



Evaluation of Wildland Fire Chemicals

STANDARD TEST PROCEDURES

STP 3.1 – 3.3 Mixing Tests

Summary: When a new product is received by the laboratory a number of qualitative tests are performed to determine the correct mixing method. This will vary by the chemical being tested:

3.1 Long-Term Retardant

3.2 Class A Foams

3.3 Water Enhancers

The product concentrate can also come in different forms. Solid (powder) or Liquid (wet) concentrates are measured out and mixed by different means. The mixing ratios or percentages are provided by the manufacturer but must be within the limits as outlined in each of the base specifications¹. The manufacturer will also provide any specific unique mixing applications if they differ significantly from the outlines below.

Shear stress, mixing speed, and mixing time are each a factor in producing a properly mixed product. The end goal is to provide a field-ready homogenous solution. If there are specific recommendations by the manufacturer, it is important to list these during the original product submission process.

WFCS has a variety of mixing apparatuses and equipment that reflect what is found in the field. Standard Laboratory Forms are used to document the mixing which record all traceability and

Method:

3.1 Long-Term Retardants use an overhead mixer with several attachments and mixing speed options.

3.2 Class A Foams utilize a low RPM mixer to reduce excessive foaming during the mix.

3.3 Water Enhancers utilize high shear, high RPM mixing while monitoring slow product addition.

References:

¹ FS 5100-304d Long-Term Retardant, FS 5100-307b Class A Foam, and FS 5100-306b Water Enhancers