

488	C₄H₂⁺	Butadiyne-<i>d</i>₁ cation	C_{∞v}
UV		Diacetylene- <i>d</i> ₁ cation 1,3-Butadiyne- <i>d</i> ₁ (1+) ion	H-C≡C-C≡C-D ⁺

State	$\tilde{X}^2\Pi_g$	$\tilde{A}^2\Pi_u$
Energy [eV]	0.00	2.446
$r_0(\text{H}\dots\text{D})$ [Å]	5.92	6.00
Reference	[1]	[1]

The ion was produced by a discharge through 0.25% HCCH and 0.25% DCCD in argon. The spectrum was observed in absorption using cavity ring-down spectroscopy. The overall lengths of the molecule in the two states are in excellent agreement with the values of 5.91 and 5.99 Å obtained in [2].

- [1] Vaizert, O., Furrer, P., Cias, P., Linnartz, H., Maier, J.P.: J. Mol. Spectrosc. **214** (2002) 94.
 [2] Lecoulre, J., Maier, J.P., Rösslein, M.: J. Chem. Phys. **89** (1988) 6081.

[II/25C \(3, 1501\)](#)