



## Method parameters

Method . . . . . AB401 Suppressor (CVS, DT) semiautomated  
Method saving date . . . . . 2024-02-20 15:46:58 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 . . . . . on

#### 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

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

Name . . . . . ID3

Type . . . . . Text



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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

**Command comment**

AB-401/3: Determination of suppressor by CVS-DT semiautomated

**CALL**

**CALL ADD VMS**

Call text	Track name	Sample type	Condition
Dose VMS	Dose VMS	off Sample	off

**CALL  
COND**

**Conditioning in VMS**

Call text . . . . . Conditioning in VMS  
Track name . . . . . VA track  
Stop criteria  
Evaluation quantity . . . . . on  
Voltammetry command . . . . . CVS  
Substance . . . . . Suppressor  
Standard deviation . . . . . 0.5 %  
Number of runs . . . . . on  
Number of runs . . . . . 20  
Action . . . . . Cancel command  
Run time . . . . . off  
Condition . . . . . off

**CALL VMS**

**Measure VMS**

Call text . . . . . Measure VMS  
Track name . . . . . VA track  
Condition . . . . . off

**CALL**

**Sample or standard?**

Call text	Track name	Sample type	Condition
DT Determination	DT Determination	on Sample	off
DT Calibration	DT Calibration	on Standard	off

**VA TRACK**

**VA track**

Return immediately . . . . . off



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## CVS

### CVS

#### General/Hardware

##### Device

Device name . . . . . 894\_1  
Device type . . . . . 894 Professional CVS

##### Sensors/Electrodes

Working electrode . . . . . RDE  
Sensor type . . . . . RDE/SSE  
Reference electrode . . . . . Reference electrode  
Auxiliary electrode . . . . . Auxiliary electrode  
Electrode check . . . . . on

##### Stirrer

Stirring rate . . . . . 2500 min<sup>-1</sup>  
Hydrodynamic measurement . . . . . on

#### Pretreatment

Stirring time . . . . . 5.0 s

##### Cyclovoltammetric pretreatment

Start potential . . . . . 0.2 V  
Vertex potential . . . . . 1.625 V  
Sweep rate . . . . . 1 V/s  
Cycles . . . . . off  
Duration . . . . . - s

##### Potentiostatic pretreatment

Potential 1 . . . . . off V  
Waiting time 1 . . . . . 0.0 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  
Potential 5 . . . . . off V  
Waiting time 5 . . . . . 0.0 s  
Equilibration time . . . . . 5.0 s

#### Sweep

Start potential . . . . . 1.625 V  
1st vertex potential . . . . . -0.175 V  
2nd vertex potential . . . . . 1.625 V  
Potential step . . . . . 0.006 V  
Potential step time . . . . . 0.060 s  
Sweep rate . . . . . 0.100 V/s  
Preparation cycles . . . . . 1  
Measuring cycles . . . . . 2  
Sweep duration . . . . . 109.08 s

#### Post-treatment



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#### Cleaning

Cleaning potential . . . . . off V  
Cleaning time . . . . . 0.0 s

#### Standby potential

Standby potential . . . . . off V

#### Potentiostat

##### Current measuring range

Highest range . . . . . 224 mA  
Lowest range . . . . . 20 µA

#### TRACK

##### DT Determination

Return immediately . . . . . off  
Delete old data . . . . . off

#### LOOP

##### Sample addition

###### Stop criteria

Max. run number . . . . . off  
Maximum run time . . . . . off  
Signal assessment for DT . . . . . on  
Voltammetry command . . . . . CVS  
Substance . . . . . Suppressor  
Signal ratio Q/Q(0) . . . . . 0.45  
Condition . . . . . off

#### ADD SAMPLE DT

##### ADD SAMPLE DT

###### Addition increments

Number . . . . . 1  
Addition volume 1 . . . . . 0.010 mL

###### Addition

Add manually . . . . . off  
Add with dosing device . . . . . on  
Dosing unit . . . . . 2 mL Standard or sample  
Dosing rate . . . . . 2.0 mL/min  
Filling rate . . . . . maximum mL/min

#### CALL VA

##### Measure sample

Call text . . . . . Measure sample  
Track name . . . . . VA track  
Condition . . . . . off

