THERMAL DECOMPOSITION OF TRIAZOLO- AND TETRAZOLOTERAZINES

V. P. Sinditskii, A. V. Burzhava, G. F. Rudakov, and D. A. Zacharova

D. Mendeleev University of Chemical Technology of Russia, 9 Miusskaya Sq., Moscow 125047, Russian Federation

Abstract: Thermal decomposition of 6-aminotrizolo[1,5-b]-1,2,4,5-tetrazine (ATrTz) and 6-amino-tetrazolo[1,5-b]-1,2,4,5-tetrazine (ATTz) in isothermal and nonisothermal conditions has been studied. The decomposition of both substances follows the first-order reaction until high extent of decomposition. The kinetic data received are well described by straight lines in wide temperature ranges: $k = 5.8 \cdot 10^{10} \exp(-17205/T)$ [s$^{-1}$] (230–328 $^\circ$C) for ATrTz and $k = 1.3 \cdot 10^{25} \exp(-29750/T)$ [s$^{-1}$] (164–221 $^\circ$C) for ATTz. A decomposition mechanism of these compounds has been proposed.

Keywords: azoloterazines; 6-aminotrizolo[1,5-b]-1,2,4,5-tetrazine; 6-amino-tetrazolo[1,5-b]-1,2,4,5-tetrazine; thermal decomposition; kinetics

References


Contributors

Sinditskii Valeriy P. (b. 1954) — Doctor of Science in chemistry, professor, dean, D. Mendeleev University of Chemical Technology of Russia, 9 Miusskaya Sq., Moscow 125047, Russian Federation; vps@rctu.ru

Burzhava Anna V. (b. 1986) — postgraduate student, D. Mendeleev University of Chemical Technology of Russia, 9 Miusskaya Sq., Moscow 125047, Russian Federation; 8marta51@mail.ru

Rudakov Gennadiy F. (b. 1965) — senior lecturer, D. Mendeleev University of Chemical Technology of Russia, 9 Miusskaya Sq., Moscow 125047, Russian Federation; rudakov@rctu.ru

Zacharova Daria A. (b. 1990) — student, D. Mendeleev University of Chemical Technology of Russia, 9 Miusskaya Sq., Moscow 125047, Russian Federation; dusya_zaharova@mail.ru

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