A SURVEY OF HNCO AND CH_3NCO IN MOLECULAR CLOUDS

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Following the first interstellar detection of CH_3NCO in Sgr B2(N) by Halfen et al. (2015), a survey of this species and its likely precursor HNCO has been conducted towards several dense molecular clouds. Three transitions of CH_3NCO in its $K_a = 0$ ladder for both A and E internal rotation states were searched for at 3 mm, using the new ARO ALMA Prototype 12 m telescope. In addition, two transitions of HNCO in its $K_a = 0$ and 2 ladders were observed near 88 and 110 GHz. Emission from CH_3NCO was detected towards Orion-KL, G34.3, W51M, Sgr B2(2N), and DR-21(OH) with intensities of $T_A^* \approx$ 10-40 mK. HNCO was also found in each source observed. The ratio of HNCO/CH_3NCO estimated from these data is around 25 - 45, consistent with that derived from Sgr B2(N). These results suggest that HNCO is most likely the chemical precursor to CH_3NCO.