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中华人民共和国国家标准

GB/T 32207—2015

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气相色谱用电子捕获检测器测试方法

Standard practice for use of electron-capture detectors in gas chromatography

中华人民共和国
国家标准
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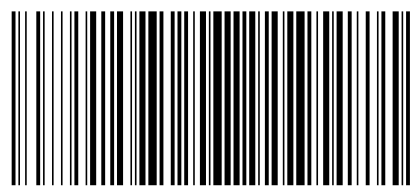
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前 言

本标准按照 GB/T 1.1—2009 给出的规则起草。

本标准由中国机械工业联合会提出。

本标准由全国工业过程测量控制和自动化标准化技术委员会(SAC/TC 124)归口。

本标准起草单位:北京东西分析仪器有限公司、中国仪器仪表行业协会、上海仪盟电子科技有限公司、上海仪电分析仪器有限公司、重庆川仪分析仪器有限公司、上海天美科学仪器有限公司、辽宁科瑞色谱技术有限公司、北京分析仪器研究所。

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气相色谱用电子捕获检测器测试方法

1 范围

本标准规定了气相色谱电子捕获检测器的测试与评价方法。
本标准适用于气相色谱仪用电子捕获检测器。

2 规范性引用文件

下列文件对于本文件的应用是必不可少的。凡是注日期的引用文件,仅注日期的版本适用于本文件。凡是不注日期的引用文件,其最新版本(包括所有的修改单)适用于本文件。

GB 18871—2002 电离辐射防护与辐射源安全基本标准

CGA P-1 压缩气体容器的安全操作规范(Safe handling of compressed gases in containers)

CGA G-5.4 工作现场氢气管道系统使用标准(Standard for hydrogen piping systems at consumer locations)

CGA P-9 惰性气体:氩气,氮气和氦气(The inert gases: argon, nitrogen and helium)

CGA V-7 确定工业混合气体阀出口连接的标准方法(Standard method of determining cylinder valve outlet connections for industrial gas mixtures)

CGA P-12 低温液体的安全操作(Safe handling of cryogenic liquids)

HB-1999 压缩气体手册(Handbook of compressed gases)

3 符号和缩略语

下列符号和缩略语适用于本文件。

A_i ——组分的峰面积, $A \cdot \text{min}$, $\text{Hz} \cdot \text{min}$ 或 $\text{mV} \cdot \text{min}$;

c_{max} ——线性上限对应的浓度, pg/mL ;

c_{min} ——线性下限对应的浓度, pg/mL ;

D ——最小检测限, pg/mL ;

D' ——最小检测量, pg ;

ECD ——电子捕获检测器(electron capture detectors);

F ——法拉第常数, $9.65 \times 10^4 \text{ C/mol}$;

F ——用湿式流量计测定的色谱柱或检测器的气体流量;

F_a ——室温下色谱柱或检测器出口的载气流量, mL/min ;

F_c ——由检测器温度校正后的载气流量, mL/min ;

f ——频率, Hz ;

GC ——气相色谱仪(gas chromatograph);

I ——峰高, A 或 mV ;

I_{ref} ——外界参比电流, A ;

I_0 ——恒定电流, A ;

K_{rel} ——相对电子捕获率;