

A brief review of publications of Russian scientists on energy materials and processes. Part 2.

*Mendeleev Communications*, 2011, 21, N 1, 48-49

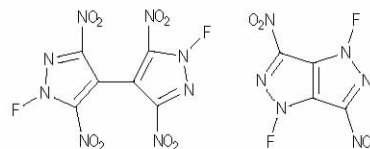
Cite this: *Mendeleev Commun.*, 2011, 21, 48-49

DOI: 10.1016/j.mencom.2011.01.020

### N-Fluoro Derivatives of Nitrated Pyrazole-containing Fused Heterocycles

I. L. Dalinger, T. K. Shkineva, I. A. Vatsadze, G. P. Popova, and S. A. Shevelev

N-Fluorination of Na-salts of polynitrated bipyrazoles and pyrazole-based fused heterocycles with fluorine–nitrogen mixture (10% F<sub>2</sub>) at –60 to –70°C in MeOH in the presence of NaF occurs regioselectively at the nitrogen atom most distant from nitro groups.



*Russian Journal of Applied Chemistry*, 2011, 84, N 2, 184-189

Published in Russian in *Zhurnal Prikladnoi Khimii*, 2011, vol. 84, N 2, pp. 188–193

Cite this: *Russ. J. Appl. Chem.*, 2011, 84, 184-189

DOI: 10.1134/S1070427211020030

### Mass-Spectrometric Examination of Vaporization of Sodium Nitrite and Sodium and Potassium Nitrates

G.P. Dukhanin and S.I. Lopatin

Vaporization of sodium nitrite and sodium and potassium nitrates was examined by high-temperature mass spectrometry. The inverse temperature dependences of the vapor pressure logarithm for these compounds were presented. Enthalpies of vaporization and standard enthalpies of formation of gaseous NaNO<sub>2</sub>, NaNO<sub>3</sub>, and KNO<sub>3</sub> were determined.

*Russian Journal of Applied Chemistry*, 2011, 84, N 2, 230-235

Published in Russian in *Zhurnal Prikladnoi Khimii*, 2011, vol. 84, N 2, pp. 234–239

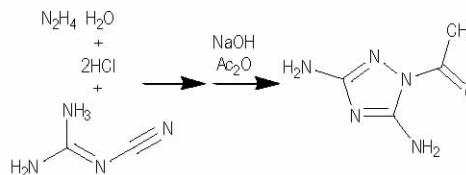
Cite this: *Russ. J. Appl. Chem.*, 2011, 84, 230-235

DOI: 10.1134/S107042721102011X

### Regioselective Single-Reactor Synthesis of Arylsulfonyl Derivatives of 3,5-Diamino-1,2,4-triazole

V. M. Chernyshov, G. V. Kozlenko, and V. A. Taranushich

Arylsulfonylation of 1-acetyl-3,5-diamino-1,2,4-triazole with arylsulfonyl chlorides in pyridine, with the subsequent hydrolysis of the acetyl group, was studied; a new regioselective method for synthesis of *N*-(5-amino-1*H*-1,2,4-triazol-3-yl)arylsulfonamides was developed.



*Russian Journal of Applied Chemistry*, 2011, 84, N 2, 248-255

Published in Russian in *Zhurnal Prikladnoi Khimii*, 2011, vol. 84, N 2, pp. 252–259

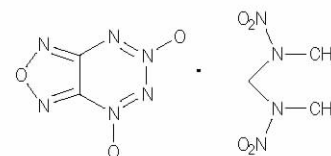
Cite this: *Russ. J. Appl. Chem.*, 2011, 84, 248-255

DOI: 10.1134/S1070427211020145

## Specific Features of the Crystal and Phase Structure of Binary Systems 5,6-(3',4'-Furazano)-1,2,3,4-tetrazine-1,3-dioxide-2,4-dinitro-2,4-diazapentane

P.I. Kalmykov, V.E. Zarko, A.A. Sidel'nikov, I.V. Koptyug, A.I. Ancharov, and K.A. Sidorov

Analysis of the structure of a crystallized binary system involving 5,6-(3',4'-furazano)-1,2,3,4-tetrazine-1,3-dioxide and 2,4-dinitro-2,4-diazapentane by optical microscopy, NMR tomography, and X-ray diffraction analysis was described.



*Russian Journal of Applied Chemistry*, 2011, 84, N 2, 338-340

Published in Russian in *Zhurnal Prikladnoi Khimii*, 2011, vol. 84, N 2, pp. 342–344

Cite this: *Russ. J. Appl. Chem.*, 2011, 84, 338-340

DOI: 10.1134/S1070427211020303

## Cyclohexanol Nitration by a Mixture of Ammonium Nitrate and Sulfuric Acid in a Two-Phase System

A.V. Logvinov, S.F. Melnikova, A.A. Astrat'ev

Cyclohexanol nitration by a mixture of ammonium nitrate and sulfuric acid in the presence of an organic solvent was studied. Resulting cyclohexyl nitrate is an effective addition to fuels in particular for the diesel fuels.

*Russian Chemical Bulletin*, 2011, 60, N 3, 536-547

Published in Russian in *Izvestiya Akademii Nauk. Seriya Khimicheskaya*, 2011, No. 3, pp. 523–534

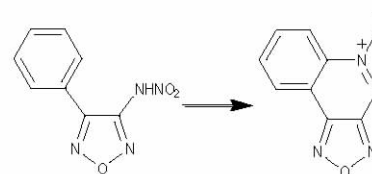
Cite this: *Russ. Chem. Bull.*, 2011, 60, 536-547

DOI: 10.1007/s11172-011-0084-0

## Generation of Oxodiazonium Ions 1. Synthesis of [1,2,5]Oxadiazolo[3,4-c]cinnoline 5-oxides

M. S. Klenov, M. O. Ratnikov, A. M. Churakov, V. N. Solkan, Yu. A. Strelenko, and V. A. Tartakovskiy

Synthesis of furazano[3,4-c]cinnoline 5-oxides by the reaction of 3-nitramino-4-(R-phenyl)-furazans or their *O*-methyl derivatives with electrophilic agents (P<sub>2</sub>O<sub>5</sub>, oleum, H<sub>2</sub>SO<sub>4</sub>, MeSO<sub>3</sub>H, CF<sub>3</sub>CO<sub>2</sub>H and BF<sub>3</sub>·Et<sub>2</sub>O) have been developed. A suggestion has been made that an oxodiazonium ion is formed in these reactions from nitramines or their *O*-methyl derivatives upon the action of the agents.



(以上信息由俄罗斯 N. D. Zelinsky Institute of Organic Chemistry 的 Aleksei B. Sheremetev 博士供稿)