#### TRACK

##### DT Calibration

Return immediately . . . . . off  
Delete old data . . . . . off

#### LOOP

##### Standard addition

###### Stop criteria

Max. run number . . . . . off  
Maximum run time . . . . . off



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Signal assessment for DT . . . . . on  
Voltammetry command . . . . . CVS  
Substance . . . . . Suppressor  
Signal ratio Q/Q(0) . . . . . 0.45  
Condition . . . . . off

**ADD STD    ADD STANDARD DT**

Standard  
Solution . . . . . Standard or sample  
Addition increments  
Number . . . . . 1  
Addition volume 1 . . . . . 0.010 mL  
Addition  
Add manually . . . . . off  
Already added . . . . . off  
Add with dosing device . . . . . on  
Dosing rate . . . . . 2.0 mL/min  
Filling rate . . . . . maximum mL/min

**CALL VA    Measure standard**

Call text . . . . . Measure standard  
Track name . . . . . VA track  
Condition . . . . . off

**TRACK    Dose VMS**

Return immediately . . . . . off  
Delete old data . . . . . off

**ADD AUX    ADD VMS**

Auxiliary solution  
Solution . . . . . VMS  
Volume . . . . . 100 mL  
Include volume in calculation . . . . . on  
Addition  
Add manually . . . . . off  
Already added . . . . . off  
Add with dosing device . . . . . on  
Dosing rate . . . . . maximum mL/min  
Filling rate . . . . . maximum mL/min

**TRACK    Fill DU VMS**

Return immediately . . . . . off  
Delete old data . . . . . off

**LQH    DU 50 mL VMS  
General/Hardware**

Dosing device  
Dosing unit . . . . . 50 mL VMS



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#### Parameters

Function . . . . . Fill  
Port . . . . . 2  
Rate . . . . . maximum mL/min

#### TRACK Fill DU Standard/Sample

Return immediately . . . . . off  
Delete old data . . . . . off

#### LQH DU 2 mL Std or sample

##### General/Hardware

##### Dosing device

Dosing unit . . . . . 2 mL Standard or sample

##### Parameters

Function . . . . . Fill  
Port . . . . . 2  
Rate . . . . . maximum mL/min

#### TRACK Shut OFF

Return immediately . . . . . off  
Delete old data . . . . . off

#### STIR Stirrer OFF

##### Device

Device name . . . . . 894\_1

Device type . . . . . 894 Professional CVS

##### Stirrer

Stirring rate . . . . . 2500 min<sup>-1</sup>

##### Action

Switch on . . . . . off

Switch off . . . . . on

Duration . . . . . off

Time . . . . . 300 s

#### EXIT Exit track

#### CALL Exit shut off

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

#### CALL Fill Dosing Units

Call text	Track name	Sample type	Condition
Fill DU VMS	Fill DU VMS	off Sample	off



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Call text	Track name	Sample type	Condition
Fill DU Standard/Sample	Fill DU Standard/Sample	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

#### CVS

#### Data processing

Smoothing . . . . . 1  
Reversed peaks . . . . . off

#### Curve evaluation

Fixed point evaluation . . . . . off

### Substances

#### CVS

#### Substances - Recognition

Substance	Active	Characteristic potential	Tolerance	Min. width	Max. width	Min. measured quantity	Sweep direction
Suppressor	on	0.2 V	0.2 V	0.01 V	1 V	200 pA	anodic

#### CVS

#### Substances - Baseline

Substance	Baseline type	Start base point	End base point
Suppressor	Horizontal	0.8 V	-0.05 V

### Standards

#### Standards

Name	Standard or sample
Suppressor	10 mL/L

### Calibration

#### General



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Calibration method . . . . . DT  
Blank value correction with evaluation . . . . . off  
quantity

## CVS

### Calibration curves

Substance	Evaluation quantity	Curve type for standard	Weighting
Suppressor	Area	Nonlinear regression	on
Begin of evaluation standard	Curve type for sample	Begin of evaluation sample	Evaluation ratio
1.10	Nonlinear regression	1.10	0.5

## Results

### Substance concentration in the sample

#### CVS

Substance	Decimal places	Assignment
Suppressor	2	RS01

## Results

### 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		





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Result	Places	Prefix	Unit
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