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*Patent Pending

Description and Uses

Alseal 220I is a single-component, chrome-free coating composition formulated for protecting ferrous alloys from both high temperature heat oxidation and at the same time offer sacrificial (cathodic) protection to the base metal. Because of its high temperature capabilities, it offers excellent protection when exposed to cyclic high temperature and corrosive salt environments, continuing to provide sacrificial properties at temperatures to 1150°F. Although an inorganic coating, it combines thermal stability, excellent adhesion and hardness, along with good flexibility... a property not found in most inorganic coatings. As mentioned above it offers salt corrosive protection to 1150°F. At about 1200°F. the

aluminum oxidizes to a point where it no longer provides its excellent sacrificial

properties, however, it will continue to offer excellent heat oxidation continuously to 1600°F.

Further, the coating formed from Alseal 220I composition offers superb thermal shock resistance. The coated metal will not crack, spall, or fail after shocking from 1100°F. to room temperature repeatedly.

Alseal 220I coating composition offers greater protective properties in combination of heat, weathering, corrosion, and oxidation resistance than organic paints and is lighter in weight and more flexible than most ceramic coatings.

Technical Data

Volume Solids:	27%
Weight Solids:	51%
Number of Coats:	Dependent on application.
Film Thickness:	2 mils DFT unless otherwise specified two coats required for 2 mils.
Theoretical Coverage @ 2 mils DFT:	320 sq. ft./gallon
Dry Time @ 75°F., 50% R.H.:	To touch - 20 minutes
Prebake Oven Time @ 175°F.:	15 minutes minimum
Cure Temperature 650°F. Preferred:	30 minutes minimum
Thinner:	Do not thin, use as received
Method of Application:	Spraying preferred
Clean Up:	Water
Shelf Life:	1 year, if unopened

Surface Preparation

Special care must be exercised in the preparation of the surface for all high quality, premium performance coatings.

1) Degreasing. All oil, grease and other organic deposits must be removed by suitable degreasing operation or by heating parts to temperature sufficiently high to facilitate removal.

2) Cleaning and Roughening. All old coats, mill scale, rust, or other tightly adherent deposits must be removed by a method such as dry grit blasting or vapor blasting. Grit blasting, using clean 120 mesh aluminum oxide (Al_2O_3) grit, is the recommended cleaning procedure which is necessary for maximum adhesion to steel, although other abrasive methods may be satisfactory.

Application of Coating

Before applying coating, it is important that all aluminum powder be completely dispersed. Aseal 220I coating composition should be applied by spray application to obtain optimum smoothness and uniform film thickness. Use standard paint spray equipment. Equipment can be readily cleaned using tap water.

Note: This product is not to be thinned, use as received.

Number of Coats

Two coats with a minimum of 2 mils total dry film thickness is generally recommended, although there may be instances where one coat will suffice or where a thickness tolerance dictates one coat.

Curing Procedures

1) Dry at room temperature for a minimum of 1 hour, coating will be dry to touch. Apply second coat and allow to air dry to touch (approx. 20 minutes).

2) Prebake at 175°F. metal surface temperature for a minimum of 20 minutes (no maximum time). Large parts act as heat sinks and will require longer times.

3) Cure at a minimum of 600°F. for minimum of 30 minutes (no maximum time). Surface temperature of coated part must reach recommended cure temperature for 30 minutes.

Surface Treatment

Coating must be made electrically conductive to obtain sacrificial properties. There are two ways this can be done.

A) Coating may be post cured at 1025°F. for 60 minutes.

B) Coating may be burnished by any suitable method such as glass bead peening, or using aluminum oxide. It is important when using a blast cabinet for burnishing that 25 to 35 PSI be used in a suction blast cabinet and 5 to 10 PSI in a pressure blast cabinet.

C) Coating can be burnished in a vibratory finishing machine using ceramic beads or stainless steel media to obtain a chrome like finish. A buffing wheel can also be used.

Note: It is important that the coating is electrically conductive. Using light pressure with probes of an ohm meter held 1" apart, a reading of 10 ohms or less should be obtained.

Removal of Coating

If it should be necessary to remove the cured coating, it can be stripped by grit blasting or immersing in a hot (approximately 150°F.) caustic soda solution (approximately 10% caustic soda) then lightly grit blasting. Care should be taken when using a caustic solution since hydrogen will be generated. Area should be well ventilated.

Precautions

Contains aluminum metal powder. Normal precautions should be taken for handling of alkali materials. Avoid ingestion. Harmful or fatal if swallowed. Avoid inhalation of spray mist and contact with eyes. In case of eye contact flush immediately with plenty of water and consult a physician. Avoid prolonged or repeated contact with skin. For skin contact flush with plenty of water.

When spraying, a suitable exhaust system should be used. If spray mist is not completely removed from air, a suitable respirator should be used.

In case of spill, use absorbing material to soak up and dispose of in accordance with all applicable regulations. Do not use strong alkalis. Then flush with water.

See material safety data sheet before using.

Rev. 2-1

Waste Disposal Method: Filter to remove aluminum and discard as solid chemical waste. Dispose of liquid and solid waste in accordance with federal, state and local environmental control regulations.

Important: Avoid direct contact with alkalis and strong oxidizing or reducing agents since this may produce hydrogen gas.

Since this compound contains aluminum powder, a clean spray area and duct system are important. It is hazardous to allow an accumulation of dried material to occur since this dried material in the form of dust could be ignited by sparks or other means and possibly cause a dust explosion as with any finely divided powdered material.