

研究简报

# 液相色谱-气压光电电离源质谱法同时测定电子电气产品中16种多环芳烃残留

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**摘要** 采用HPLC-APPI-MS/MS法同时测定电子电器产品中橡胶, 塑料等材料中的16种多环芳烃(PAHs)残留量。样品经粉碎后, 用甲醇提取, 通过C<sub>18</sub>小柱过柱净化, 以液相色谱分离, 大气压光电电离源离子化电离串联质谱进行检测, 采用多反应监测模式同时测定16种多环芳烃浓度。该方法定量下限(LOQ, S/N>10)为0.1~0.2 μg·g<sup>-1</sup>, 回收率为72.0%~89.6%, 变异系数小于10%。在0.1~10.0 μg·L<sup>-1</sup>浓度范围内, 峰面积与浓度呈良好线性(r: 0.993 2~0.999 2)。

**关键词** [液相色谱-大气压光电电离源质谱](#) [电子电气产品](#) [多环芳烃](#)

**分类号** [O 657.63](#); [S 767.3](#)

## Simultaneous Quantitative Determination of 16 Polycyclic Aromatic Hydrocarbons (PAHs) by HPLC-APPI-MS/MS

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**Abstract** An HPLC-APPI (+) MS-MS method was developed by solid phase extraction decontamination for the residue determination of PAHs. The sample was extracted by the methyl alcohol after comminution and operating for decontamination by C<sub>18</sub> cartridges. Samples were detected by a gradient elution flowing with a APPI positive mode detector at MRM(naphthalene *m/z* 128, acenaphthylene *m/z* 152, acenaphthene *m/z* 154, fluorene *m/z* 166, phenanthrene *m/z* 178, anthracene *m/z* 178, fluoranthene *m/z* 202, pyrene *m/z* 202, benz(a)anthracene *m/z* 228, chrysene *m/z* 228, benzo(b)fluoranthene *m/z* 252, benzo(k)fluoranthene *m/z* 252, benzo(a)pyrene *m/z* 252, benzo(g,h,i)perylene *m/z* 276, indeno(1,2,3,c,d)pyrene *m/z* 276, dibenz(a,h)anthracene *m/z* 278). The LOQs (S/N>10) of 16 PAHs residues in the negative meat sample are 0.1~0.2 mg·kg<sup>-1</sup>. The recovery values is 72.0%-89.6%. The response for 16 PAHs is linear in the range of 0.1-10.0 μg·L<sup>-1</sup>, and the correlation coefficient is excellent (r: 0.993 2-0.999 2).

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**Key words** [HPLC-APPI-MS/MS](#) [electrical](#) [and](#) [electronic](#) [equipments](#) [polycyclic](#) [aromatic](#) [hydrocarbons](#)

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