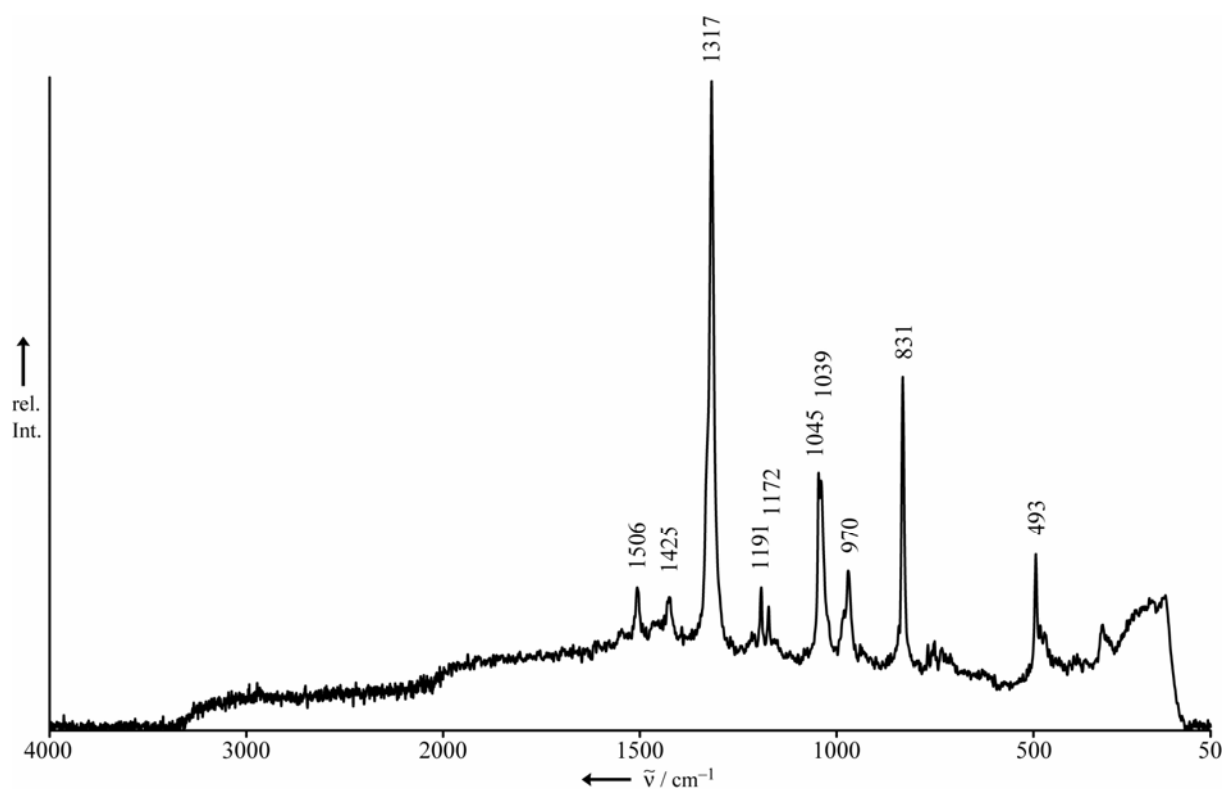


Electronic Supplementary Information

First structural characterization of solvate-free silver dinitramide, $\text{Ag}[\text{N}(\text{NO}_2)_2]$

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Raman spectrum of AgDN:



Details for sensitivity tests:

For initial safety testing, the impact and friction sensitivities as well as the electrostatic sensitivity were determined.¹ The impact sensitivity tests were carried out according to STANAG 4489² modified according to instruction³ using a BAM (Bundesanstalt für Materialforschung)⁴ drophammer.⁵ The friction sensitivity tests were carried out according to STANAG 4487⁶ modified according to instruction⁷ using the BAM friction tester. Compounds are classified according to the “UN Recommendations on the transport of dangerous goods”.⁸ The electrostatic sensitivity tests were carried out using an electric spark tester ESD 2010EN (OZM Research) operating with the “Winspark 1.15 software package”.⁹

References

1. M. Suceška, *Test Methods for Explosives*, Springer, New York 1995, p. 21 (impact), p. 27 (friction).
2. *NATO standardization agreement (STANAG) on explosives, impact sensitivity tests, no. 4489*, Ed. 1, Sept. 17, 1999.
3. *WIWEB-Standardarbeitsanweisung 4-5.1.02, Ermittlung der Explosionsgefährlichkeit, hier der Schlagempfindlichkeit mit dem Fallhammer*, Nov. 8, 2002.
4. <http://www.bam.de>
5. <http://www.reichel-partner.de/>
6. *NATO standardization agreement (STANAG) on explosive, friction sensitivity tests, no. 4487*, Ed. 1, Aug. 22, 2002.
7. *WIWEB-Standardarbeitsanweisung 4-5.1.03, Ermittlung der Explosionsgefährlichkeit oder der Reibeempfindlichkeit mit dem Reibeapparat*, Nov. 8, 2002.
8. Impact: Insensitive > 40 J, less sensitive ≥ 35 J, sensitive ≥ 4 J, very sensitive ≤ 3 J. Friction: Insensitive > 360 N, less sensitive = 360 N, sensitive < 360 N and > 80 N, very sensitive ≤ 80 N, extremely sensitive ≤ 10 N. According to the *UN Recommendations on the Transport of Dangerous Goods*.
9. <http://www.ozm.cz/testing-instruments/small-scale-electrostaticdischarge-tester.htm>

Details for DSC measurements:

For determining the decomposition temperature, a LINSEIS DSC PT 10¹⁰ with a heating rate of 5 °C min⁻¹ and a nitrogen flow of 5 L h⁻¹ was used. The measurement with ca. 2.5 mg of AgDN was performed in a pressed Al-container containing a hole (0.1 mm) for the gas release.

AgDN does not melt and decomposes at 120 °C.

10. <http://www.linseis.com/>