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|--------------------------------------|------------------------------------|--|---|
| 36 | ArN₄⁺ | Argon (1+) ion – dinitrogen (1/2) | D_{∞h} |
| IR, <i>ab initio</i> calculations | | (weakly bound complex) | (effective symmetry class) (large-amplitude motion) N≡N · Ar ⁺ · N≡N |
| | r_e | \AA^a | |
| | N≡N | 1.1014 | |
| | N...Ar | 2.3602 | |

The structure in the $^2\Sigma_u^+$ electronic ground state was determined from the rotationally resolved ν_3 antisymmetric N≡N stretching vibration. The complex has a linear centrosymmetric equilibrium structure.

^a) Best *ab initio* geometry (RCCSD(T)/cc-pVQZ calculations) with $B_e=0.034297\text{ cm}^{-1}$, close to the experimentally determined value $B_0=0.034296(7)\text{ cm}^{-1}$.

Linnartz, H., Verdes, D., Knowles, P.J., Lakin, N.M., Rosmus, P., Maier, J.P.: J. Chem. Phys. **113** (2000) 895.