractive golden coatings on all aluminium surfaces.• Operates at ambient temperatures without heating costs.• The coating has low electrical resistance (less than 5K micro-ohms/in²).• Can treat high silicon castings after simple degreasing.• Can repair damaged anodic coatings and restore paint adhesion to aged ones. |
| Complies With | MIL-DTL 5541, MIL-C5541/QPL-C-81706, DTD900/4413 and Boeing Spec. BAC 5719. |
| Product Code | MP0116. |
| SG | 1.32 ± 0.1 kg/l at 20°C. |
| Coverage | The rate of consumption will depend on the coating weight obtained and drag-out losses. As a guide, the following range has proved reliable: DIP: 300 – 400 m ² /kg of mixed material. |
| Equipment | The tank and water rinse tanks should be acid resistant, and made of polypropylene (recommended), stainless steel or rigid PVC. The tank should be sited in a well-ventilated area. |
| Application | All surface contamination must be removed and surfaces must be clean and oxide free. Normally the process sequence is: <ol style="list-style-type: none">1. Degrease, if necessary, using T Cleaner 70 (MP0035)2. Cold water rinse.3. Residual surface oxides should be removed using either:<ol style="list-style-type: none">a. T Cleaner 79 (MP0019) Alkaline etch, orb. Alukleen (MILL/ALU) Acidic etch.4. Cold water rinse to remove deoxidisers.5. Dip in Bonderite M-CR 1200S for 30 sec – 3 min at 15° – 30°C.6. Rinse – normally in 2 stages (see Rinsing below).7. Dry off (see Force Drying below). |

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Notes on Application:

- (i) On certain lightly oxidised surfaces and high-silicon die castings, Bonderite M-CR 1200S can give satisfactory coatings without Deoxidiser treatment, provided the pH is reduced down to a limit of 1.3. Carefully add, in increments, up to 2 litres of nitric acid (70%) per 1000 litres, with stirring to reduce the pH, checking results after each addition.
- (ii) On similar, but less difficult surfaces, than those in (i) above, a satisfactory coating may be obtained more simply by increasing the bath strength in increments of 2.5 kilos of Bonderite M-CR 1200S per 1000 litres up to a further 7.5 kilos and continuing to operate at this strength i.e. up to a titration of 12 ml.
- (iii) With these increased activity baths in (i) and (ii) above, the treatment time may need to be reduced to as little as 30 sec. to avoid excessive treatment.

Initial Fill Fill the bath with water, and for every 1000 litres of bath, add 7.5 kilos of Bonderite M-CR 1200S, and stir until dissolved.

| Control Points | Normal | High Acidity | High Strength |
|----------------|-----------|----------------|---------------|
| Pointage | 5 - 7 ml | 5 - 7 ml | 8 - 12 ml |
| Acidity (pH) | 1.6 - 1.8 | 1.3 - 1.6 | 1.6 - 1.8 |
| Temperature | 18 - 27°C | 18 - 27°C | 18 - 27°C |
| Time | 2 - 3 min | 30 sec - 2 min | 1 - 3 min. |

Analytic Control The bath is primarily controlled by a Pointage Titration done routinely according to usage and after the bath has been brought to its normal level with water. A pH measurement is important especially if there can be acid or alkali carry-in, or work is treated without a Deoxidiser.

1. Pointage Titration: measure 5 ml of the bath into a flask and dilute to about 100 ml with water. Add approximately 1 g of Potassium Iodide and approximately 10 ml of concentrated hydrochloric acid and agitate until dissolved. Titrate with 0.1 M sodium thiosulphate to a pale straw colour, then add approximately 0.5 g of Iodine Indicator and continue the titration until the colourless end-point is achieved.

Replenishment: Add 1.3 kg of Bonderite M-CR 1200S per 1000 litres of bath for each ml. the titration is below the originally selected concentration.

2. Acidity (pH): measure the pH of the bath with an accurate and reliable meter after replenishing with Bonderite M-CR 1200S. To lower the pH, very carefully add 200 ml concentrated nitric acid for each 1000 litres of bath and re-check.

NOTE: Where the pH rises or falls due to drag-in of alkali or acid, improve the rinsing immediately and correct the rising pH with nitric acid as above; or, if falling, 100 g additions of caustic soda (sodium hydroxide) carefully pre-dissolved in cold water.

A Test Kit **MP0603** containing all the necessary items and replacement chemicals is available from Trimite.

Rinsing Rinse the work thoroughly in water in a tank fitted with a weir and continuously overflowed with mains water. This water can be used, if desired, to overflow the rinse tank after deoxidising or aqueous cleaning. A second rinse, preferably using demineralised water and T Rinse 10 (**MP0016**), could improve the rinsing standard and help drying the work. This rinse is not overflowed, and should be changed regularly.

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| Force Drying | For best results work should be dried in an indirect-fired oven no hotter than 60°. |
| Maintenance | Bonderite M-CR 1200S forms no appreciable sludge, but the surface should be skimmed occasionally, to remove any dust or oil released from blind holes, etc. |
| Shelf Life | For best before date, see label. |
| Storage | The product should be stored in cool, dry, frost-free conditions, in sealed containers. |
| Health & Safety | Refer to the product's Safety Data Sheet and safety advice on the product label before use. |
| Technical Support | For technical support in using this product, please contact: e: birminghamtech@trimite.com , or t: 0121 554 7000. |
| Date of Issue | Oct 2023. |

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