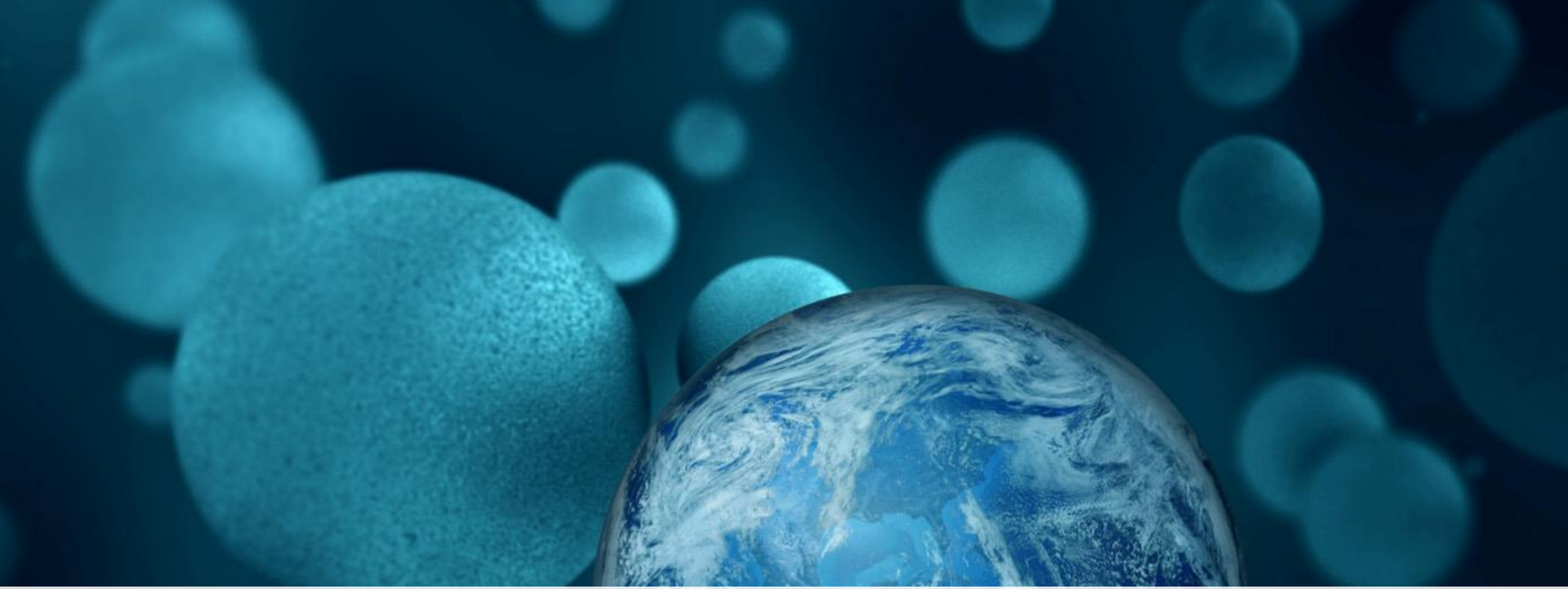

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Introducing AppsLab Library

Methods, Workflows and More

Agenda

- Introduction
- AppsLab Library Overview
- From Web to Lab – One-click workflow concept
- Interact and Share
- Summary

Typical Questions in Method Development

How can I make my method more environmentally friendly?

How can I develop a new method to separate X and Y?

I could do this separation using an IC. Are there other ways to achieve this?

How can I make my method faster?

How can I make my method more cost - efficient?

Situation / Solution

Situation:

- Increasing need for state-of-the-art, faster, more efficient resolution of analytical separation challenges
- Numerous websites with column information, but very few providing complete application data and methods
- Method transfer from the web to the laboratory typically requires adaptations.
- Thermo Fisher Scientific publishes dozens of application notes per week, resulting in 1000's every year
- Application notes contain a lot of valuable information for method development

Problem:

- No central searchable online repository for application material

Solution:

- On-line application search engine with ready-to-run analytical methods: Thermo Scientific™ AppsLab Library of Analytical Applications

AppsLab Library…

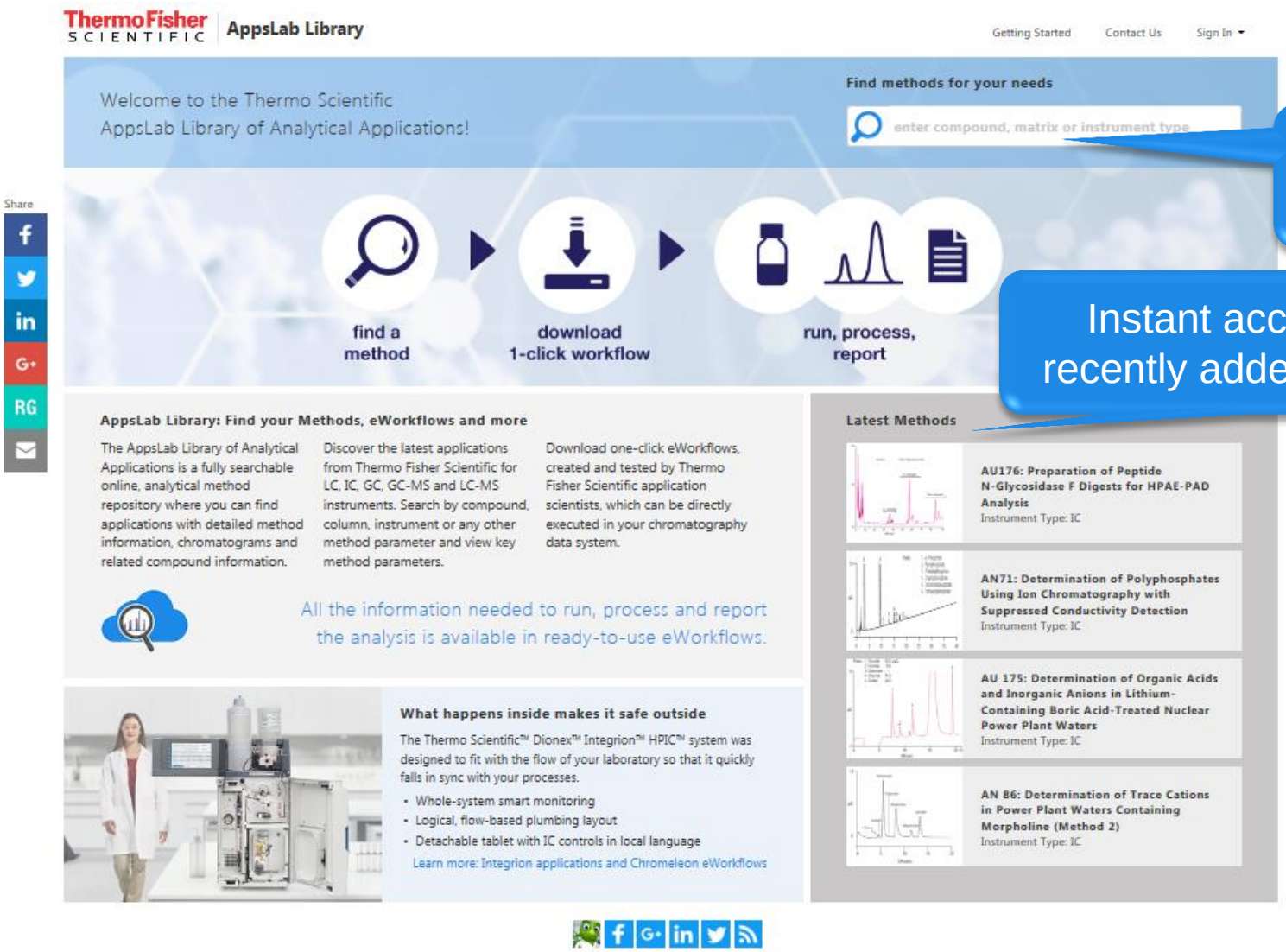
- … is an online search engine for Thermo Scientific applications
- … provides comprehensive application information and ready-to-run analytical methods
- … is a central repository for Thermo Scientific chromatography and MS application information

AppsLab Library Overview

AppsLab Library
methods, workflows and more

ThermoFisher SCIENTIFIC

AppsLab Library Entry Page – Google Type Search



Google-type Search

Instant access to most recently added applications

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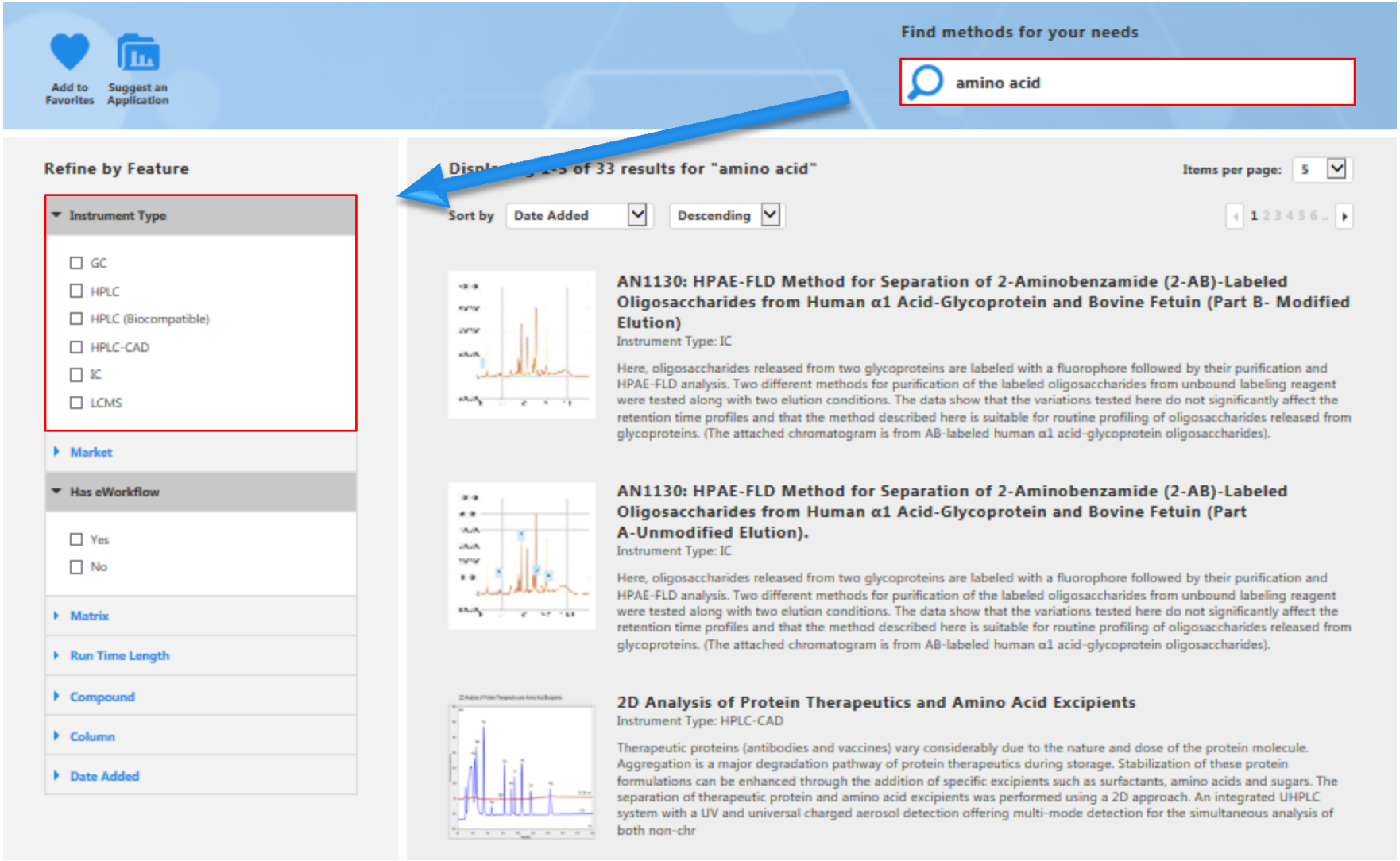
Cross-Technique Search Results



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Filtering Results to Focus

Add to Favorites

Suggest an Application

Find methods for your needs

chlorate

Refine by Feature

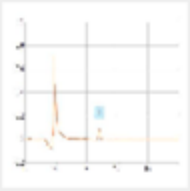
- Instrument Type
  - IC
  - ICMS
- Market
- Has eWorkflow
  - Yes
  - No
- Matrix
- Run Time Length
- Compound
- Column
- Date Added

Displaying 1-5 of 35 results for "chlorate"

Items per page: 5

Sort by Date Added Descending

1 2 3 4 5 6 ...

