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POSITIVE MATERIAL IDENTIFICATION (PMI) TEST

Definition

Positive Material Identification (PMI) is the analysis of a metallic alloy to establish composition by reading the quantities by percentage of its constituent elements. Continental Disc Corporation (CDC) uses an X-ray fluorescence (XRF) spectrometer to establish positive material identification.

XRF is the emission of characteristic "secondary" (or fluorescent) X-rays from a material that has been excited by bombarding with high-energy X-rays or gamma rays. XRF is widely used for elemental and chemical analysis for the investigation of metals. An XRF spectrometer is an X-ray instrument used for the routine, relatively non-destructive elemental and chemical analyses using XRF technology.

Equipment

Continental Disc Corporation uses a hand-held open-beam X-ray tube based analytical X-ray device. It is a portable, wide-range elemental analyzer intended for metal alloy field analysis, providing direct chemical analysis of material identification of various alloys in various forms and sizes, with a library of over 300 standard alloys. The instrument contains a high-resolution, Peltier (thermoelectric) cooled, silicone PIN (Si-PIN) diode detector and has resolution of 10,000 counts-per-second. It is registered with the United States Food and Drug Administration (FDA) Center for Devices and Radiological Health.

PMI Testing

PMI testing is performed on the rupture disc membrane and pressure containing holder and body components by CDC trained and authorized personnel.

Certificate of Conformance

CDC provides the customer a Certificate of Conformance certifying compliance to the customer specified alloy.

Shane Bacon
Director, Quality and Certifications