Frontier Analysis, Ltd

TECHNICAL SERVICE RESPONSE NO.: UT072

Subject: Identification of a Jelly-like Substance Purported to Fall from the Sky After Observation of a Cigar-shaped Craft (April 2010, Memphis TN) (CMS No.: 26363)

Date: March 14, 2011

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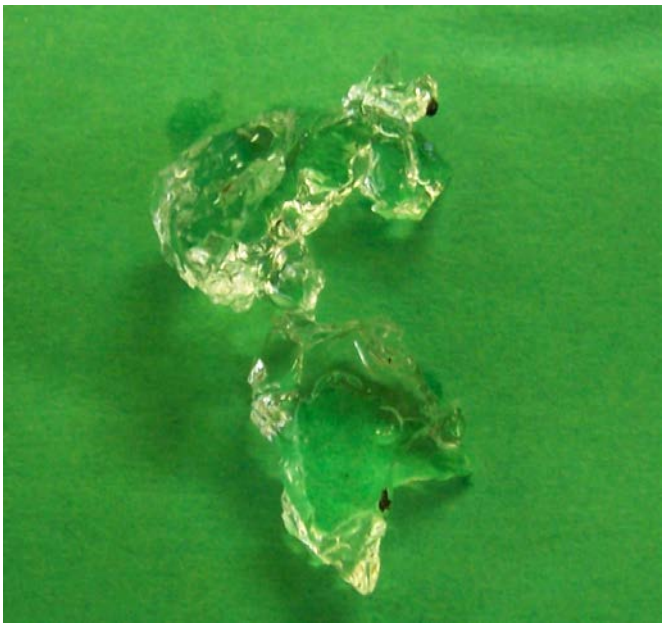
Background/Objective:

A cigar-shaped UFO was observed in Memphis, Tennessee in April 2010. The witness claims a jelly-like substance had fallen from the sky after sighting the craft in the sky. The objective is to identify the substance. A photograph of one of the gel samples (# 3) follows. It has a clear,colorless appearance.



Conclusion:

The jelly-like material is sodium poly(acrylic acid/acrylamide) copolymer and water. This polymer is noted for taking on water many times its own weight. This material has many uses. It is commonly used in agriculture/farming because of its water retaining ability. Several companies distribute this material. One is Hydro-Gel (Finn corporation). It usually comes as a solid and water is added to it.

Procedure:

Samples: The samples were received on November 17, 2010. They were samples from the outside/yard of the witness in Memphis, TN on November 4, 2010 at 10:00 a.m. They are:

- #1 Clear jelly-like substance in a plastic container.
- #2 Clear jelly-like substance in a plastic container.
- #3 Clear jelly-like substance in an baggie.
- #4 Substance on cotton swipe in envelope.
- #5 Substance on cotton swipe in a baggie.
- #6 Substance on Q-tip in an envelope.
- #7 Substance on Q-Tip in an envelope.
- #8 Substance on Q-Tip in a baggie.

Selected samples of gel, #1, #2 and #3, were examined. Infrared (FT-IR[1]) spectra were obtained from these three samples 'as received'. Then the gels were placed on glass microscope slides. They were allowed to sit at ambient temperature until all the water was evaporated. Infrared spectra were then acquired from the residues. Further analysis of the other samples, which were on cotton, was not pursued. This was because the gel was identified in the first three samples. Also, there was scant substance to analyze, and the cotton interfered with the analysis. No effort was made to extract/isolate substance from the cotton.

Results:

Infrared spectra of samples of the jelly-like material 'as received' are all identical to each other and identify a water component. Following are the spectra along with a reference of water for comparison.