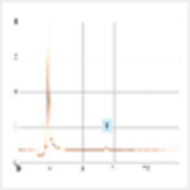


AN1136: Determination of [illegible]te in Drinking Water using a Microbore Reagent Free Ion Chromatography System

Instrument Type: IC

This Application Note expands the scope of [illegible] the linear range and initial demonstration of [illegible] accuracy, precision, detection limit (MDL), an[illegible] perchlorate recovery in field samples. Overal[illegible] specified in U.S. EPA Method 314.0. (This par[illegible]

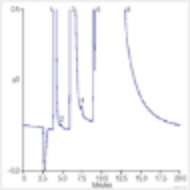
A search can return a large number of results



AU148: Determination of Perchlorate in Drinking Water Using a Reagent-Free Ion Chromatography System (Part B)

Instrument Type: IC

This Application Update updates the EPA Method 314.0 for perchlorate determination in drinking water with an improved suppressor, the Dionex™ AERS 500 suppressor. The Dionex AERS 500 suppressor is a superior suppressor as it provides high capacity, low noise, high backpressure resilience, and fast startup. Moreover, the AERS 500 suppressor minimizes peak dispersion and improves peak efficiency. This document evaluates and describes the linear range and initial demonstration of capability (EPA Method 314.0, Section 9.2). (This part has a one-click workflow using ICS5000 and AS-DV autosampler).



AU 154: Determination of Bromate in Drinking and Mineral Water by Isocratic Ion Chromatography with a Hydroxide Eluent

Instrument Type: IC

Ozone is a powerful drinking water disinfectant that is effective in treating chlorine resistant organisms. Ozonation is an effective disinfection process that is used worldwide, but will produce bromate if the source water contains bromide. Bromate is a potential human carcinogen and its concentration in drinking water is regulated in many countries. This application update shows that bromate, chlorate, and chlorite can be determined with an isocratic hydroxide eluent to easily meet current bromate regulations.

Filtering Results to Focus

Add to Favorites | Suggest an Application

Find methods for your needs

chlorate

Refine by Feature

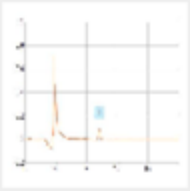
- Instrument Type
  - IC
  - ICMS
- Market
- Has eWorkflow
  - Yes
  - No
- Matrix
- Run Time Length
- Compound
- Column
- Date Added

Displaying 1-5 of 35 results for "chlorate"

Items per page: 5

Sort by Date Added | Descending

1 2 3 4 5 6 ...

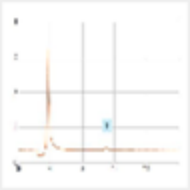


AN1136: Determination of Perchlorate in Drinking Water using a Microbore Reagent Free Ion Chromatography System (Part C)

Instrument Type: IC

This Application Note expands the scope of t
the linear range and initial demonstration of
accuracy, precision, detection limit (MDL), an
perchlorate recovery in field samples. Overal
specified in U.S. EPA Method

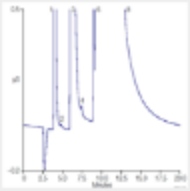
Refine results by applying additional filters



AU148: Determination of Perchlorate in Drinking Water Using a Reagent-Free Ion Chromatography System (Part B)

Instrument Type: IC

This Application Update updates the EPA Method 314.0 for perchlorate determination in drinking water with an improved suppressor, the Dionex™ AERS 500 suppressor. The Dionex AERS 500 suppressor is a superior suppressor as it provides high capacity, low noise, high backpressure resilience, and fast startup. Moreover, the AERS 500 suppressor minimizes peak dispersion and improves peak efficiency. This document evaluates and describes the linear range and initial demonstration of capability (EPA Method 314.0, Section 9.2). (This part has a one-click workflow using ICS5000 and AS-DV autosampler).



AU 154: Determination of Bromate in Drinking and Mineral Water by Isocratic Ion Chromatography with a Hydroxide Eluent

Instrument Type: IC

Ozone is a powerful drinking water disinfectant that is effective in treating chlorine resistant organisms. Ozonation is an effective disinfection process that is used worldwide, but will produce bromate if the source water contains bromide. Bromate is a potential human carcinogen and its concentration in drinking water is regulated in many countries. This application update shows that bromate, chlorate, and chlorite can be determined with an isocratic hydroxide eluent to easily meet current bromate regulations.

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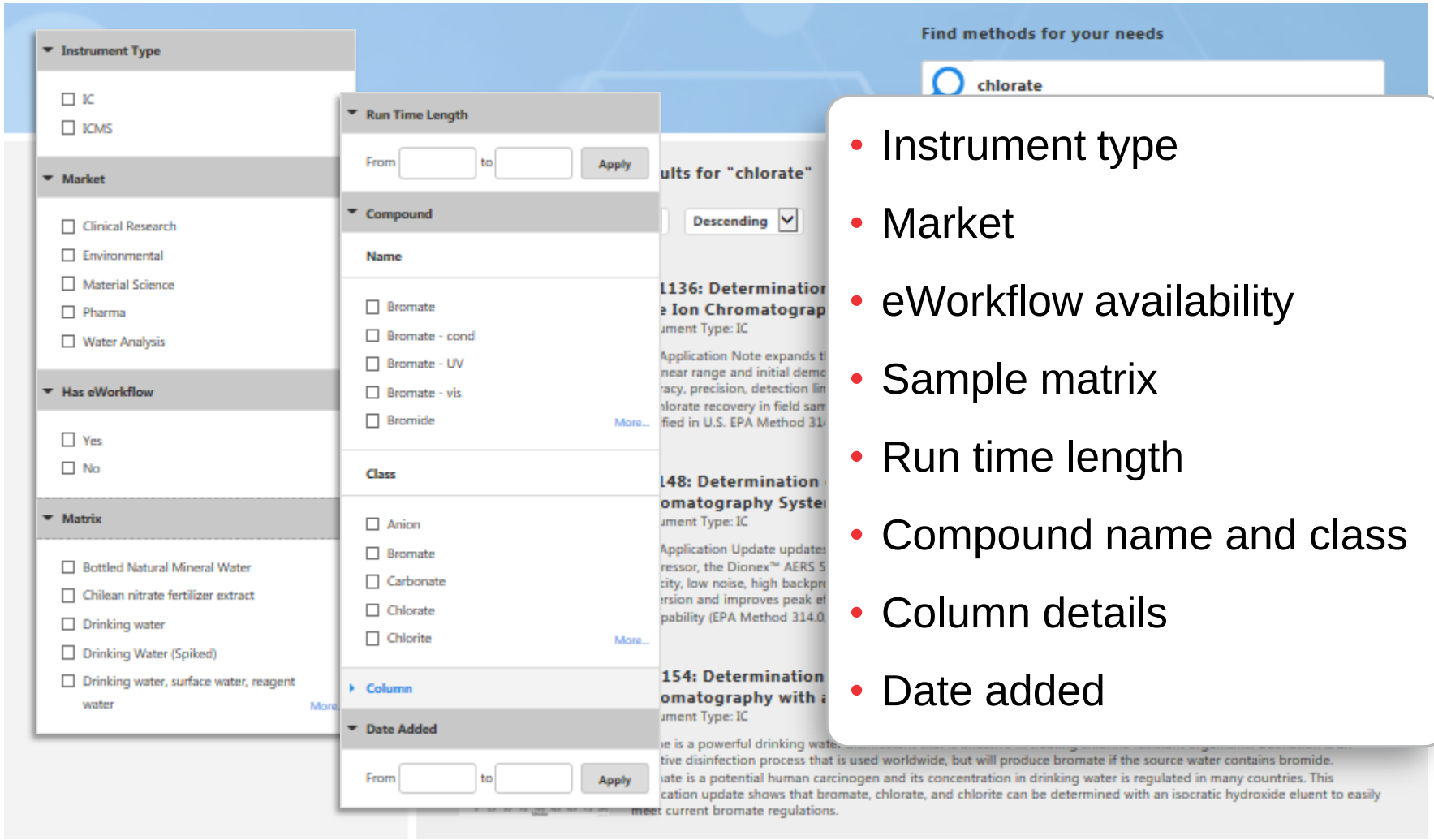
Filtering Results to Focus



- Instrument type
- Market
- eWorkflow availability
- Sample matrix
- Run time length
- Compound name and class
- Column details
- Date added

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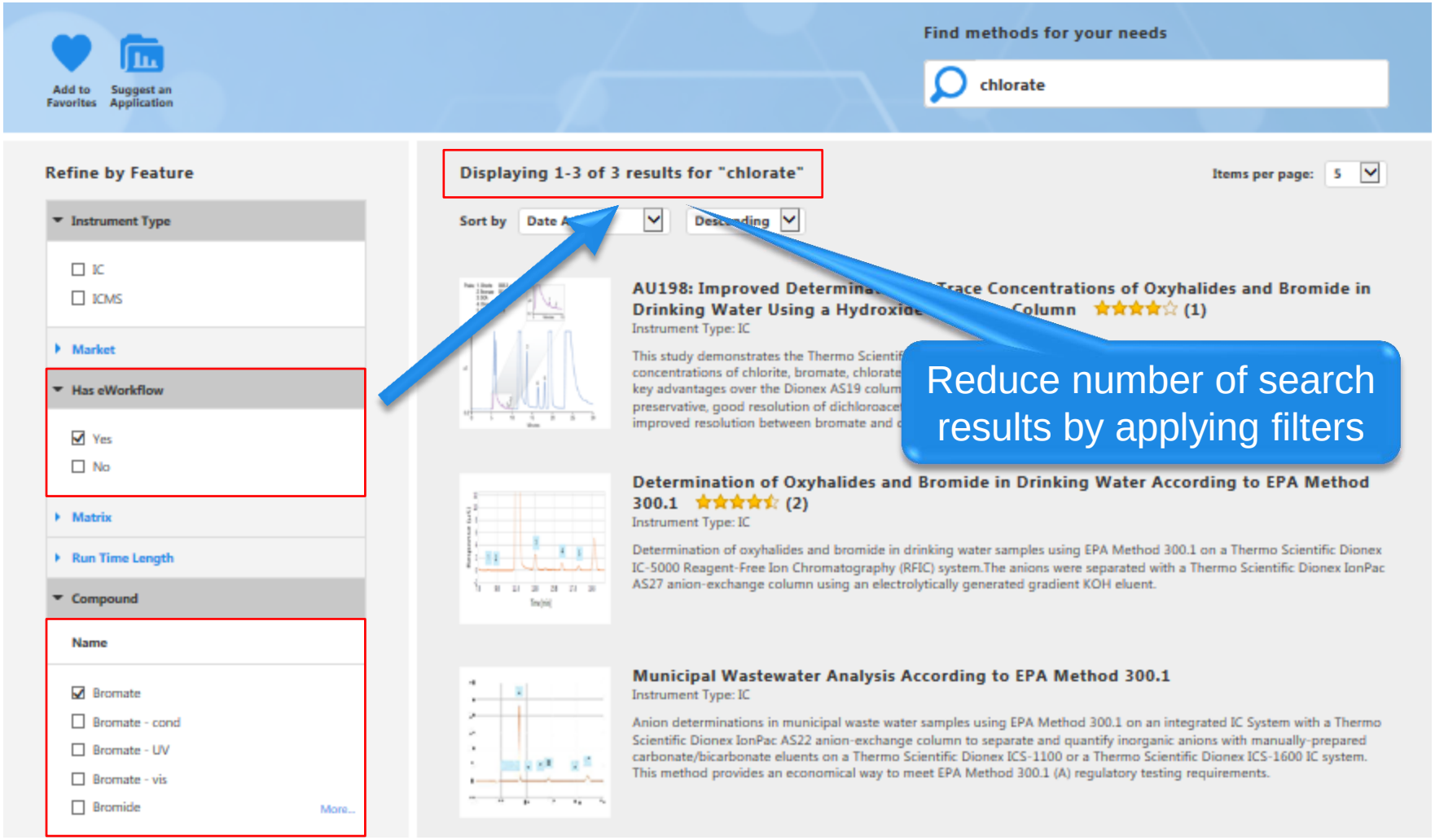
Filtering Results to Focus



