

Investigation of Conversion Coated Aluminum Alloys

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Abstract:

Aluminum is a light and durable material making it an ideal candidate for use in rocket motors. Aluminum motor cases are treated with a chromium conversion coating for enhanced corrosion protection and adhesion of additional coatings. Some motors cases showed unique unidentifiable discolorations requiring further investigation and analysis. Surface indications displaying discoloration were analyzed by X-ray photoelectron spectroscopy (XPS), scanning electron microscopy (SEM) and energy dispersive spectroscopy (EDS). Magellan Aerospace analyzed these surface indications in collaboration with the Manitoba Institute of Materials.