



Manufacturer's Information

Test No. 16-536: Flammables Analysis

Each sample set consisted of three items: one nylon bag that contained a charred piece of red oak to which an ignitable liquid had been added, one nylon bag that contained a charred piece of red oak that was not spiked, and one nylon bag that contained a sample of the unburned red oak substrate which was provided to participants as a negative, control sample. The nylon bags used in this test were produced by the Grand River Products company. Participants were requested to identify and indicate the ASTM class for any ignitable liquid(s) detected in the submitted items.

SAMPLE PREPARATION-

The charred piece of red oak in the Item 1 bag contained a product labeled as Lamplight 60009 Clear Ultra-pure Lamp Oil. The lamp oil was purchased from a local home improvement store in April 2016. The charred piece of red oak in the Item 2 bag did not contain an ignitable liquid.

ITEM 1 (PREPARATION): The charred red oak was prepared by cutting planks of red oak into 1" x 2" x 1" pieces using a miter saw. These pieces were then charred on a small grill using pieces of scrap red oak as fuel for the fire. The charred pieces were then extinguished with water and allowed to air dry for several days. Each charred piece then had 25 µl of the ignitable liquid pipetted onto it twice for a total of 50 µl. The wood piece was then dropped into a previously opened 5" x 10" nylon bag. The bag was immediately double heat-sealed across the top using an impulse heat sealer which produces a 1/8" wide band. This bag was then placed in a pre-labeled 6" x 12" nylon bag and double heat-sealed across the top. After sealing, each bag was inspected to determine if it contained an adequate amount of air space. Item 1 was stored separately from other items until the complete sample sets were put together.

ITEM 2 (PREPARATION): The samples were cut, charred, and packaged in the same manner as described for Item 1, but no ignitable liquid was added.

ITEM 3 (COMPARISON BLANK): The samples were cut and packaged in the same way as described for Item 1, but they were not charred and no ignitable liquid was added.

SAMPLE SET ASSEMBLY: Once verification was completed, all sample sets were prepared. Prior to packing items into sample pack boxes, each item was again inspected to ensure it contained an adequate amount of air space. For each sample set, an Item 1, 2 and 3 were each placed into a pre-labeled sample pack box. This process was repeated until all of the sample sets were prepared.

VERIFICATION: Laboratories that conducted predistribution analysis of the items classified the ignitable liquid in Item 1 as heavy normal alkanes and reported "no ignitable liquid detected" for Item 2. The liquid was classified using the ASTM classification scheme.*

*Source: ASTM E 1618-14, Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry, Table 1.