



FTIR and Raman Proficiency Program

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November 20, 2018

Results for October 2018 RAMAN Proficiency Testing Event

Dear Participant:

In the October 2018 Raman challenge two unknown powders and one unknown liquid were sent. All were one component samples. **RAM18-7** was sodium bitartrate monohydrate, CAS # 6131-98-2. This is a fluffy, white powder. This compound is used as a pH regulator in the food industry.

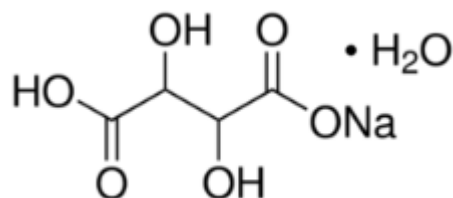


Figure 1. Sodium bitartrate monohydrate

Sodium bitartrate (CAS # 526-94-3) is present in the Smiths Common Chemicals Raman library. This is a slightly different compound in that it lacks the water molecule. Our instrument consistently returned it as the top match. Bitartrate was present in most of the top 10 matches on our instrument. The match quality was not great, and we had a higher quality spectrum using the external laser on our device, even when using the same small vial of material. Seventy percent of participants identified this as either the monohydrate compound or as a tartrate compound. It was considered not graded.



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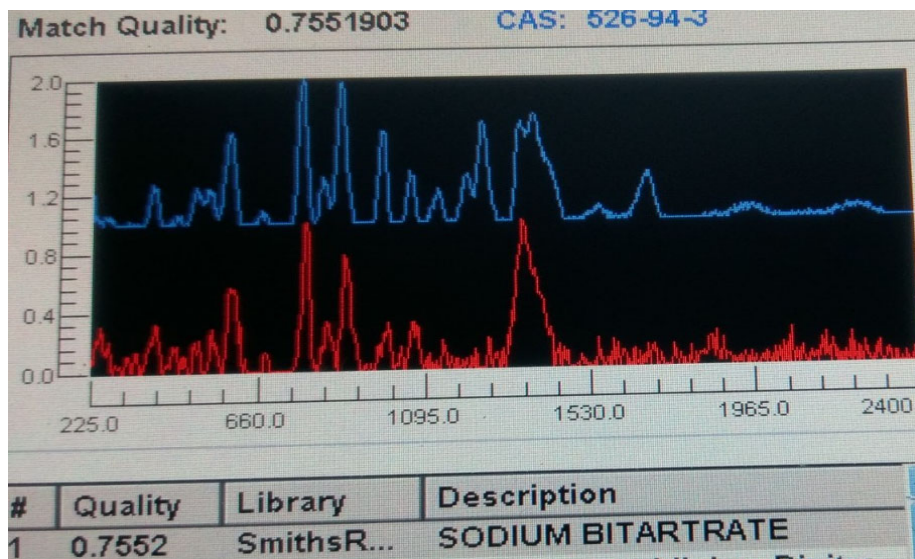


Figure 2. Responder match

RAM18-8 was diacetin (diacetylglycerol), CAS # 25395-31-7. It is a clear, viscous liquid. This sample contained a small amount of mono- and triacetin. All of these compounds are glycerol molecules with either one, two, or three acetyl groups attached to the oxygen atoms. This compound is used as a plasticizer and as a fragrance.

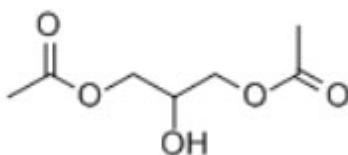


Figure 3. Diacetin

This compound is listed in the Smiths Common Chemicals Raman library. Our instrument gave good peaks and a high match for diacetin. The second and third matches were repeatedly triacetin and monoacetin. All participants correctly identified this.



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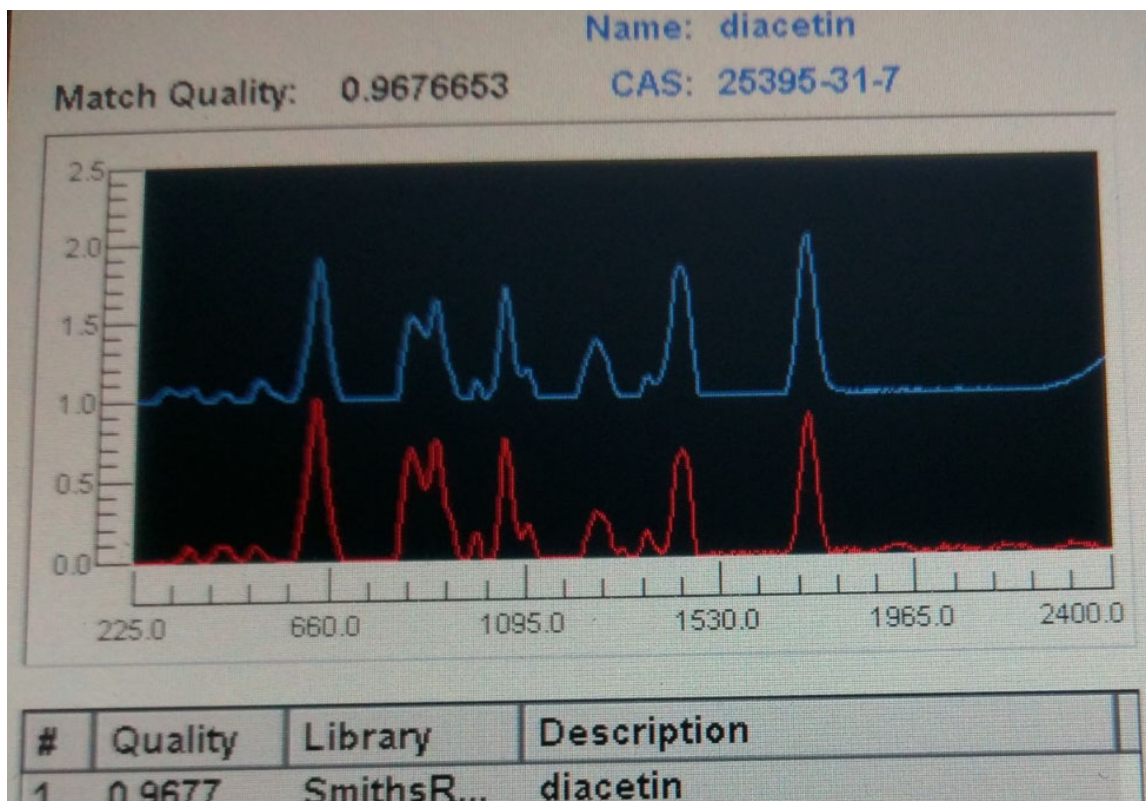


