



License ID 4570896
Client ID 001-srv-mnet06
User Metrohm

Program version viva 3.0 - 69
2025-03-14 10:40:19 UTC+1

Method parameters

Method AB 440 Activation and cleaning of Bi drop
Method saving date 2025-03-14 10:30:00 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 check off

Application note

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	10	Sample amount	off
Sample amount unit	Text	Sample amount unit	mL	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
Comment Sample identification 2



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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 on. mL
Check at start on
Comment Sample amount unit

Name **Sample amount**
Type Number
Assignment on. Sample amount
Fixed value on. 10
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 440/1: Activation and cleaning of Bi drop electrode

CALL **Call sample**



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

VA TRACK VA track

Return immediately off

LOOP Replications

Stop criteria

Max. run number on
Max. run number 10
Maximum run time off
Signal assessment for DT off
Condition off

DP DP

General/Hardware

Device

Device name 884_1
Device type 884 Professional VA

Sensors/Electrodes

Working electrode RDE
Sensor type RDE/SSE
Reference electrode Reference electrode
Auxiliary electrode Auxiliary electrode
Electrode check off

Stirrer

Stirring rate 2000 min⁻¹
Hydrodynamic measurement off

Pretreatment

Stirring time 5 s

Cyclovoltammetric pretreatment

Start potential 0.2 V
Vertex potential -1 V
Sweep rate 1 V/s
Cycles 10
Duration 24.00 s

Potentiostatic pretreatment

Potential 1 -2 V
Waiting time 1 15 s
Potential 2 off V
Waiting time 2 0.0 s
Potential 3 off V
Waiting time 3 0.0 s
Potential 4 off V
Waiting time 4 0.0 s



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Potential 5 off V
Waiting time 5 0.0 s
Equilibration time 5 s

Sweep

Start potential -0.8 V
End potential -1.2 V
Potential step 0.006 V
Potential step time 0.1 s
Sweep rate 0.060 V/s
Pulse amplitude 0.05 V
Pulse time 0.04 s
Measuring time 0.02 s
Sweep duration 6.67 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 200 μ A
Automatically select optimum current measuring range on

TRACK

Sample

Return immediately off
Delete old data off

**ADD
SAMPLE**

Add ultrapure water

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 cleaning electrolyte

Auxiliary solution

Solution Cleaning electrolyte
Volume 1 mL
Include volume in calculation on

Addition

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



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Add with dosing device off

**STIR &
PURGE**

Initial purge

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 off

Duration on

Time 300 s

CALL VA

Measure sample

Call text Measure sample

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



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EXIT Exit track

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
Error shut off	Shut off	off Sample	off

Evaluation parameters

General

DP

Data processing

Smoothing 1
Reversed peaks off

Curve evaluation

Fixed point evaluation off

Substances

DP

Substances - Recognition

DP

Substances - Baseline

DP

Calibration curves

Results

Substance concentration in the sample

DP

Results



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Additional results

Result	Places	Prefix	Unit
Peak potential	3		V
Height	2	#	A
RSD of the heights of all replications	1		%
Measured value	2	#	A
RSD of the measured values 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		
Standardized measured value	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