

研究快报

乙腈溶液中亚硝酸苄(醇)酯系列化合物NO化学亲和势的测定

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摘要 本文选取10个取代的亚硝酸苄(醇)酯化合物, 通过滴定量热和电化学方法, 结合热力学循环, 研究了其在乙腈溶液中的NO化学亲和势, 即O—NO键的均裂能和异裂能.

关键词 [亚硝酸苄\(醇\)酯](#) [化学亲和势](#) [O—NO键能](#) [滴定量热](#)

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Determination of NO Chemical Affinities of Benzyl Nitrite in Acetonitrile

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Abstract There is an increasing interest for the study of NO affinity of organic nitrite, for the biological and physiological effects of organic nitrites seem to be due to their ability releasing NO. In this paper, NO chemical affinities of ten benzyl nitrites were determined respectively by titration calorimetry and from a thermodynamic cycle in acetonitrile solution. The results show that ΔH_{het} of O—NO in the O-nitroso compounds were substantially larger than the corresponding ΔH_{homo} of O—NO in the same compounds, suggesting that these O-nitroso compounds were much easier release NO radical by the O—NO bond homolytic cleavage. It is believed that the structural and energetic information disclosed in this work should be useful in understanding chemical and biological functions of organic nitrites.

Key words [Benzyl nitrite](#) [Chemical affinity](#) [O—NO bond energy](#) [Titration calorimetry](#)

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