

水泵橡胶密封件中多环芳烃的研究 Study on Polycyclic Aromatic Hydrocarbons in Pump Rubber Seals

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关键词: 多环芳烃 水泵 橡胶密封件 分析

摘要: 简要分析了多环芳烃(PAHs)的危害及水泵橡胶密封件中PAHs的来源,首次采用了水泵密封件中多环芳烃的超声萃取气相色谱-质谱(GC-MS)联用的测定方法。优化了超声萃取条件,确定了16种PAHs的分离和测定条件。样品经过超声波萃取,采用选择离子监测模(SIM)定性和定量检测水泵密封件中多环芳烃,用内标法对PAHs进行定量分析。用加标回收方法试验确定方法的准确度。结果表明:16种PAHs平均回收率为80.9%~103.8%,RSD为4.80%~15.7%,该方法可满足水泵密封件多环芳烃的检测要求。 This paper briefly introduced the harmfulness of polycyclic aromatic hydrocarbons (PAHs) and the source of PAHs in the pump rubber seals, and established a measuring method of 16 kinds of PAHs in pump rubber seals, by ultrasonic extraction coupled with GC-MS. The conditions for extraction were optimized, and the separation and determination conditions of 16 kinds of PAHs were defined. Through ultrasonic extraction, the selected ion monitor(SIM) was used to detect in pump rubber seals and quantitatively analyzed with the inner standard method. PAHs were spiked to evaluate the accuracy of this method. The average recovery varies from 80.9%~103.8% while the relative standard derivation of the precision experiment ranges from 4.80%~15.7%. This method is sensitive, accurate and suitable for the determination of PAHs in pump rubber seals.

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