M1009B

NO. CA 380

COMMONWEALTH AIRCRAFT CORPORATION LIMITED

MELBOURNE VICTORIA

MATERIAL SPECIFICATION

TITLE

BARIUM CHROMATE SEALING COMPOUND

ISSUE	DATE	APPROVAL				
		WRITTEN.	C.A.C.	R.A.A.F.		
C	3/02/82	W. ZUZIC				

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1. DESCRIPTION

This compound is used to minimise electrolytic and fretting corrosion between two dissimilar metals. One coat of zinc chromate primer is usually applied to the metallic surfaces before applying the barium chromate compound.

The compound shall be free of lumps or grit and shall give a uniform film when applied to a smooth metal surface.

2. COMPOSITION

The compound shall consist of a water repellent oil varnish, medium pigmented with a mixture consisting of 50-60% Barium Chromate and the remainder kaolin.

The settling volume of the kaolin is approximately 20%

3. APPROVED C.A.C. MANUFACTURED PRODUCT.

A product is made in the materials and process engineering development laboratory, using components which meet all the requirements of this specification.

The product has been called "D.L. variant No. 899-09265"

This product, subject to conformance to specified control checks is approved for use under this specification number.

4. APPROVED ALTERNATIVE SPECIFICATION

U.K. Ministry of Supply Specification DTD 369 (latest issue) pigmented varnish jointing compound

Note: The settling properties of the Kaolin used in DTD 369 are 30% minimum.

Note: Chromium content to be altered.

5. PROPERTIES

5.1 Barium Chromate

The barium chromate when tested in accordance with Appendix "A" shall contain a minimum of 33% chromium.

5.2 Kaolin

The kaolin shall comply with the requirements of Australian standard specification No. K-25-1927

5.3 Viscosity

The viscosity of the compound shall be 50-100 poises at 20°C.

5.4 Rate of Drying

A film of the material applied at not more than 2.5 ozs per square yard on a clean smooth metal panel, when allowed to remain under the conditions specified as AS K41, method 101.1 standard drying conditions, shall remain tacky to the finger for at least 4 hours.

5.5 Flexibility and adhesion

A film of the material prepared and tested as described in Appendix "B" shall not become detached or damaged.

5.6 Protection Against Sea Water

The protection against sea water of a film of material prepared and tested as described in Appendix "C" shall be such that no flaking, change of colour, blistering or corrosion shall occur.

5.7 Keeping Qualities

The keeping qualities of the compound shall be such that when stored in the original sealed container it will, after delivery, substantially retain the properties specified above for not less than 12 months in a temperate climate and for not less than 6 months in a tropical climate.

5.8 Volatile Matter

The volatile matter content of the pigment shall not exceed 1.0% when determined in accordance with Appendix "A"

5.9 Water Soluble Matter

The water soluble matter content of the pigment shall not exceed 0.5% when tested in accordance with Appendix "A".

6. QUALITY

Quality Control shall ensure compliance with the requirements of this specification.

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APPENDIX "A"

SPECIFICATION FOR BARIUM CHROMATE PIGMENT

1. DESCRIPTION

The barium chromate shall be chemically prepared pigment of low tinctorial strength. It shall be in the form of a fine powder, uniform and free from visible impurities. The chromate content expressed as CrO_3 shall comply with clause 5.1 when determined in the following manner:-

A known weight of the pigment shall be fused with anhydrous sodium carbonate, the fused mass extracted with warm water and the chromium determined volumetrically in the filtrate.

2. Volatile Matter

Two grams of the pigment spread out in a thin layer shall be heated for two hours in a boiling water oven after which the resulting loss in weight shall be determined.

3. Water Soluble Matter

Five grams of the pigment shall be boiled for 5 minutes with 200 ml of distilled water. The mixture shall then be cooled to room temperature, made up to 250 ml and filtered. After rejection of the first portion, an aliquot portion of the filtrate shall be evaporated to dryness and the residue dried to a constant weight in a boiling water oven.

Additionally the filtrate when tested with Ba Cl_2 solution shall give no precipitate and when tested with Ag NO_3 solution containing HNO_3 shall be free from turbidity.

APPENDIX "B"

METHOD FOR THE DETERMINATION OF FLEXIBILITY AND ADHESION

A 4" x 2" tinplate panel (AS K41 - method 104.1) shall be coated with the compound to produce a dry film weight of 2.0 - 2.5 ozs per square yard. It shall then be treated for 7 days to daily stoving for 6 hours at 70°C and immersion in sea water for the remainder of the time. It shall then be submitted to the bench test described in AS K41 - method 402.1

APPENDIX "C"

METHOD FOR THE DETERMINATION OF PROTECTION AGAINST SEA WATER

A 6" x 4" panel of smooth clean mild steel (AS K41 method 104.1) shall be coated with the compound to give a dry film weight of 2.0 - 2.5 ozs per square yard.

After drying at 50^{o}for 8 hours the panel shall be partially immersed in sea water for three days.