

FTIR and Raman Proficiency Program

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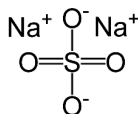
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August 9, 2017

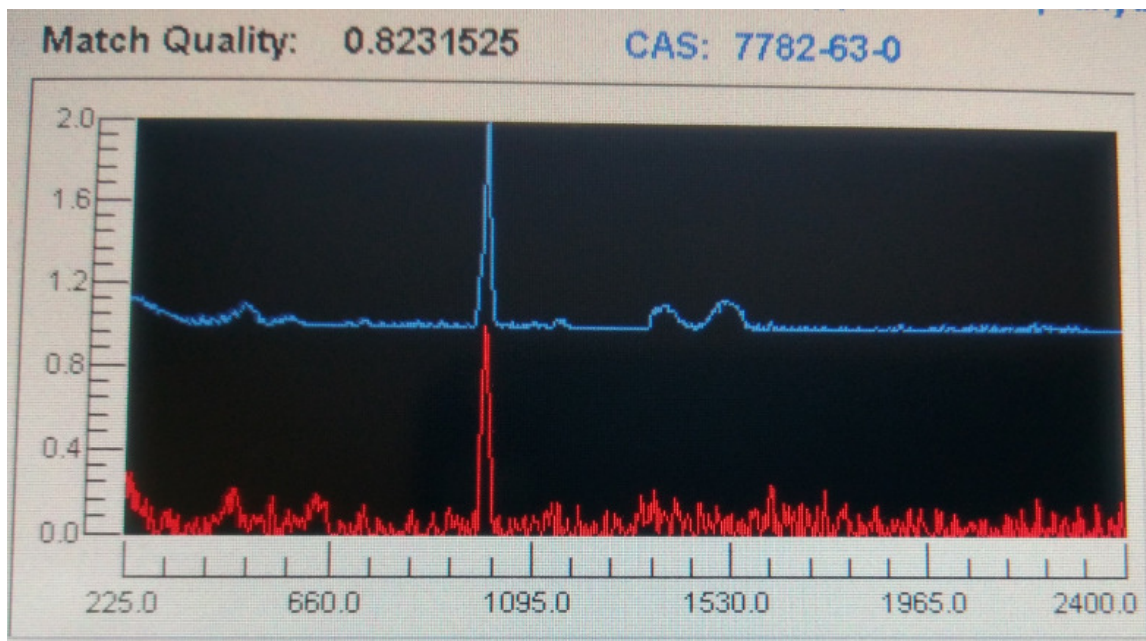
Results for July 2017 RAMAN Proficiency Testing Event

Dear Participant:

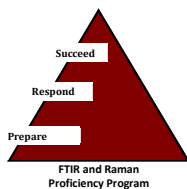
In the July 2017 Raman challenge three unknown powders were sent. All three were one component samples. **RAM17-4** was sodium sulfate, CAS # 7757-82-6. This is a white powder that is used in laboratories as a drying agent. It is a crystalline white salt and is similar in appearance to table salt, and of course is a different compound from sodium sulfite, which has been sent previously.



This compound has a pretty simple Raman spectrum, and on our Responder the strongest peak showed up nicely. However, the top matches were various sulfates, with sodium sulfate being number 3. The chemical is in the Smiths Raman Common Chemicals library and the spectrum is shown below.



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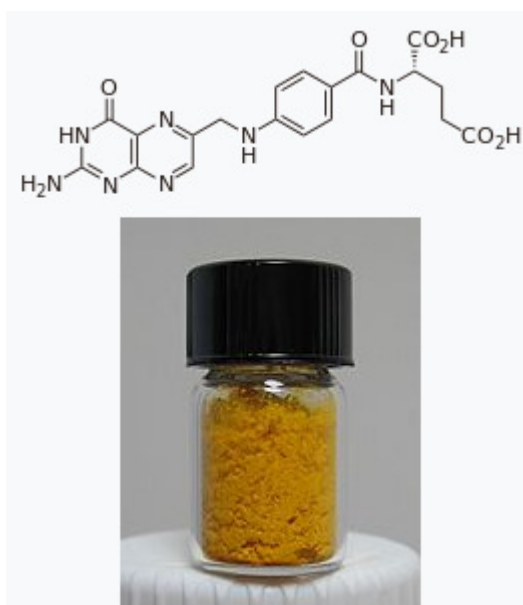
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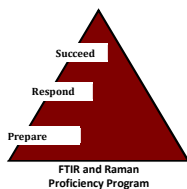
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All participants identified this fully or a portion of the molecule.

RAM17-5 was folic acid, CAS # 59-30-3. This was a very dark yellow and fine powder, that was pretty sticky. Folic acid is a B vitamin that is required by humans on a daily basis. The structure and an image of the typical powder are shown below. The yellow color is a good characteristic of folic acid but also of structurally similar compounds.



