N_3Cl

ClN_3 (к, ж)

T_m, T_c

2912

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ClN3

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6980v Heat of decomposition and maximum flame temperature of chloroazide. Claude Paillard, Raymond Moreau, and Jean Combourieu (Fac. Sci., Paris). *C. R. Acad. Sci., Paris, Ser. C* 264(22), 1721–2(1967)(Fr). The general character of the flame decompn. of gaseous ClN_3 at low pressures was described (*CA* 67: 13444f). A direct exptl. detn. of the decompn. heat was needed for the kinetic interpretation of results obtained on the flammability limits, the space velocities of flame in the spherical bomb, and crit. extinction diams. The ClN_3 was violently explosive, an indication of great endothermicity. The decompn. heat was detd. with an automatic calorimeter which consisted of a 4 l. Dewar flask filled with Vaseline oil. A glass explosion chamber, a motor-driven stirrer, a constantan heating resistance, and a precision thermometer were placed in the flask. The ex-

C.A. 1968. 68. 2

plosion chamber was a U tube (vol. 120 cc.) equipped with ignition electrodes. Filling, evacuation, and measurements of pressure, temp., voltage, resistance, etc. were done automatically. The decompn. heat of ClN_3, $\Delta H°_{298}$ was -93.2 ± 1.5 kcal./mole. The max. theoretical flame temp. was particularly high: 3380°K. for pure ClN_3 at 20 mm. The app. was checked by measurement of the decompn. heat of N_3H at 25° and const. pressure ($\Delta H°_{298} = -71.0 \pm 1$ kcal./mole). 5 references.

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