



License ID 459712
Client ID MET0558
User Metrohm

Program version viva 2.0 - 54
2016-03-11 09:01:41 UTC+1

Method parameters

Method AB 416 Determination of As(V)
Method saving date 2016-03-11 09:01:32 UTC+1
Method version 1
Method group Main group
Method status original
Method saved by (full name) Metrohm International Headquarters
Method saved by (short name) Metrohm

START

Main track

General

Workplace view

Current view on

Track view for live window

Live display 1 Main track

Live display 2 Main track

Electrode test on

Application note

Measuring solution: 10 mL sample 2 mL electrolyte (c(sulfamic acid) = 1 mol/L, c(citric acid) = 0.5 mol/L, c(KCl) = 0.45 mol/L)

Sample data variables

Name	Type	Assignment	Fixed value	Comment	Monitoring
ID1	Text	ID1		Sample identification 1	off
ID2	Text	ID2		Sample identification 2	off
ID3	Text	ID3		Sample identification 3	off
Sample type	Text	Sample type		Sample type	off
Sample amount	Number	Sample amount		Sample amount	off
Sample amount unit	Text	Sample amount unit		Sample amount unit	off

Name ID1
Type Text
Assignment on. ID1
Fixed value off.
Check at start on
Comment Sample identification 1

Name ID2
Type Text
Assignment on. ID2
Fixed value off.
Check at start on



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Comment Sample identification 2

Name **ID3**

Type Text

Assignment on. ID3

Fixed value off.

Check at start on

Comment Sample identification 3

Name **Sample type**

Type Text

Assignment on. Sample type

Fixed value off.

Check at start on

Comment Sample type

Name **Sample amount unit**

Type Text

Assignment on. Sample amount unit

Fixed value off.

Check at start on

Comment Sample amount unit

Name **Sample amount**

Type Number

Assignment on. Sample amount

Fixed value off.

Check at start on

Comment Sample amount

Variable monitoring off

Lower limit

Upper limit

Message

Display message on

Record message on

Message by e-mail off

E-mail template

Subject Message from viva - method 'New method 3' - command 'Main track'

Acoustic signal off

Action off

Cancel determination on

Cancel determination and series off

Command comment

AB 416/2: Method 1 - Determination of As(V) with scTRACE Gold

Call sample



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CALL

Call text	Track name	Sample type	Condition
Call sample	Sample	off Sample	off

CALL

Call additions

Call text	Track name	Sample type	Condition
Measure additions	Standard addition	off Sample	off

VA TRACK VA track

Return immediately off

LOOP

Replications

Stop criteria

Max. run number on
Max. run number 2
Maximum run time off
Signal assessment for DT off
Condition off

SQW

ASV

General/Hardware

Device

Device name 884_1
Device type 884 Professional VA

Sensors/Electrodes

Working electrode scTRACE Gold
Sensor type scTRACE Gold
Reference electrode Reference electrode
Auxiliary electrode Auxiliary electrode
Electrode test on

Stirrer

Stirring rate 2000 min⁻¹
Hydrodynamic measurement off

Pretreatment

Stirring time 10 s

Cyclovoltammetric pretreatment

Start potential -0.2 V
Vertex potential 1.0 V
Sweep rate 1 V/s
Cycles 5
Duration 12.00 s

Potentiostatic pretreatment

Potential 1 -1.0 V
Waiting time 1 60 s
Potential 2 -0.25 V



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Waiting time 2 5.0 s
Potential 3 off V
Waiting time 3 0.0 s
Potential 4 off V
Waiting time 4 0.0 s
Potential 5 off V
Waiting time 5 0.0 s
Equilibration time 5.0 s

Sweep

Start potential -0.3 V
End potential 0.4 V
Potential step 0.012 V
Frequency 100 Hz
Potential step time 0.010 s
Sweep rate 1.200 V/s
Pulse amplitude 0.02 V
Sweep duration 0.58 s

Post-treatment

Cleaning

Cleaning potential off V
Cleaning time 0.0 s

Standby potential

Standby potential off V

Potentiostat

Current measuring range

Highest range 2 mA
Lowest range 20 μ A
Automatically select optimum current measuring range on