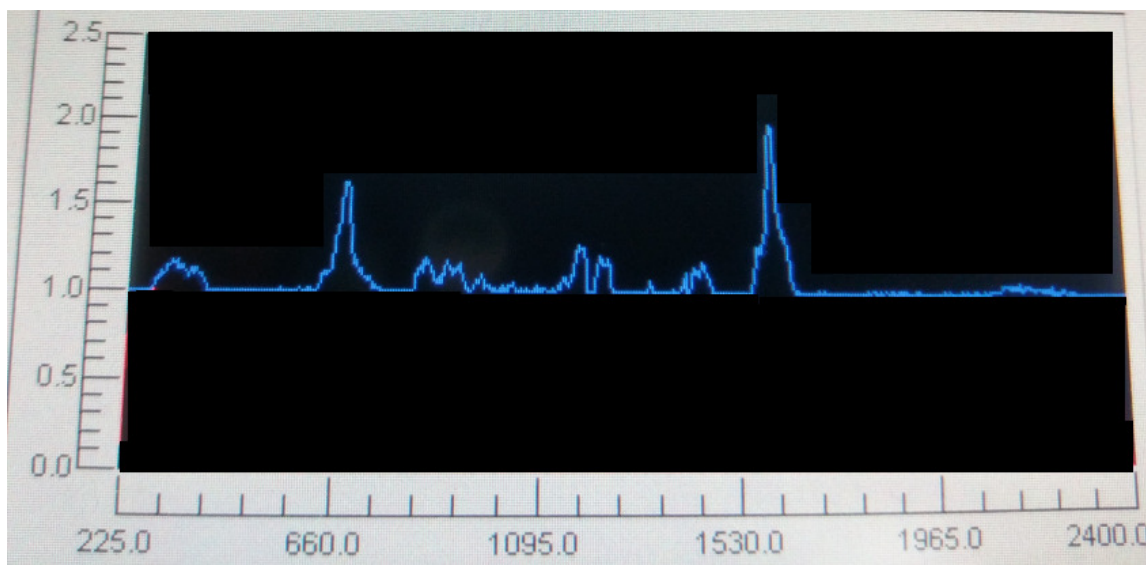
Our Responder did not give a strong spectrum on this sample, but there are several peaks present. The library spectrum is shown below from the Smiths Raman Common Chemicals library.



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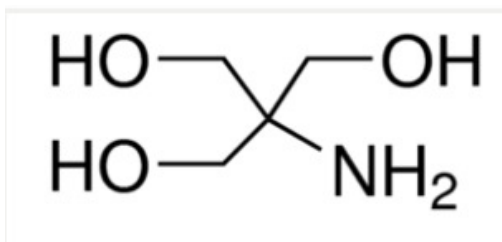
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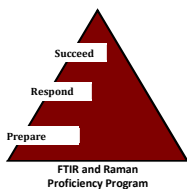


The majority of participants correctly identified this as folic acid or an analogue of folic acid.

RAM17-6 was tris(hydroxymethyl)aminomethane, CAS # 77-86-1. This powder is used mainly as a buffer, and is also the chemical name of the medication Tromethamine, used for the same purpose. It is also a white crystalline powder, with slightly larger crystals compared to the sodium sulfate. This compound is not very big, despite its name.



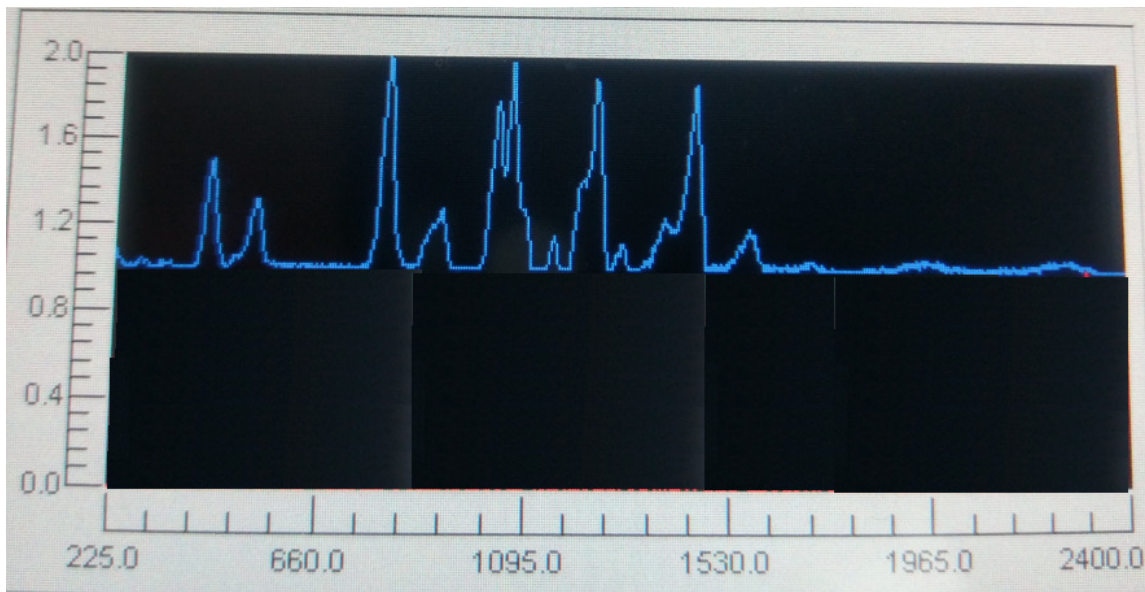
This compound is found in the common chemicals library and has numerous peaks. All participants correctly identified this.



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Individual results can be seen by visiting NPHL.org and logging into the FTIR/Raman participant portal. Individual result reports are no longer sent out. As always, please contact us with any questions you might have. This report will be posted on the FTIR/Raman page on nphl.org.

Sincerely,

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