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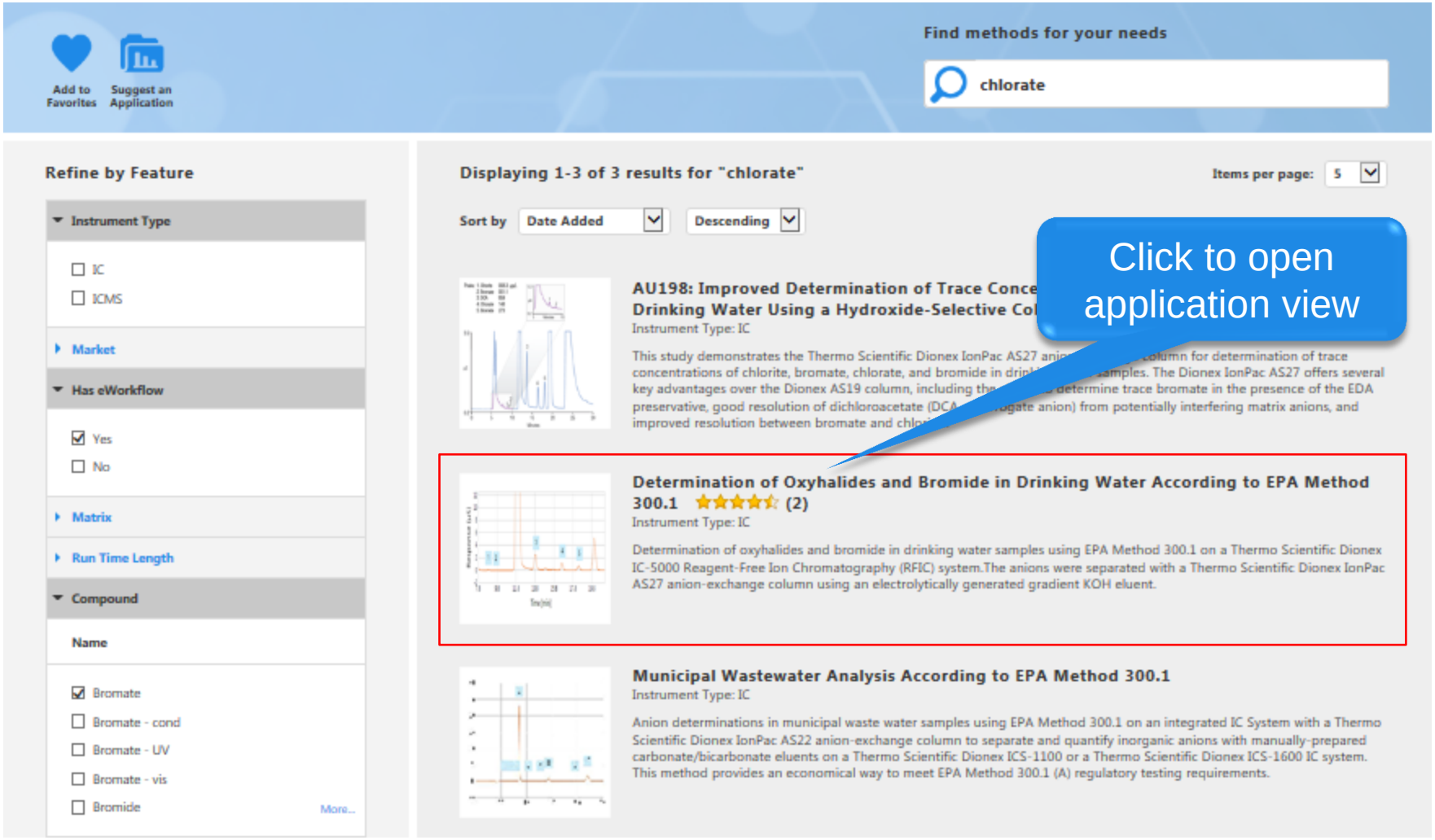
Application View



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Application View

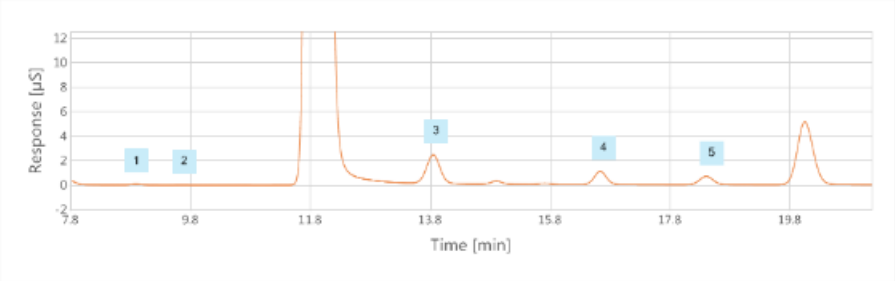
Toolbar, including search

Rate | Ask the Expert | Suggest an Application | Add to Favorites | Download eWorkflow | Create Parts List | Print PDF

Find methods for your needs

enter compound, matrix or instrument type

Determination of Oxyhalides and Bromide in Drinking Water According to EPA Method 300.1 ★★★★½ (2)



Unzoom

Full Size

CD_1

Compounds | Method | System | Downloads | Comments

Compound Number	Compound Name	Compound Class	Retention Time (min)
1	Chlorite	Oxyhalide	8.90
2	Bromate	Oxyhalide	9.70
3	DCA	Surrogate	13.90
4	Chlorate	Oxyhalide	16.70
5	Bromide	Inorganic Anion	18.50

Description

Determination of oxyhalides and bromide in drinking water samples using EPA Method 300.1 on a Thermo Scientific Dionex IC-5000 Reagent-Free Ion Chromatography (RFIC) system.The anions were separated with a Thermo Scientific Dionex IonPac AS27 anion-exchange column using an electrolytically generated gradient KOH eluent.

Market: Environmental; Water Analysis
Keywords: Bromate, Bromide, Chlorate, Chlorite, Disinfection Byproduct, Drinking Water, Environmental, EPA Method 300.1, Ion Chromatography, Water analysis, IonPac AS27
Matrix: Drinking Water (Spiked)
Status: Proof of Concept

Uploaded on 12/22/2014.

For Research Use Only. Not for use in diagnostic procedures.

Tags

Bromate | Bromide | Chlorate | Chlorite | Disinfection Byproduct | Drinking Water | Environmental | EPA Method 300.1 | IC | Inorganic Anion | ion chromatography | IonPac AS27 | Oxyhalide | Water analysis

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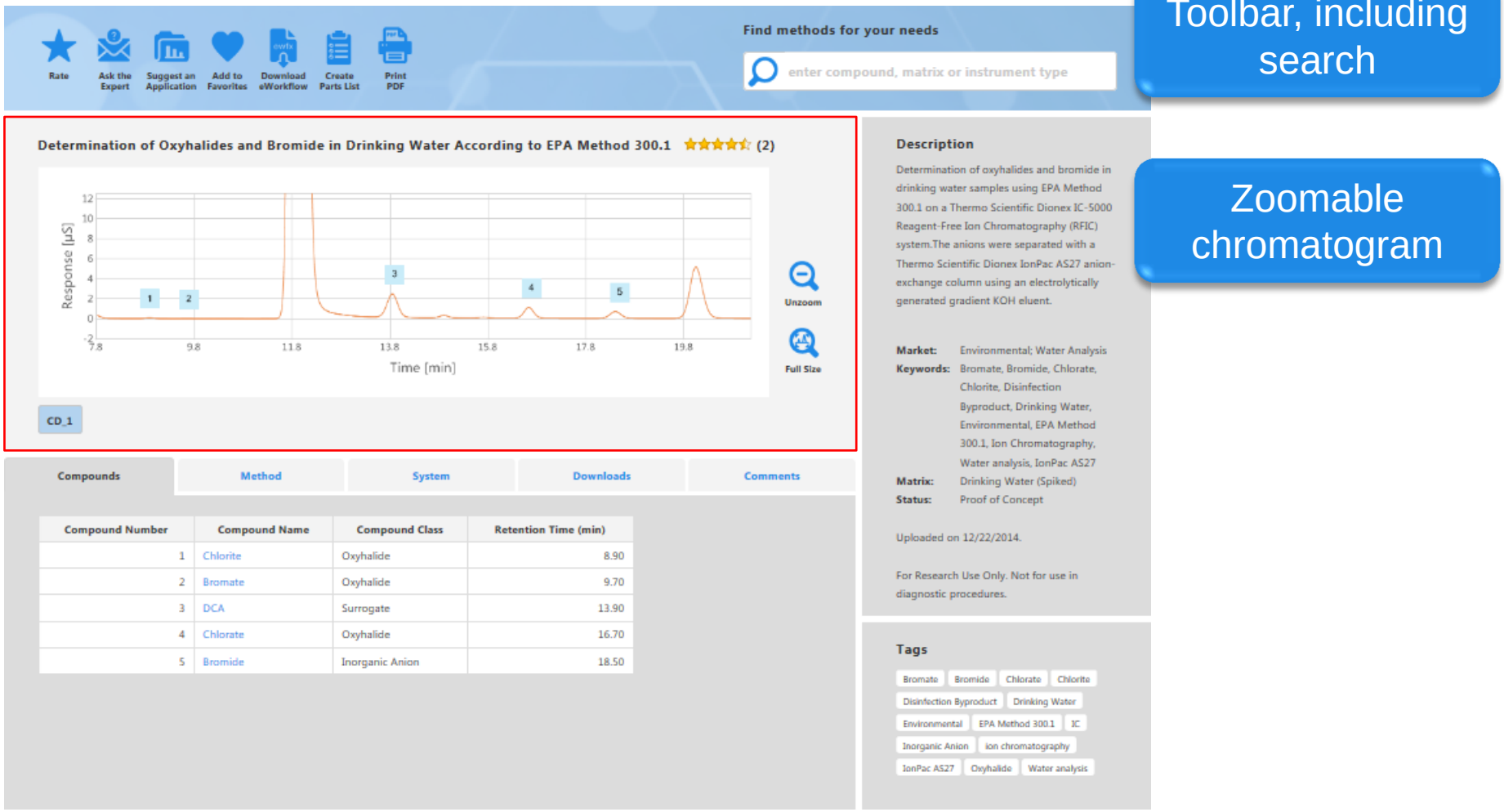
Application View



