

LH-025 标准溶液配制仪的质控样比对

目的：通过铜元素质控样品来检验 LH-025 全自动标准溶液配制仪所配制的标准曲线定量准确度偏差情况，实验选择了稳定的仪器设备和元素溶液，得到了稳定可靠的数据，结果表明 LH-025 全自动标准溶液配制仪配制的溶液差不多或者优于手工配制的溶液。

测试单位：辽宁省环境监测站测试中心

测试仪器：耶拿 ZEE nit700 原子吸收

溶液配制仪器：LH-025 标准溶液配制仪

实验设计：

- 1、以 1000mg/L 铜元素标准溶液为母液，单标法自动逐级稀释，配制浓度梯度为 0.5、1、1.5、2、2.5、3 mg/L 溶液。上机检测建立标准曲线。
- 2、铜元素质控样品，浓度 1.02 ± 0.04 mg/L，用新建立的标曲测算数据偏差，与手工比对

实验结果：

LH-025 全自动标准溶液配制仪所配制的标准溶液线性 R2 值为 0.9996，详见原始数据。

质控样品偏差，手工配制标曲偏差 3.6%，LH-025 配制标曲偏差 1%。详细见原始数据（old 为手工数据，new 为 LH-025 数据）

实验原始数据报告见下

AAS ZEE nit 700 #150Z70266

Flame

Report file: E:\2015---\Pro_212
 Program version: 3.22.0 Printed on: 2016/08/31 14:55
 Recording started on 2016/08/31 14:47 GMT+8.0
 Operator:
 Laboratory:
 Code:
 Technique: Flame
 Remarks:

Method parameters

Cu

Method CB Cu / 100mm
 Created on 2016/08/31 Time 14:47
 Program ---

Spectrometer

Line	324.8 nm	Slit	1.2 nm
Lamp type	HCL	Lamp current	3.0 mA
Integr. mode	Rep. mean	Integr. time	3.0 s
PMT	283.0 V	D2-HCL curr.	---
AZ time	3.0 s	Peak smoothing	20/25
Delay	5.0 s	Analy. mode	Single beam
BC ampl.level:	---	HC ampl.level:	---

Flame

Flame	C2H2/air		
Fuel flow	50 l/h		
Burner type	100 mm		
Burner height	6 mm	Burner angle	0 ?
Nebulizer rate	5.0 mL/min		
Injection switch	off		

QC parameters

QC type	Conc. check	QC check samp. 2	
QC check samp. 1		Conc.	1.0000 mg/L
Conc.	1.0000 mg/L	Error limit	? 50.00%
Error limit	? 10.00%	Reaction	flag + continue
Rep. measurement	off	QC std.2 no.	2(1.000 mg/L)
QC std.1 no.	4(2.000 mg/L)	QC std.2 limit	? 10.00%
QC std.1 limit	? 10.00%		
QC std. act.	flag + continue	Reaction	flag + continue
Expect. blank abs.	0.0100? 0.0100		
QC precision	off	Reaction	off
		QC Recal.factor	Off

Calibration settings

Calib. meth	Standard calib.	Calibr. unit	mg/L
No. standards	6	Conversion fac.	1
Type of standards	---	Standard prep.	Premixed
		Blank correct.	---
		AZ between std.	off
		Recalib. std. no.	4
Output unit	mg/L	Conversion fac.	1
Calib. stat.	Mean	Meas. cycles	3
		Blind cycles	1
Stock sol. 1	---	Stock sol. 2	---
Stock sol. 3	---	Stock sol. 4	---
Type of cal. curve	linear	Intercept	calculated
Weighted cal.	off	Grubbs stat.	off
Check of cal. curve	no outlier test		

Sample statistics

Stat. mode	Mean	Meas. cycles	3
Confid. level	95.4 %	Blind cycles	1
Grubbs stat.	off		

Sample table: Means of abs./emis. values Rep. mean

Cu

No	Name	Pos	Abs	Mean value SD	RSD/%	Abs	Peak height SD	RSD/%
1	old-1.02+-0.04	##	0.1029	0.00026	0.254			
2	new-1.02+-0.04	##	0.1058	0.00075	0.717			

Sample table: Concentration/content

Cu

A: analysed sample O: original sample

No	Name	weight/g SV/mL	ASDF Pre-DF	Conc.	A: mg/L O: mg/L	CI	SD	RSD/%	Rem
1	old-1.02+-0.04		---	A:	0.9824	0.03457	0.00254	0.259	
	2016/08/31 14:52	##	1.000	O:	0.9824	0.03457	0.00254	0.259	
2	new-1.02+-0.04		---	A:	1.010	0.03441	0.00740	0.733	
	2016/08/31 14:52	##	1.000	O:	1.010	0.03441	0.00740	0.733	

Calibration standards

Cu

No	Name	State	Pos	Conc./ mg/L	Abs	SD	RSD/%
1	Cal-Zero	(--)	##	0.000	M: -0.00021	0.000134	61.68
2	Cal-Std1	(--)	##	0.500	M: 0.05351	0.000288	0.538
3	Cal-Std2	(--)	##	1.000	M: 0.1062	0.000320	0.302

4	Cal-Std3	(--)	##	1.500	M:0.1584	0.000100	0.064
5	Cal-Std4	(--)	##	2.000	M:0.2079	0.001120	0.539
6	Cal-Std5	(--)	##	2.500	M:0.2589	0.001367	0.528
7	Cal-Std6	(--)	##	3.000	M:0.3071	0.001813	0.590

Calibration function 1 2016/08/31 14:51 Calibration (Mean value)

Abs=k1+k2*conc

k1=0.002287

k2=0.102453

Recal. factor: ---

Slope	0.10245 Abs/(mg/L)	R2-adjusted	0.9996
sc0	0.02023 mg/L	Charact. conc.	0.04256 (mg/L)/1%A
Lower limit	0 mg/L	Upper limit	3.30 mg/L
Detection limit	---	Deter. limit	---

