

新试剂5-(2'-氨基-4'-羟基苯偶氮)邻苯二甲酰肼(AHPP)的合成及其光度法测定钴

马会民,黄月仙,梁树权

中国科学院化学研究所

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**摘要** 本文新试剂5-(2'-氨基-4'-羟基苯偶氮)邻苯二甲酰肼的合成,并研究了该试剂用于光度法测定钴的反应条件,钴与试剂在pH7.7-9.0(0.06mol.L<sup>-1</sup>Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub>-HCl缓冲介质)时形成稳定配合物,最大吸收位于542nm处,摩尔吸光率为5.7×10<sup>4</sup>L.mol<sup>-1</sup>.cm<sup>-1</sup>,配合物的组成为1:2的Co:AHPP,钴浓度在0-1.02×10<sup>-4</sup>mol.L<sup>-1</sup>范围内符合Beer'slaw.试验了共存离子的影响,发现除Cu(II),Ni(II)略有干扰(可掩蔽)外,其它常见离子均允许大量存在,该法直接用于不锈钢和维生素B<sub>12</sub>中钴的测定.

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## Synthesis of 5-(2'- amino- 4'hydroxyphenylazo) - 2, 3- dihydro- 1, 4-phthalazinedione and its use in photometric determination of cobalt

MA HUIMIN,HUANG YUEXIAN,LIANG SHUQUAN

**Abstract** A new reagent, 5-(2'-amino-4'-hydroxyphenylazo)-2,3-dihydro-1,4-phthalazinedione (AHPP), was synthesized by diazotization coupling of luminol with m-aminophenol in weak acidic media (pH 5-7). The structure of AHPP was confirmed with IR, elemental anal. and other phys. methods. AHPP and its Co-complex exhibit max. absorption at 456 and 542 nm, resp. in pH 7.7~9.0 buffered solution (Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub>-HCl). Various parameters such as optimum acidity, amount of AHPP, and effects of surfactants and diverse ions, for cobalt photometric determination were studied. In the complex, the ratio of Co to AHPP is 1:2 using both Job's continuous variation and molar ratio methods. The proposed method was applied to the determination of cobalt in stainless steel and vitamin B<sub>12</sub> with satisfactory results.

**Key words** [COLORIMETRIC METHOD](#) [COBALT](#) [HYDRAZIDE](#) [BENZENE AZO COMPOUNDS](#) [LUMINOL](#) [O-BENZENEDICARBOXYLIC ACID P](#) [FLUORESCENT REAGENT](#)

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