Toolbar, including search

Zoomable chromatogram

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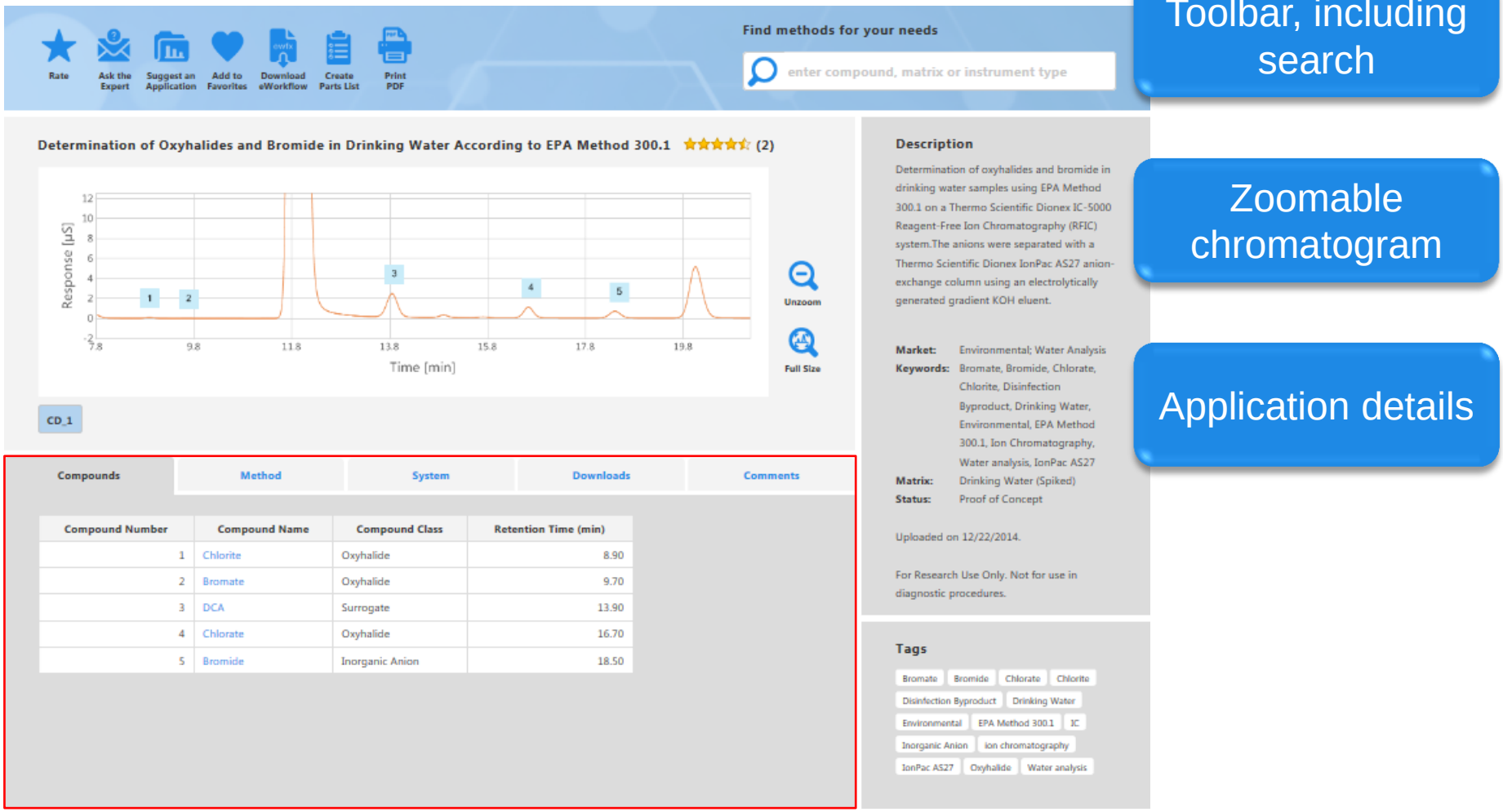
Application View



Toolbar, including search

Zoomable chromatogram

Application details

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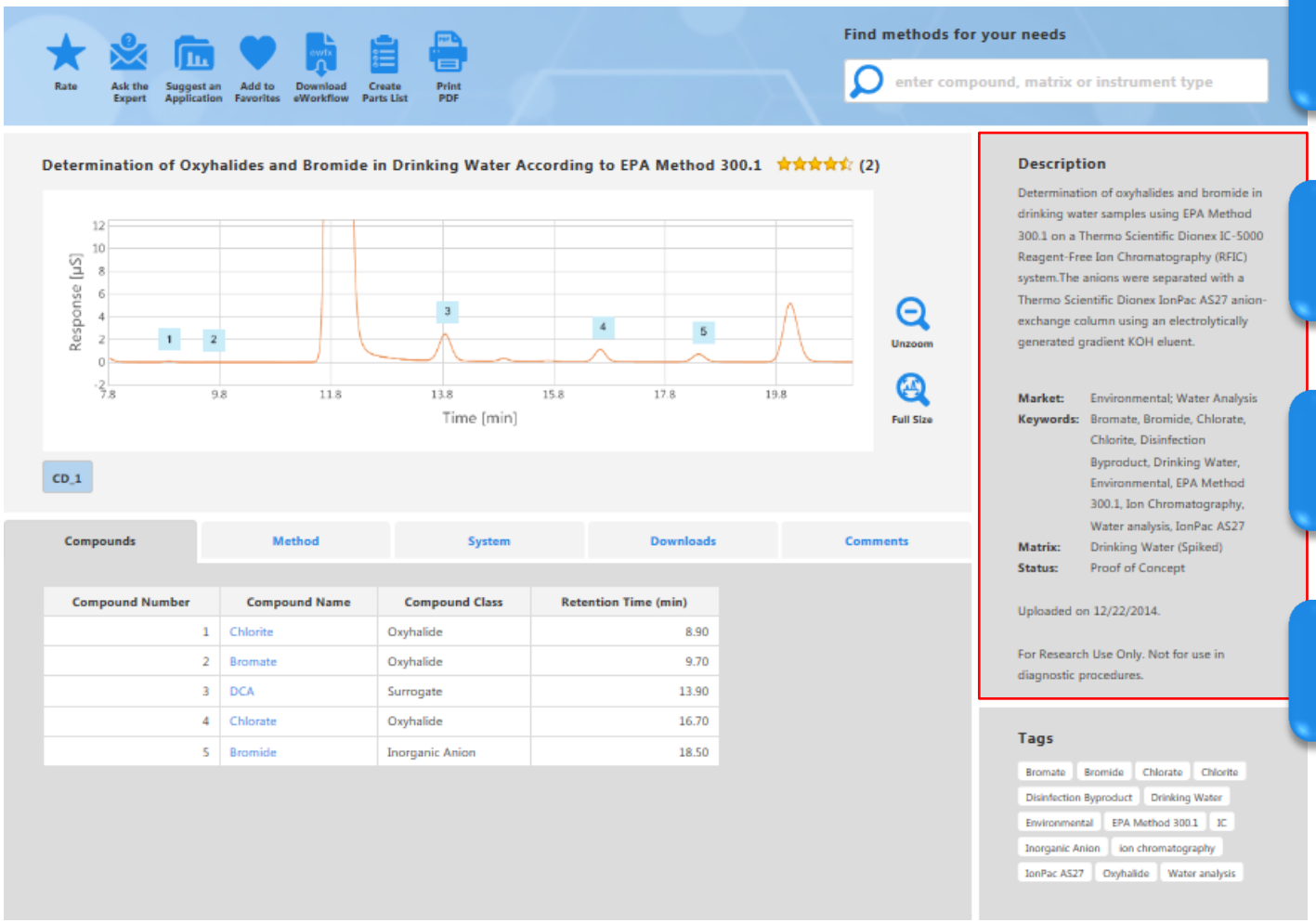
Application View



