



Evaluation of Wildland Fire Chemicals

STANDARD TEST PROCEDURES

STP 5.2 - Intergranular Corrosion

Summary: Intergranular corrosion is a destruction of metal at grain boundaries. The small amount of metal lost can result in significant loss of strength of the metal item. Because intergranular corrosion occurs at the molecular level, microscopic examination is necessary to identify it.

Aluminum and magnesium alloys are susceptible to intergranular corrosion and failure of aircraft parts typically made from these materials have the potential for catastrophic failure. Therefore, intergranular corrosion requirements have been incorporated into the Forest Service specifications. *This test is contracted through an independent accredited laboratory.*

Method:

Representative aluminum and magnesium samples exposed during uniform corrosion testing are selected, ensuring that coupons subjected to each of the four exposures during uniform corrosion testing are included.

The samples are submitted to a third-party laboratory specializing in metallurgical testing.

All testing is performed in accordance with Forest Service and American Society for Testing and Materials specifications.

References:

American Society for Testing and Materials. Standard Guide for Preparation of Metallographic Specimens; E3-01(2007).

American Society for Testing and Materials. Standard Test Method for Macroetching Metals and Alloys; E340-00(2006).

American Society for Testing and Materials. Standard Practice for Microetching Metals and Alloys; E407-07.