

三水硝酸镝与苯并-15-冠-5在丙酮中配合行为的研究

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**摘要** 本文为进一步弄清Dy(NO<sub>3</sub>)<sub>3</sub>·3H<sub>2</sub>O与B15C5在丙酮中的配合行为,作者用改进的半微量相平衡方法,研究了Dy(NO<sub>3</sub>)<sub>3</sub>·3H<sub>2</sub>O-B15C5-CH<sub>3</sub>COCH<sub>3</sub>三元体系在18℃时的溶解度,并进一步分离制备配合物,研究了配合物的红外光谱,热力学等性质.

**关键词** [红外分光光度法](#) [热力学性质](#) [冠式化合物](#) [硝酸盐](#) [丙酮](#) [稀土金属络合物](#) [络合物](#)

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## Studies on coordination behavior between dy (NO<sub>3</sub>)<sub>3</sub>·H<sub>2</sub>O and crown ether B15C5 in acetone

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**Abstract** The solubilities of the ternary Dy(NO<sub>3</sub>)<sub>3</sub>·3H<sub>2</sub>O-(benzo-15-crown-5)-Me<sub>2</sub>CO system at 18℃ were studied through the study of phase equilibrium using the modified semimicro method. The results indicated that the solubility curve of this system consists of 2 branch lines, the long branch corresponds to solid Dy(NO<sub>3</sub>)<sub>3</sub>·benzo-15-crown-5·3H<sub>2</sub>O·2Me<sub>2</sub>CO; the short one to solid benzo-15-crown-5. The curve of refractive indexes for saturated solns. also consists of 2 branch lines, which corresponds to the 2 branch lines of solubility curve. No complex species with different Dy/crown ratio was found. The behavior of water in the equilibrium system has been examined. The results indicate that the mole ratio, H<sub>2</sub>O/Dy(NO<sub>3</sub>)<sub>3</sub>, is always 3:1 either in liquid or solid phase. Dy(NO<sub>3</sub>)<sub>3</sub>·benzo-15-crown-5·3H<sub>2</sub>O·0.65Me<sub>2</sub>CO was isolated. The properties of this complex were examined by IR spectra, DTA, TG and DSC. The enthalpies of desolvation and thermal decomposition were determined by DSC. The apparent activation energy of the thermal decomposition was 117.46 kJ/mol from DSC curves using Kissinger method.

**Key words** [INFRARED SPECTROPHOTOMETRY](#) [THERMODYNAMIC PROPERTIES](#) [CROWN ETHER COMPOUNDS](#) [NITRATE](#) [ACETONE](#) [RARE EARTH METAL COMPLEX](#) [DYSPROSIUM COMPLEX](#)

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