Toolbar, including search

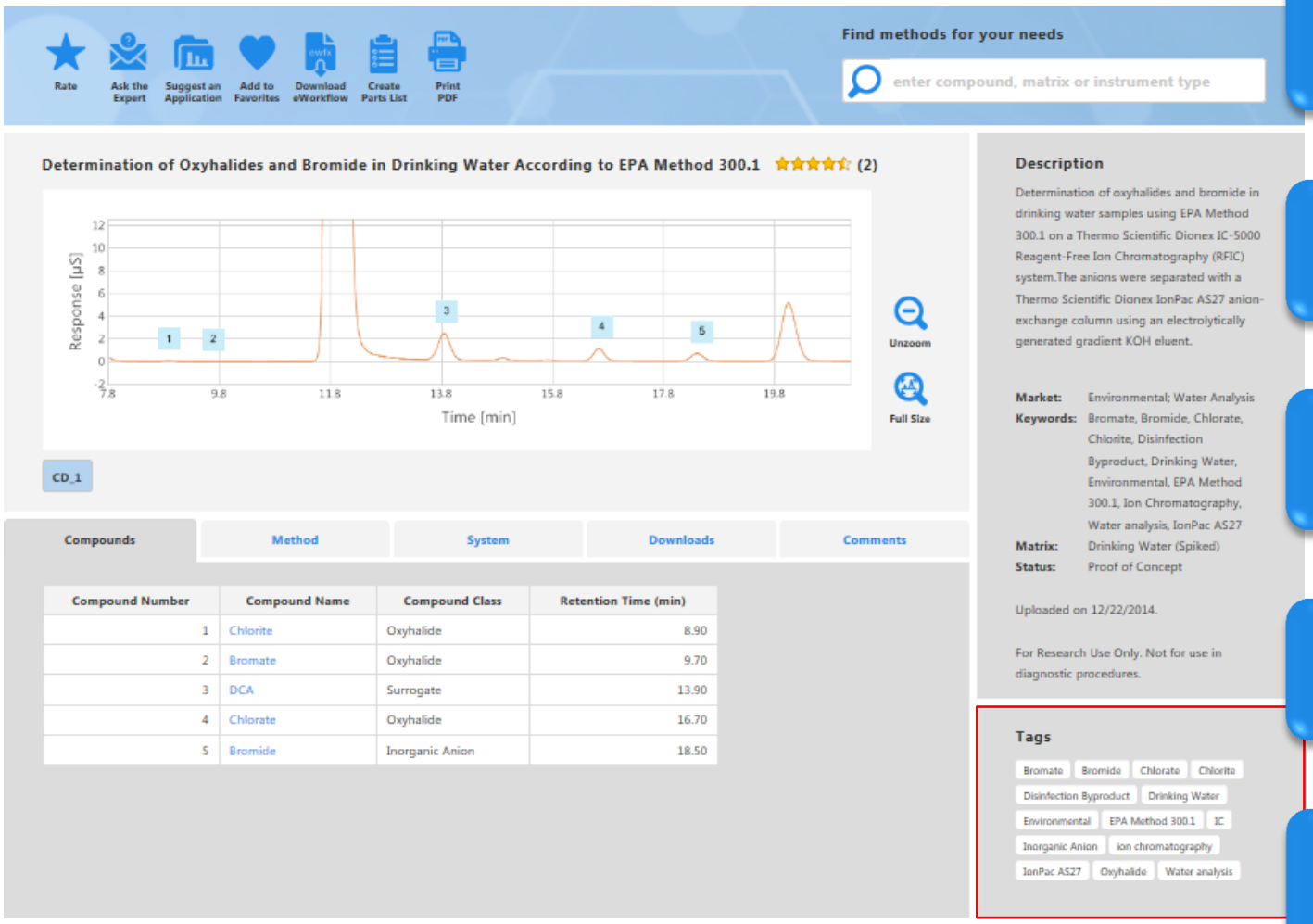
Zoomable chromatogram

Application details

Description

ThermoFisher SCIENTIFIC

Application View



Toolbar, including search

Zoomable chromatogram

Application details

Description

Tags for additional searches

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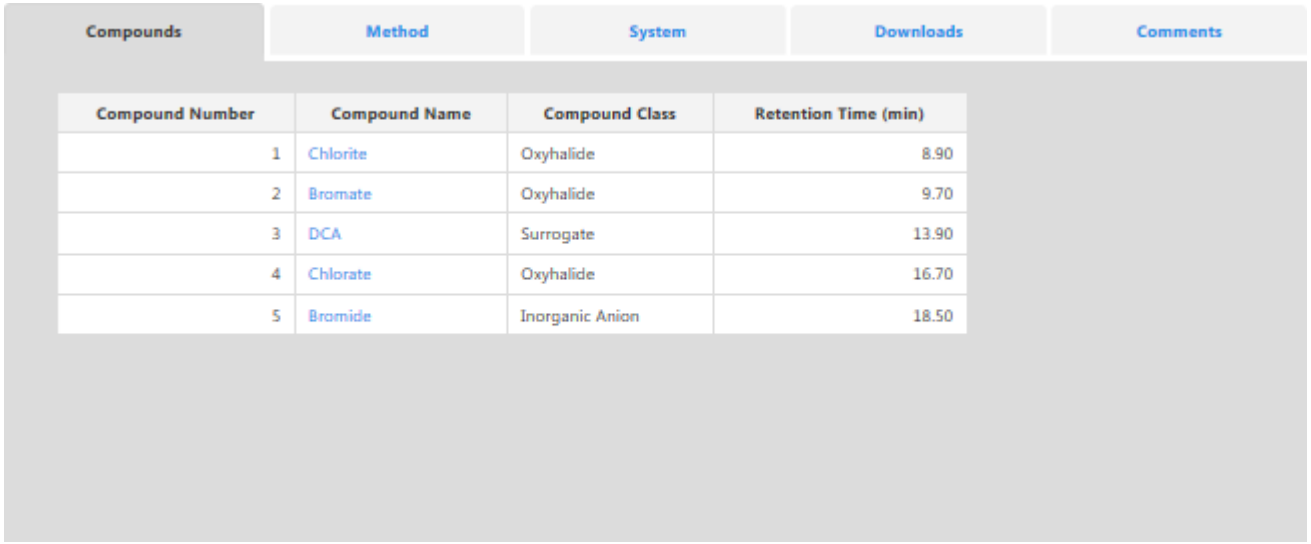
Application Details - Compounds

Compound information

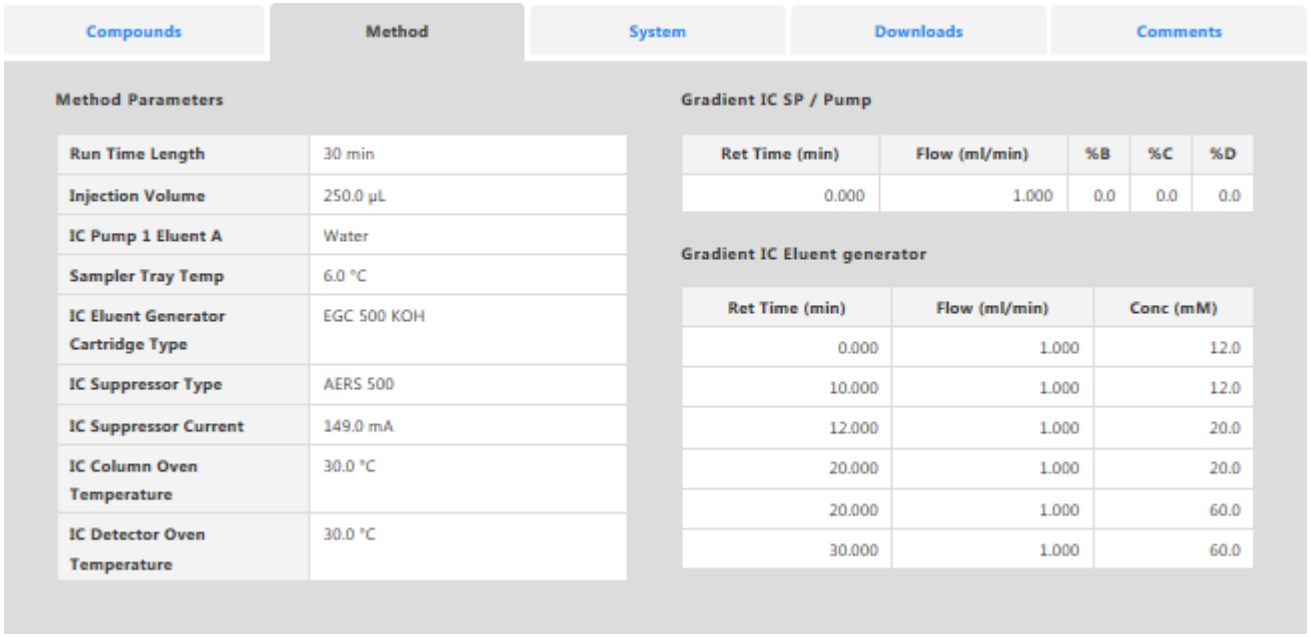


Compounds | Method | System | Downloads | Comments

Compound Number	Compound Name	Compound Class	Retention Time (min)
1	Chlorite	Oxyhalide	8.90
2	Bromate	Oxyhalide	9.70
3	DCA	Surrogate	13.90
4	Chlorate	Oxyhalide	16.70
5	Bromide	Inorganic Anion	18.50

- List of all compounds, including the compound class and retention time

Application Details - Method



Compounds | **Method** | System | Downloads | Comments

Method Parameters

Run Time Length	30 min
Injection Volume	250.0 µL
IC Pump 1 Eluent A	Water
Sampler Tray Temp	6.0 °C
IC Eluent Generator Cartridge Type	EGC 500 KOH
IC Suppressor Type	AERS 500
IC Suppressor Current	149.0 mA
IC Column Oven Temperature	30.0 °C
IC Detector Oven Temperature	30.0 °C

Gradient IC SP / Pump

Ret Time (min)	Flow (ml/min)	%B	%C	%D
0.000	1.000	0.0	0.0	0.0

Gradient IC Eluent generator

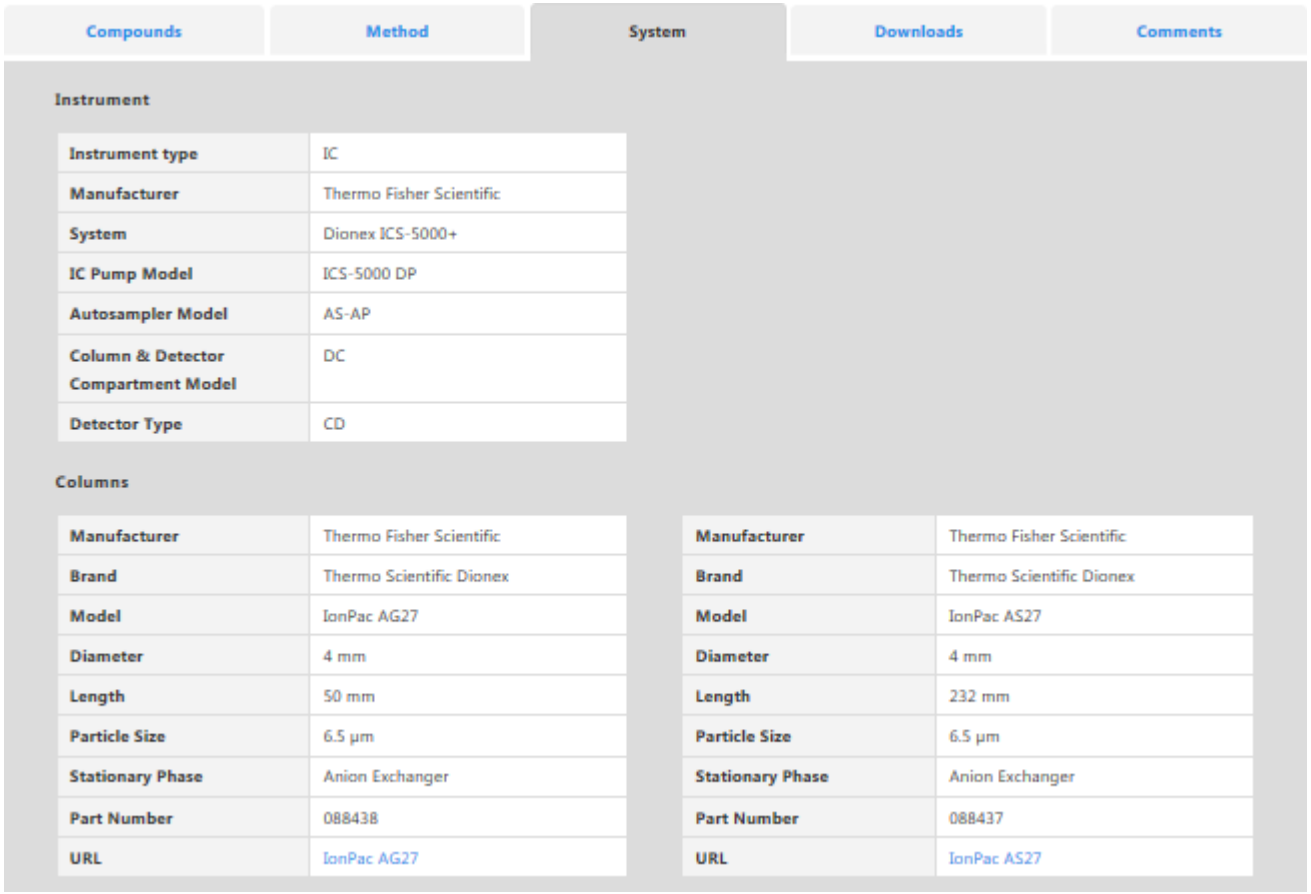
Ret Time (min)	Flow (ml/min)	Conc (mM)
0.000	1.000	12.0
10.000	1.000	12.0
12.000	1.000	20.0
20.000	1.000	20.0
20.000	1.000	60.0
30.000	1.000	60.0

Compound information

Method details

- Detailed overview of method parameters

Application Details - System



Compounds | Method | System | Downloads | Comments

Instrument

Instrument type	IC
Manufacturer	Thermo Fisher Scientific
System	Dionex ICS-5000+
IC Pump Model	ICS-5000 DP
Autosampler Model	AS-AP
Column & Detector Compartment Model	DC
Detector Type	CD

Columns

Manufacturer	Thermo Fisher Scientific
Brand	Thermo Scientific Dionex
Model	IonPac AG27
Diameter	4 mm
Length	50 mm
Particle Size	6.5 µm
Stationary Phase	Anion Exchanger
Part Number	088438
URL	IonPac AG27

Manufacturer	Thermo Fisher Scientific
Brand	Thermo Scientific Dionex
Model	IonPac AS27
Diameter	4 mm
Length	232 mm
Particle Size	6.5 µm
Stationary Phase	Anion Exchanger
Part Number	088437
URL	IonPac AS27