TRACK

Sample

Return immediately off
Delete old data off

STIR & PURGE

Initial mixing

Device

Device name 884_1
Device type 884 Professional VA

Stir

Stirring rate 2000 min⁻¹
Switch on on
Switch off off
Duration off

Purge

Switch on off
Switch off on
Duration off



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**ADD
SAMPLE**

Add sample

Addition

Add manually on
Display standard message on
Display message defined by the user off
Already added off
Add with dosing device off

ADD AUX

Add electrolyte

Auxiliary solution

Solution Electrolyte
Volume 2 mL
Include volume in calculation on

Addition

Add manually on
Display standard message on
Display message defined by the user off
Already added off
Add with dosing device off

CALL VA

Measure sample

Call text Measure sample
Track name VA track
Condition off

TRACK

Standard addition

Return immediately off
Delete old data off

LOOP

Variations

Stop criteria

Max. run number on
Max. run number 2
Maximum run time off
Signal assessment for DT off
Condition off

**STIR &
PURGE**

Addition mixing

Device

Device name 884_1
Device type 884 Professional VA

Stir

Stirring rate 2000 min⁻¹
Switch on on
Switch off off
Duration off

Purge

Switch on off



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Switch off on
Duration off

ADD STD Add standard

Standard
Solution Standard
Addition increments
Number 1
Addition volume 1 0.05 mL
Addition
Add manually on
Display standard message on
Display message defined by the user off
Already added off
Add with dosing device off

CALL VA Measure additions

Call text Measure additions
Track name VA track
Condition off

TRACK Shut off

Return immediately off
Delete old data off

STIR & PURGE STIR & PURGE OFF

Device
Device name 884_1
Device type 884 Professional VA
Stir
Stirring rate 2000 min⁻¹
Switch on off
Switch off on
Duration off
Purge
Switch on off
Switch off on
Duration off

MAIN VALVE N2 OFF

Device
Device name 884_1
Device type 884 Professional VA
Action
Open off
Close on

Exit track



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EXIT

CALL Exit shut off

Call text	Track name	Sample type	Condition
Exit shut off	Shut off	off Sample	off

ERROR Error track

CALL Error shut off

Call text	Track name	Sample type	Condition
Exit shut off	Shut off	off Sample	off

Evaluation parameters

Substances

ASV

Substances - Recognition

Substance	Active	Characteristic potential	Tolerance	Min. width	Max. width	Min. measured quantity
As(V)	on	0.05 V	0.05 V	0.01 V	0.5 V	5 nA

ASV

Substances - Baseline

Substance	Baseline type	Start base point	End base point
As(V)	Linear	Automatically	Automatically

Standards

Standards

Name Standard

As(V) 1 mg/L

Calibration

General

Calibration method Standard addition
Blank value correction with evaluation off
quantity

ASV



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Calibration curves

Substance	Evaluation quantity	Curve type	Weighting
As(V)	Height	Linear regression	on

Results

Substance concentration in the sample

ASV

Substance	Decimal places	Assignment
As(V)	3	RS01

Results

Additional results

Result	Places	Prefix	Unit
Peak potential	3		V
Height	2	#	A
RSD of the heights of all replications	1		%
Area	2	#	C
RSD of the areas of all replications	1		%
Start base point	3		
End base point	3		
Standardized area	3		
Standardized height	3		
Total volume	3	#	L
Zero-order coefficient	3		
First-order coefficient	3		
Second-order coefficient	3		
Fourth-order coefficient	3		
Coefficient of determination	5		
Substance concentration in measuring vessel	2	#	
RSD of the substance concentration in measuring vessel	1		%
Amount of substance	2	#	
RSD of the substance concentration in the sample	1		%
Effective addition volume of the standard solution for the evaluation ratio	2	#	L
RSD of the effective addition volume of the standard solution for the evaluation ratio	1		%
Calibration factor DT	2	#	
RSD of the calibration factor DT	1		%
Effective addition volume of the sample solution for the evaluation ratio	2	#	L
RSD of the effective addition volume of the sample solution for the evaluation ratio	1		%

Database

Name database viva