Figure 4. RespondER match

#	Quality	Library	Description
1	0.9677	SmithsR...	diacetin
2	0.9156	SmithsR...	triacetin
3	0.9065	SmithsR...	monoacetin

Figure 5. RespondER top 3 matches

RAM18-9 was D-fructose, CAS # 57-48-7, the common monosaccharide. It's mostly encountered in daily life as high fructose corn syrup. This sample was a white crystalline powder.



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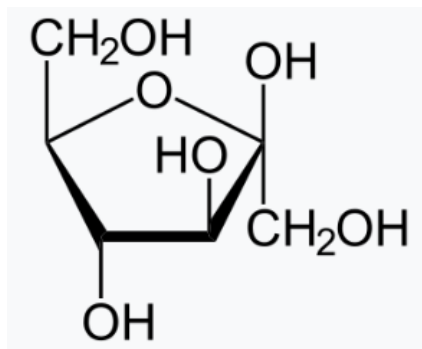


Figure 6. Fructose

This compound is found in the Smiths Common Chemicals Raman library. Our instrument consistently had fructose as the top match. The majority of participants correctly identified this.

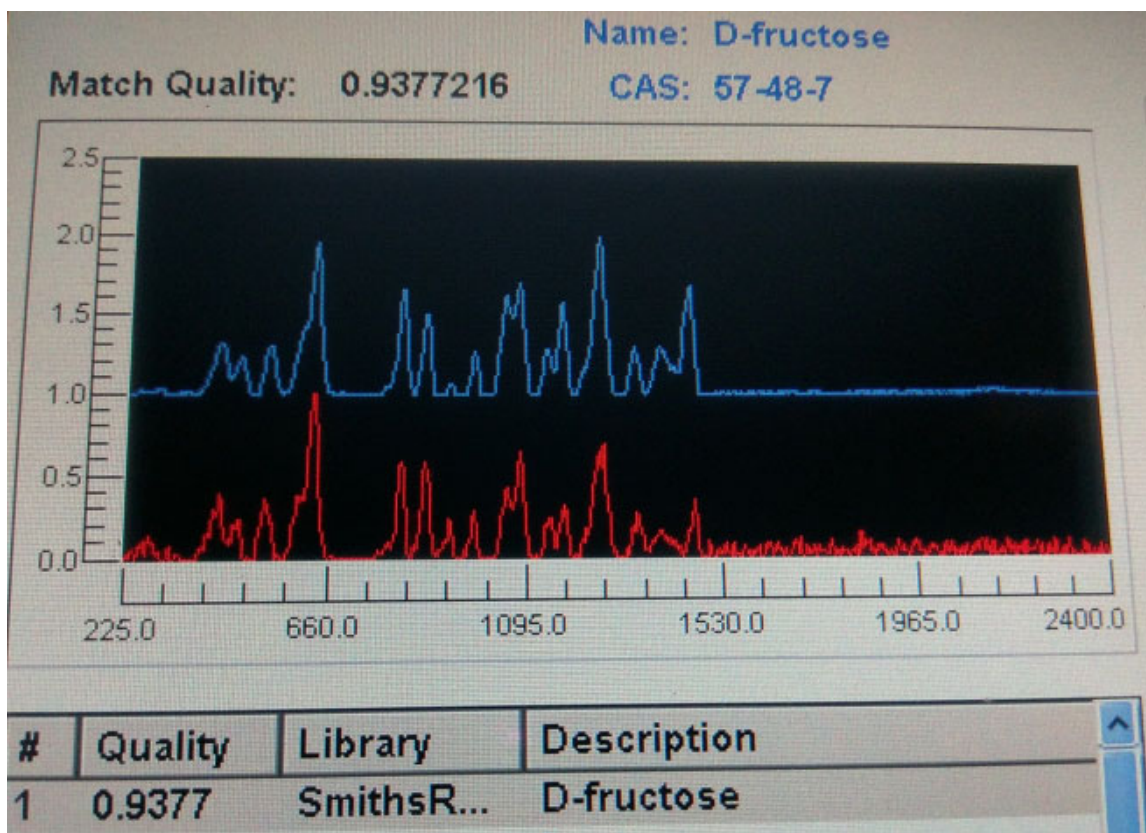


Figure 7. Responder match



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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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