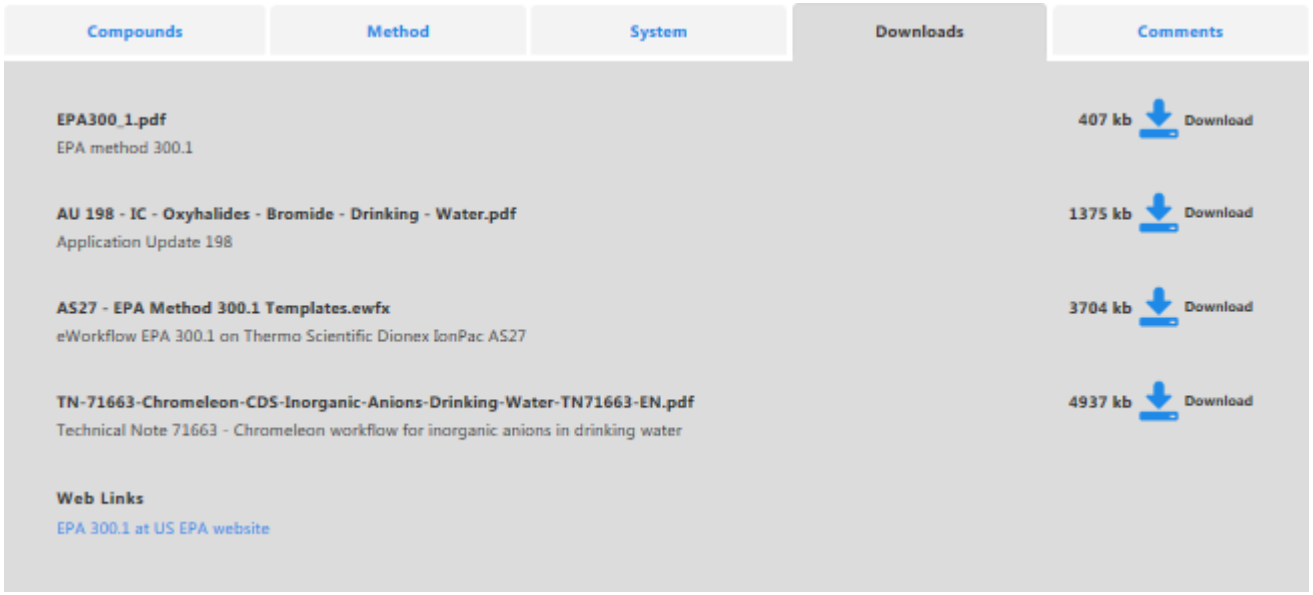
Compound information

Method details

Instruments and consumables

- Details for all instruments, columns and consumables

Application Details - Downloads



Compound information

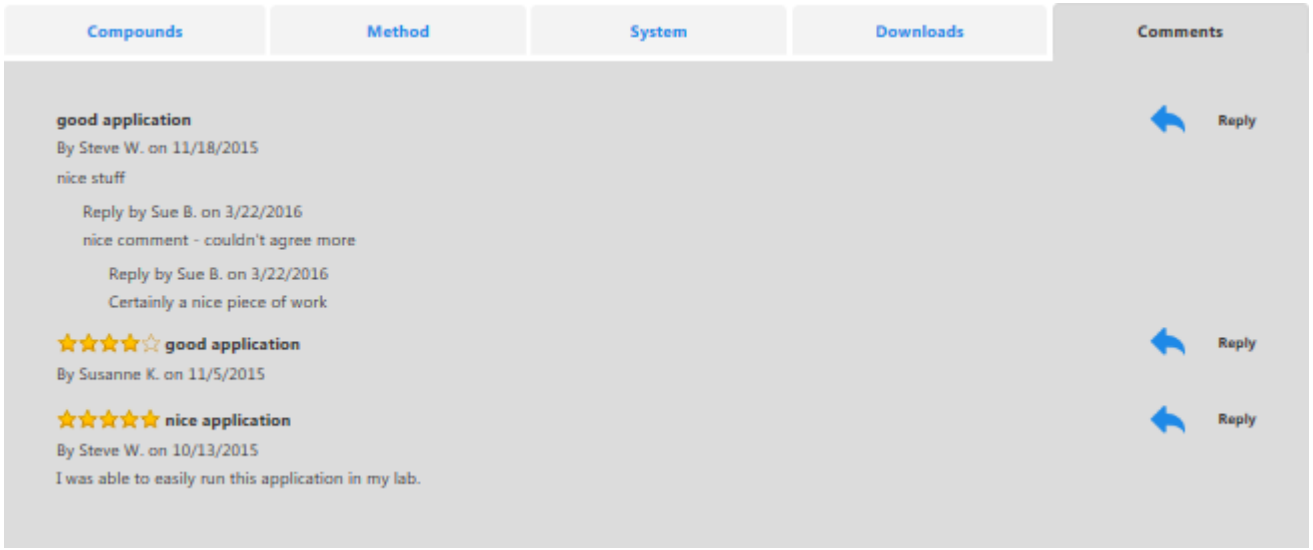
Method details

Instruments and consumables

Downloadable files

- List of all downloadable files and web links

Application Details - Comments



Compound information

Method details

Instruments and consumables

Downloadable files

Comments and ratings

- User comments and rating, including replies

From Web to Lab – One-Click Workflow Concept

AppsLab Library
methods, workflows and more

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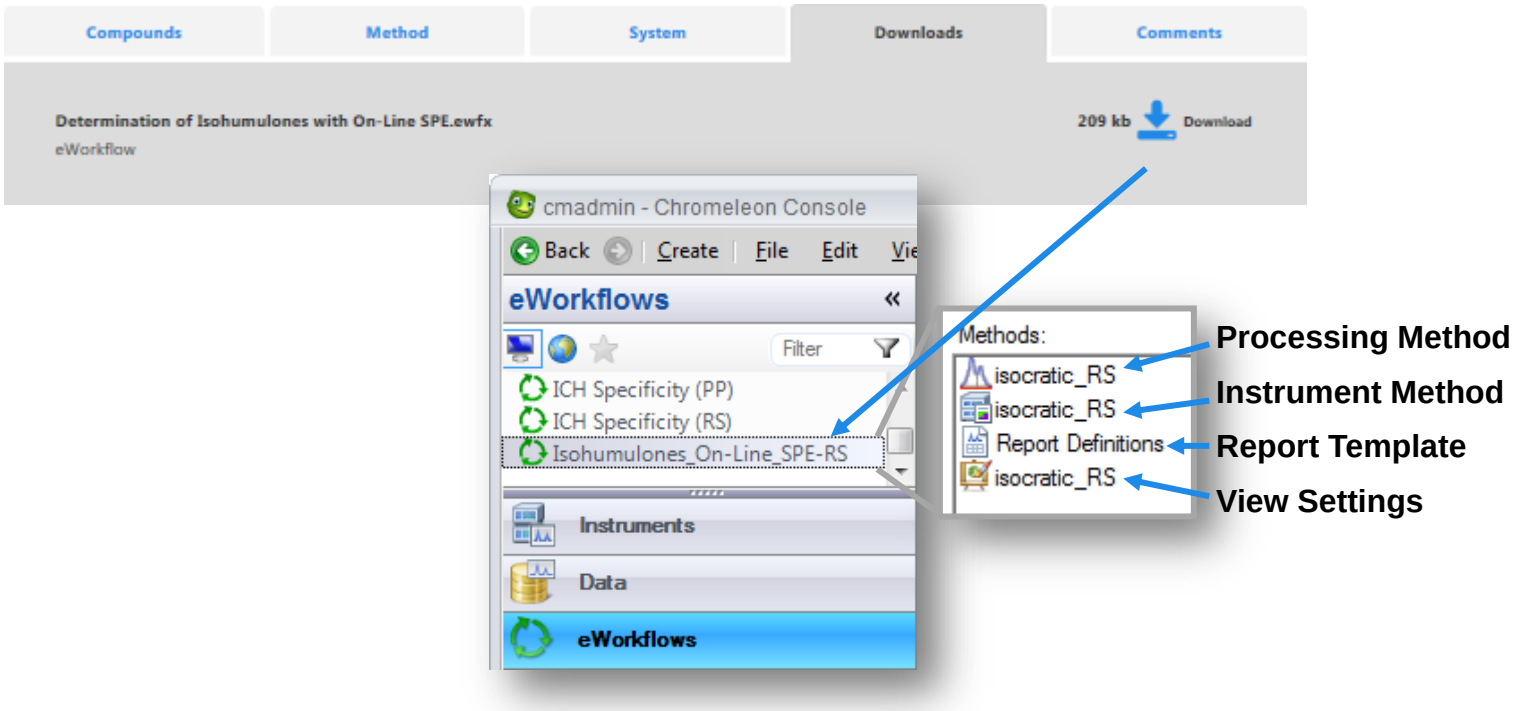
From Web to Lab – One-Click Workflow Concept

- Direct download of an eWorkflow containing instrument parameters, processing method, report template and sequence setup
- Import directly into Thermo Scientific™ Dionex™ Chromeleon™ Chromatography Data System software → Ready to run



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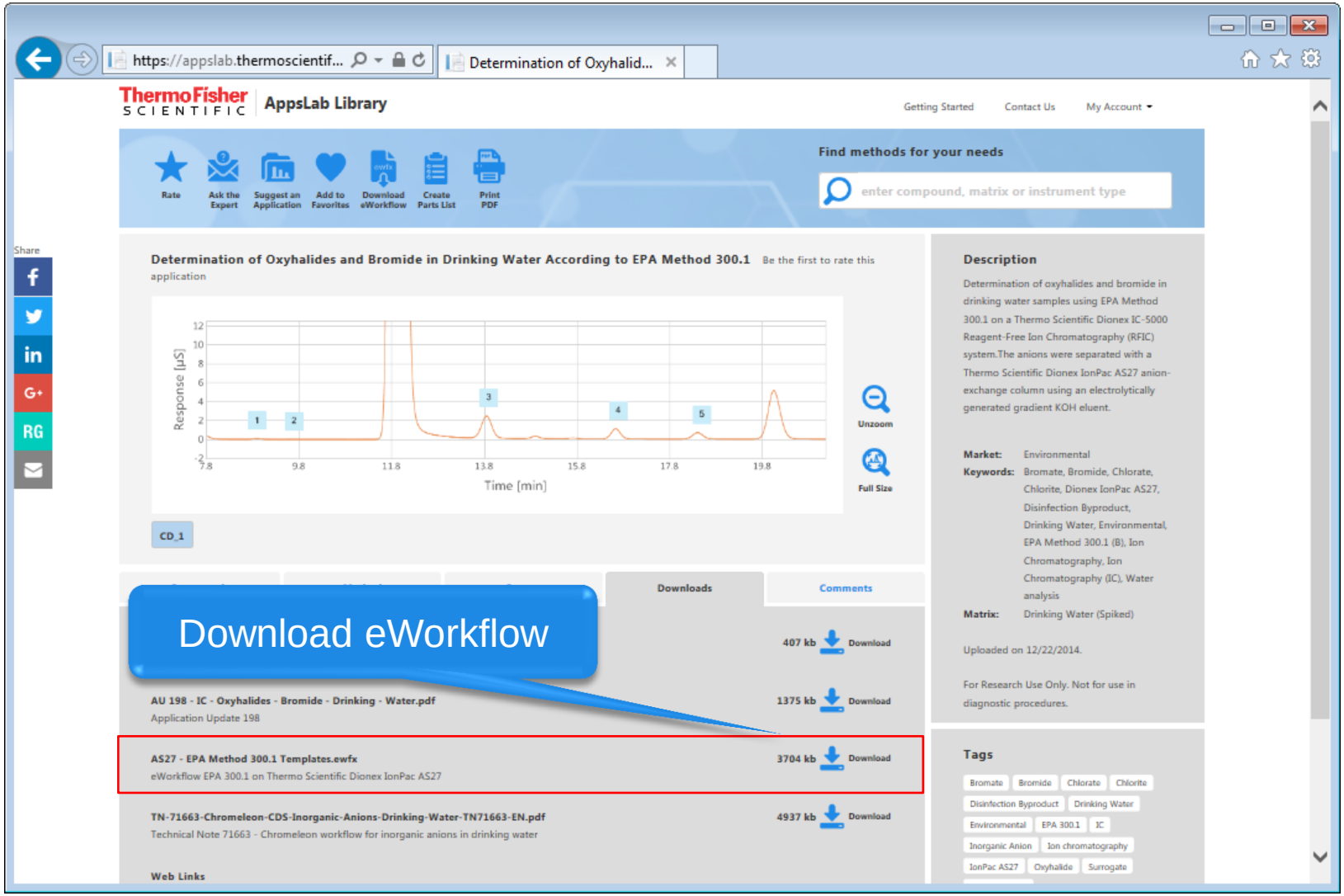
From Web to Lab – Find Application and Download eWorkflow



