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固相配位化学反应研究**XXXIX.** 四氰合镍酸钾与固体有机酸在室 温下的固相反应

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摘要 本文用红外、紫外可见漫反射、X射线粉末衍射和四极质谱等实验手段,
研究了四氰合镍酸钾一水合物与草酸、丙二酸、反丁烯二酸、丁二酸、己二酸的固相反应,发现K~2[Ni(CN)~4].H~2O与一些固体酸在室温下就发生反应,生成Ni(CN)~2.xH~2O,
并放出HCN气体。由产物与反应物相对含量大小,得到固体有机酸的酸性强弱顺序为:
草酸二水合物>丙二酸>反丁烯二酸>丁二酸>己二酸。讨论了可能的反应机制。

关键词 配位化学反应 固相配位化学 红外 漫反射 紫外 草酸 四极质谱 X射线粉末衍射 丙二酸 反丁烯二酸 丁二酸 己二酸 反应机理

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Solid state reactions of coordination compounds XXXIX. The solid state reactions between K~2[Ni(CN)~4].H~2O and some organic acids at room temperature

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Abstract In this paper, the solid state reactions between potassium tetracyanonickelate(II) and oxalic, malonic, fumaric, succinic, adipic acid are studied, followed by modern techniques such as IR, DRS, XRD and MS. It is found that the reactions occur at room temperature. Ni(CN)~2.xH~2O is obtained as a main product and HCN gas is detected. The acidity of these solid organic acids decreases in the order: oxalic>malonic>fumaric>succinic>adipic acid. Proton is believed to play an important role in the reaction process. And the possible mechanism is discussed.

Key words INFRA-RED DIFFUSE REFLECTION UV-DETECTOR OXALIC ACID MALONIC ACID BUTANEDIOIC ACID HEXANEDIOIC ACID REACTION MECHANISM

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