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摘要：本文研究以钒(V)—二苯偶氮脒酰肼(DPCO)—溴化十六烷基三甲铵(CTMAB)为络合体系，分光光度法测定聚烯烃中的钒(V)，实验结果表明，以pH值为6.0的醋酸-醋酸钠作为缓冲溶液，络合物的最大吸收峰位于535nm处，钒(V)含量在0~30 μ g/25mL范围内服从比尔定律，其表观摩尔吸收系数 $\epsilon_{535}=4.23 \times 10^4$ L/mol/cm相关系数 $r=0.99998$ 。采用硫脲-盐酸羟胺作为联合掩蔽剂，消除干扰离子的影响。人工合成的平均回收率为104.12%，RSD为1.60%。聚丙烯、聚乙烯中钒(V)的加标平均回收率分别为101.78%和101.72%，RSD分别为3.74%和2.15%。

关键词：二苯偶氮脒酰肼，分光光度法，聚烯烃树脂，钒(V)

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Determination of vanadium(V) in polyolefine with DPCO-CTMAB by spectrophotometry

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Abstract: In this work, the complex system of V(V)-DPCO-CTMAB was studied and the method of spectrophotometry was used to determine the Vanadium(V) in polyolefine. When the value of pH is 6.0 in the HAc-NaAc buffer solution, the maximum absorption wavelength of complex locates at 535nm, Beer's law is obeyed when the concentration of Vanadium(V) is between 0 and 30 μ g/25mL, the apparent molar absorption coefficient is $\epsilon_{535}=4.23 \times 10^4$ L/mol/cm, the correlation coefficient is $r=0.99998$. In order to eliminate the interference of interfering ions, thiocarbamide and hydrochloric hydroxide amic were used for combined screening agents. The recovery rate of the artificial synthetic sample is 104.12%. The relative standard deviation (RSD) is 1.60%. The average recovery rate of Vanadium(V) with the standard addition method in polyethylene and polypropylene is 101.78% and 101.72%, the RSD is 3.74% and 2.15%.

Key words: Diphenyl carbazone, Spectrophotometry, Polyolefine Resins, Vanadium(V)

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