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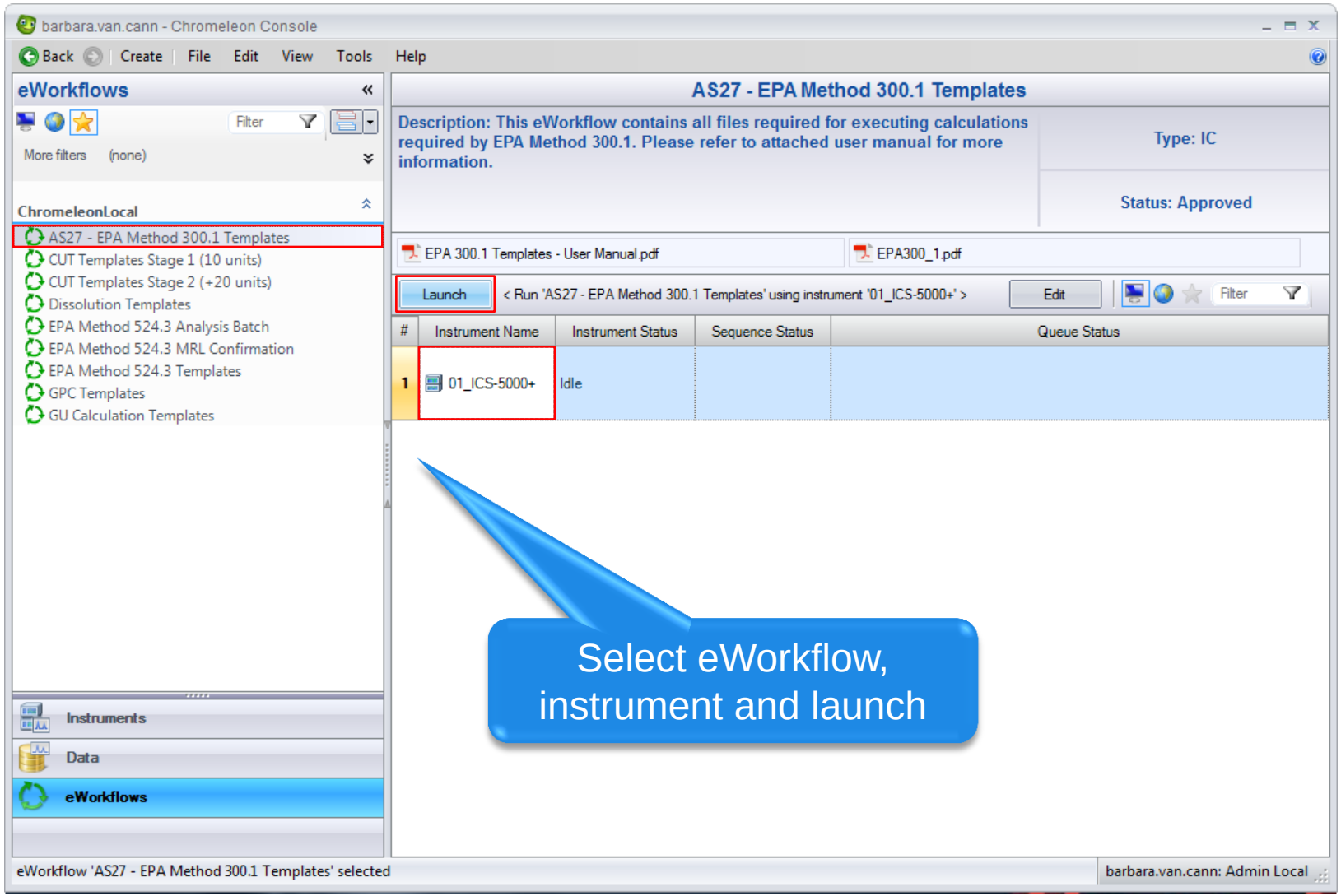
From Web to Lab – Import eWorkflow and Start Run



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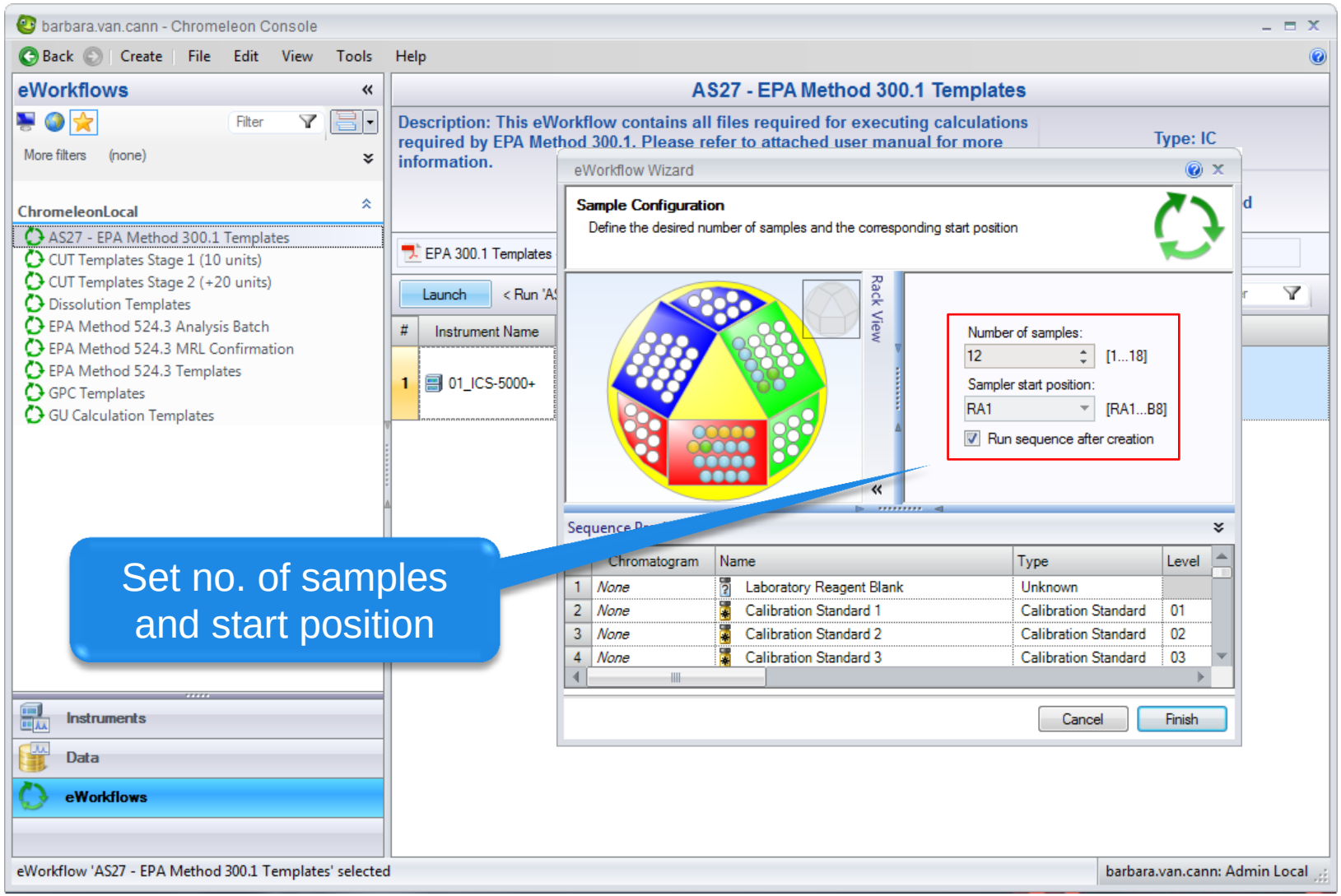
From Web to Lab – Import eWorkflow and Start Run



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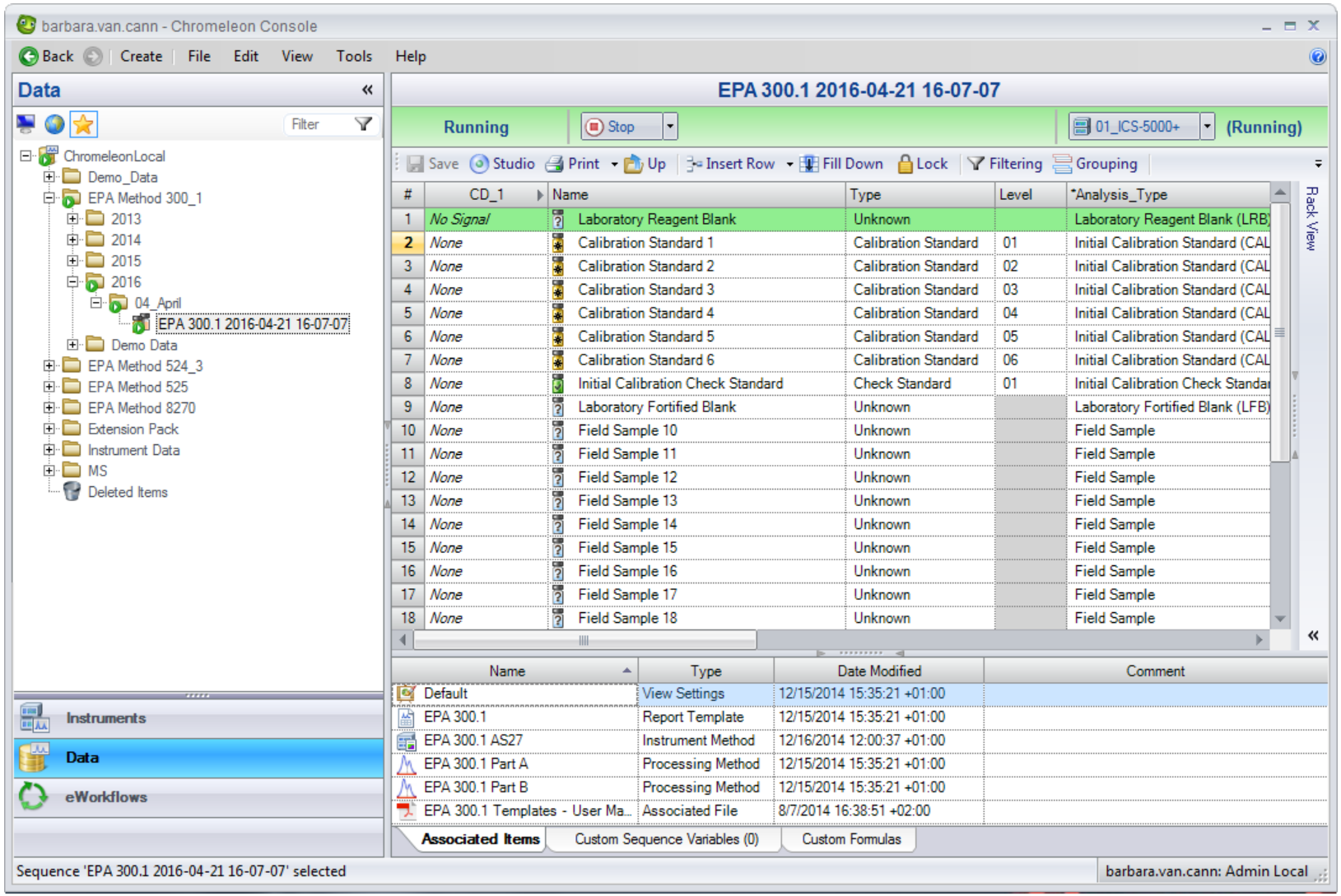
From Web to Lab – Run Analysis



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From Web to Lab – Report Results

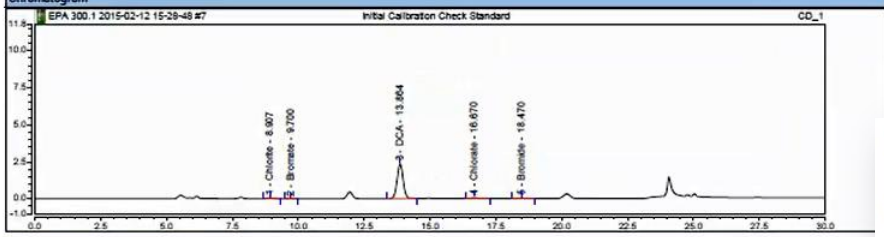
After sequence completion a full report, including calculations and checks, is created.