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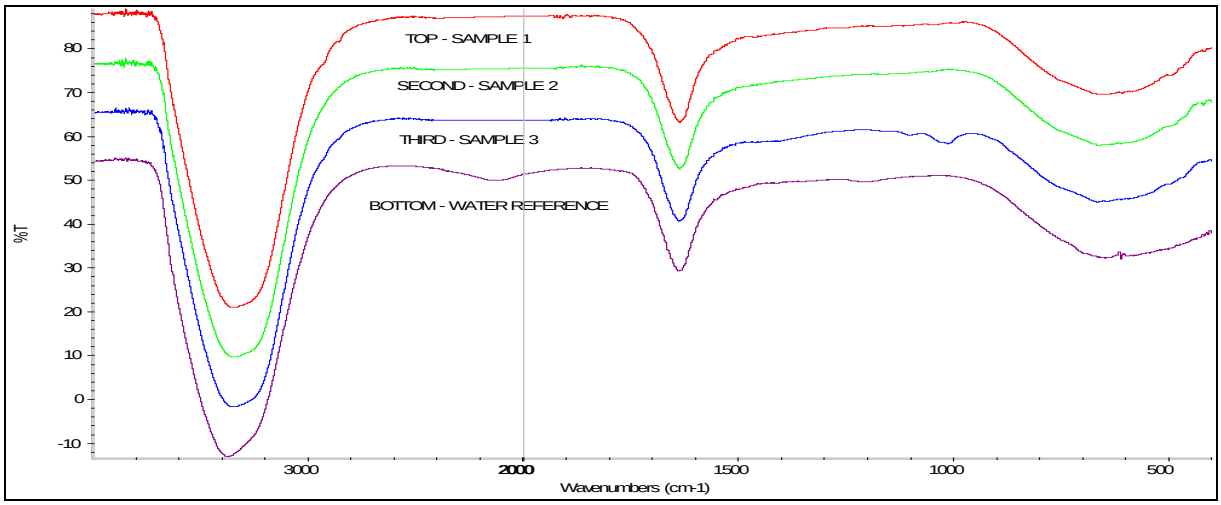
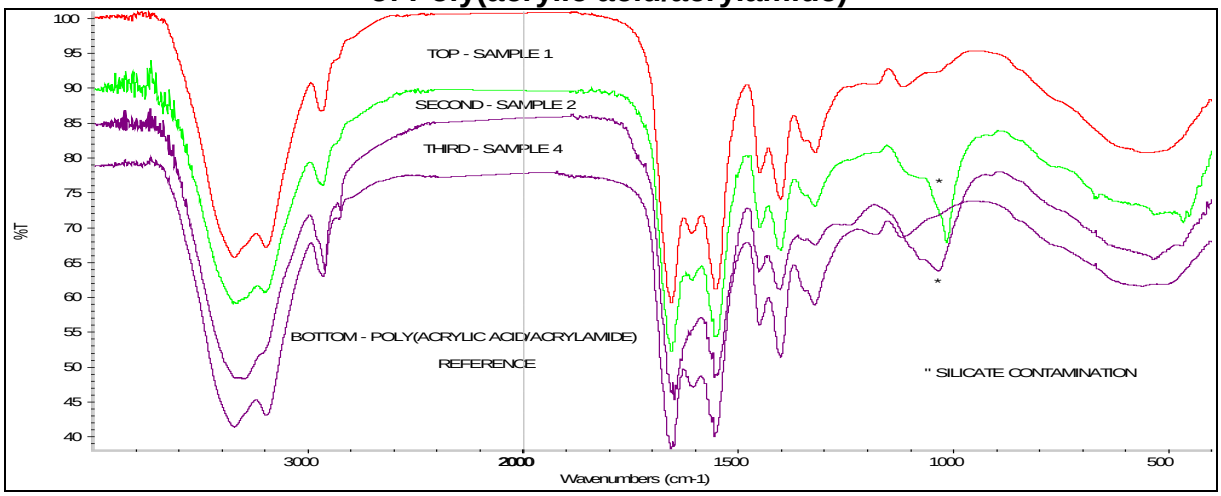
[1] **FT-IR (Fourier Transform Infrared Spectroscopy):** Infrared spectroscopy is used for the molecular structure identification and quantification of solids, liquids, and gases. An infrared spectrum is the result of light (in the 2 to 25 micron wavelength range) interacting with the vibrations of molecules. The particular set of vibrations of a molecule gives rise to specific spectral absorption bands, often referred to as the "fingerprint" spectrum.

Infrared Spectra of 'As Received' Samples #1, #2,and #3 and Reference of Water



The water masked the substance that formed the gel. Therefore, the water was allowed to evaporate from the gel samples in order to isolate it for analysis. Infrared spectra of the resulting residues were the same for all three samples, showing they are of the same composition. The residues are identified as sodium poly(acrylic acid/acrylamide) copolymer. A small amount of dirt (silicate) is also found in the two samples (#2 and #3). The infrared spectra of the samples and a reference of sodium poly(acrylic acid/acryamide) for comparison follows.

Infrared Spectra of Samples #1, #2,and #3 After Water Removal and Reference of Poly(acrylic acid/acrylamide)



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