USDA United States Department of Agriculture
Forest Service
Washington Office
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Mr. John Sexton
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Dear Mr. Sexton

This letter provides a response to a series of six email messages (sent on January 31 and February 1, 2018) to David Haston, Equipment and Chemicals Branch Chief, regarding the U.S. Department of Agriculture's Forest Service qualification process for wildland fire chemicals. The concerns raised in your email are addressed as follows:

Laboratory Accreditation:
In your email messages, you made a number of references to the lack of accreditation at the Forest Service Wildland Fire Chemicals (WFCS) Laboratory. In consultation with the USDA Office of General Council, we have confirmed that there is no legal requirement for accreditation (ISO certification) for government laboratories. Moreover, the WFCS lab has evaluated wildland fire chemicals, in accordance with Forest Service specifications, for over 50 years. Most of the tests performed in the WFCS laboratory were either developed in close consultation with professional research laboratories or adhere to established test protocols as promulgated by various testing organizations, including the American Society for Testing and Materials International, and the National Association of Corrosion Engineers International, as well as several governmental agencies, including the Environmental Protection Agency and the Office of Prevention, Pesticides, and Toxic Substances. The WFCS laboratory performs only those tests required in Forest Service specifications for use by the Forest Service and other wildland fire agencies. It does not act as a third party laboratory to qualify products for other entities, vendors or users outside of the federal wildland fire community.

With respect to your statement regarding the amount of time required to complete qualification testing, the majority of products complete testing in about 18 months (not 24 months as stated in your email), particularly for Class A foams and water enhancers which are not generally required to go through field testing. The timeline reflects the time necessary to complete the one-year stability test, the final uniform corrosion (performed on the one-year stability sample) and final intergranular corrosion. Manufacturers will often decide to wait until the results of the one-year stability tests are complete before proceeding to more expensive tests (such as toxicity). You are correct that most tests are two to three weeks in duration (or less). Whenever possible, the WFCS laboratory will run tests concurrently.

Corrosion Test Requirement:
The corrosion test required in Forest Service specifications was developed through extensive consultation with Ocean City Research Corp., a widely respected business specializing in corrosion testing and which also works extensively with the U.S. Military. The test protocol follows both NACE TM0169/G31-12a and ASTM G 31 guidelines. It should be noted that both documents state that the nature of corrosion testing precludes complete standardization.

Concerning the issues raised by Mr. K.D. Efird regarding the corrosion test, ASTM G 31 states that "set rules cannot be applied to specimen cleaning because procedures will vary…" ASTM G1-03 (Standard Practice for Preparing, Cleaning, and Evaluating Corrosion Test Specimens), Section 7.4 states that "Mechanical cleaning can include scraping, scrubbing, brushing, ultrasonic cleaning, mechanical shocking, and impact blasting". Our procedures specify using a non-abrasive spatula when scraping is necessary. Although historically it was more common with fire chemical products, fire chemicals today rarely require scraping. The Standard further notes that removing corrosion products by scraping or impact blasting (i.e. grit blasting, water-jet) prior to cleaning is preferable in some cases to prevent reactions that may result in excessive removal of metal.

ASTM G1 does not address the use mechanical drying through the use of towels. Our standard operating procedures specify the use scientific/laboratory grade lint- and static-free, one-use tissues.

The evaluation of localized corrosion (pitting) or dealloying of brass coupons is not applicable to the needs of the Forest Service. WFCS is only looking for broad indications of corrosion when specific alloys are exposed to fire chemicals, not researching a specific type to determine the best way to alleviate certain corrosion trends in the future. Mitigating corrosive tendencies is the responsibility of the fire chemical manufacturer.

The actual yellow brass alloy used in our tests is found in the USFS specification and in our revised lab procedures (UNS 26000) (not yet posted to the website). There is no reason a chemical company can't use an alternative coupon supplier for their own in-house tests. As long as a coupon supplier can meet our specifications, our lab will consider them for purchase.

Use of Other Laboratories:
The Forest Service coordinates all testing for fire chemical qualification. Some of the tests are performed at the WFCS laboratory, while others are performed directly for the Government by third party laboratories. All tests are performed on product supplied by the Government from the manufacturer's submission sample. In this manner, the Government maintains a chain of custody of all test samples throughout the qualification test process.

Cost Estimate:
The Forest Service routinely provides cost estimates to parties interested in pursuing qualification testing. We will be happy to provide your company with a cost estimate upon request.

Information-Only Tests:
Fire suppressant foams are used on a wide range of tactical scenarios and conditions. The Forest Service requires some tests that every product must pass to comply with mandatory performance requirements, such as mammalian and fish toxicity, uniform and intergranular corrosion, and stability. Other tests, such as the level of foaming and the drain time as a function of water temperature and quality, are performed for "information only" over a wide variety of conditions to help users determine which products best fit their operational needs based on the application.

Collection of Information:
WFCS annually makes a request through OMB to advertise to potential offerors the opportunity to submit products that may be useful in wildland firefighting. After successful testing in accordance with Specifications 5100-304c, 5100-306a or 5100-307a, a product may be added to the Qualified Products List (QPL). As a result, the QPL for Class A foams includes 14 products from 10 different suppliers and the QPL for water enhancers includes 10 products from seven suppliers. The long-term retardant QPL includes seven products, all of which are manufactured by one company. The reason for a singular company has nothing to do with the specification change requiring a minimum viscosity as indicated in your email. The toxicity of older retardants was significantly higher than those currently found on the QPL.

In summary, we thank you for your interest in chemicals for wildland firefighting. If you would like to pursue qualification testing, please contact David Haston, Equipment and Chemicals Branch Chief at (208) 387-5642, dhaston@fs.fed.us or Shirley Zylstra, WFCS Program Leader at (406) 329-4859, szylstra@fs.fed.us. They will be happy to provide an outline of the qualification process, timeline, and a cost estimate.

Sincerely,

Shawna A. Legarza, Psyd

SHAWNA A. LEGARZA, PSYD
Director Fire and Aviation Mgt

Enclosure

cc: Dave Haston, Shirley Zylstra