Calibration Check Standard

Injection Details

Injection Name:	Initial Calibration Check Standard	Injection Date/Time:	30/Jun/14 12:15
Vial Number:	BB2	Run Time (min):	30.00
Injection Type:	Check Standard	Injection Volume:	250.00
Analysis Type	Initial Calibration Check Standard (CCS)	Channel:	CD_1
Instrument Method:	EPA 300.1 AS27	Dilution Factor:	1.0000
Processing Method:	EPA 300.1 Part B	Sample Weight:	1.0000

Chromatogram



Calibration Check Standard Results

No.	Peak Name	Ret. Time min	Area µS*min	Height µS	Amount ug/L	Added Amount ug/L	Recovery %	Lower Limit Recovery (%)	Upper Limit Recovery (%)	Recovery Check
1	Chlorite	8.91	0.011	0.058	11.025	9.970	110.58	85	115	Passed
2	Bromate	9.70	0.001	0.003	1.240	0.960	126.51	75	125	Failed
3	DCA	13.86	0.623	2.352	1002.943	983.700	101.96			
4	Chlorate	16.67	0.013	0.052	11.905	10.670	111.58	75	125	Passed
5	Bromide	18.47	0.009	0.034	13.252	15.010	88.28	85	115	Passed

LFB Recovery Results

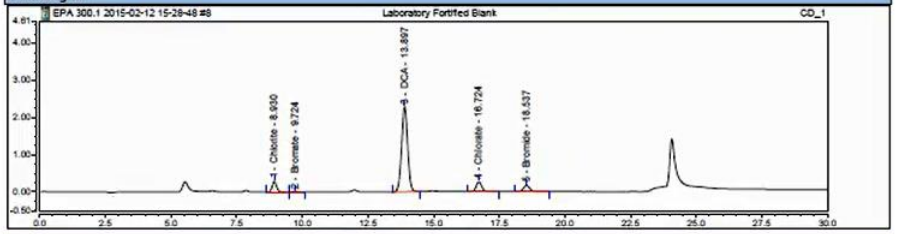
Number of components that passed Recover Check:	3
Number of components that failed Recovery Check:	1
Number of components not present:	0
Overall Test Result:	Failed

Laboratory Fortified Blank

Injection Details

Injection Name:	Laboratory Fortified Blank	Injection Date/Time:	25/Jun/14 19:06
Vial Number:	BB4	Run Time (min):	30.00
Injection Type:	Unknown	Injection Volume:	250.00
Analysis Type	Laboratory Fortified Blank (LFB)	Channel:	CD_1
Instrument Method:	EPA 300.1 AS27	Dilution Factor:	1.0000
Processing Method:	EPA 300.1 Part B	Sample Weight:	1.0000

Chromatogram



LFB Results

No.	Peak Name	Ret. Time min	Area µS*min	Height µS	Amount ug/L	Amount Added ug/L	Lower Limit Recovery (%)	Upper Limit Recovery (%)
1	Chlorite	8.93	0.055	0.288	47.536	47.960	85	115
2	Bromate	9.72	0.003	0.015	4.847	4.900	75	125
3	DCA	13.90	0.610	2.301	982.368	983.800		
4	Chlorate	16.72	0.065	0.265	48.785	48.970	75	125
5	Bromide	18.54	0.047	0.170	49.906	48.970	85	115

LFB Recovery Results

Injection Name	Analysis_Type Calibration Standard (CAL)	Amount ug/L Chlorite	Bromate	DCA	Chlorate	Bromide
Laboratory Reagent Blan	Laboratory Reagent Blank (LRB)	n.a.	n.a.	n.a.	n.a.	n.a.
Laboratory Fortified Blan	Laboratory Fortified Blank (LFB)	47.536	4.847	982.368	48.785	49.906
	Recovered	47.536	4.847		48.785	49.906
	Added	47.960	4.900		48.970	48.970
	Recovery (%)	99.12	98.93		99.62	101.91
	Result	Passed	Passed		Passed	Passed

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Interact and Share

AppsLab Library
methods, workflows and more

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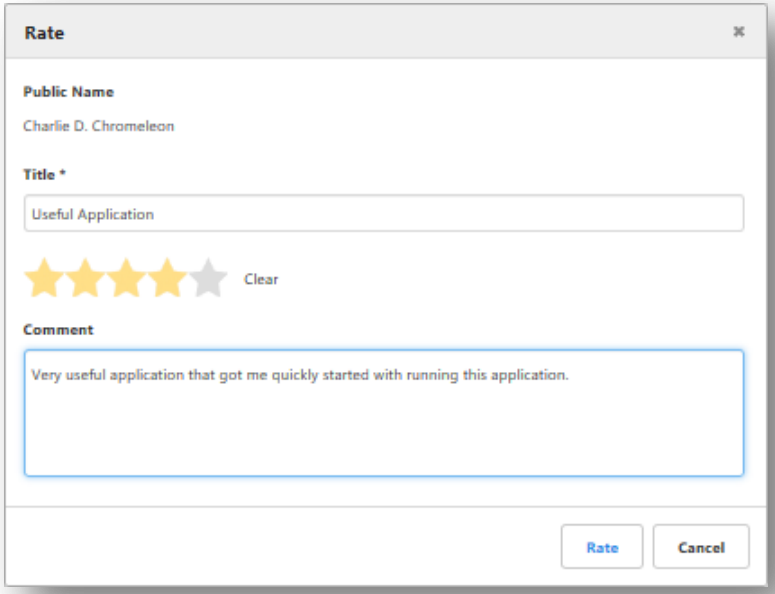
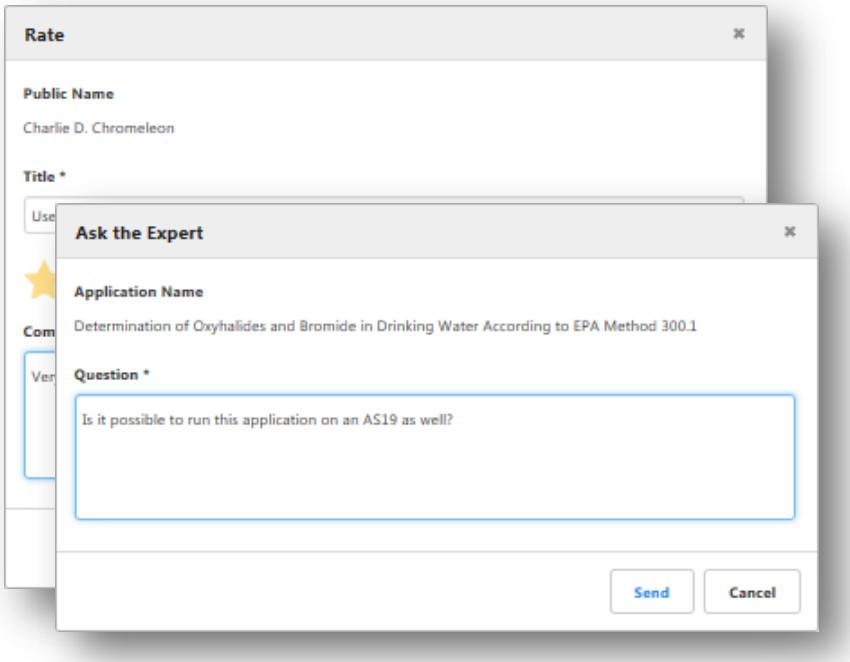
Interact with experts



- Rate and comment
  - Viewable for other users

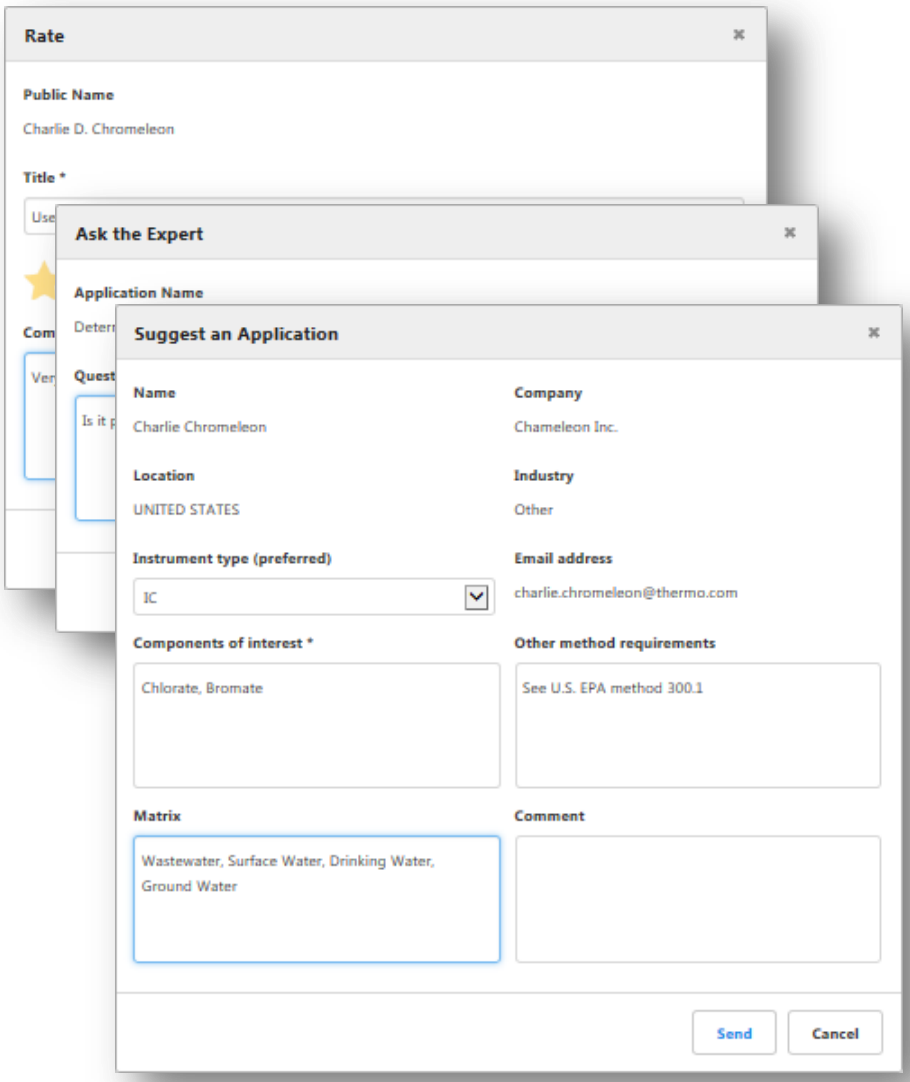
Interact with experts



- Rate and comment
  - Viewable for other users

- Ask the expert
  - Connect directly with application experts for additional information

Interact with experts



- Rate and comment
  - Viewable for other users
- Ask the expert
  - Connect directly with application experts for additional information
- Suggest an application
  - Provide suggestions for future applications

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Share

- Share via email or social media
  - AppsLab Library

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Share

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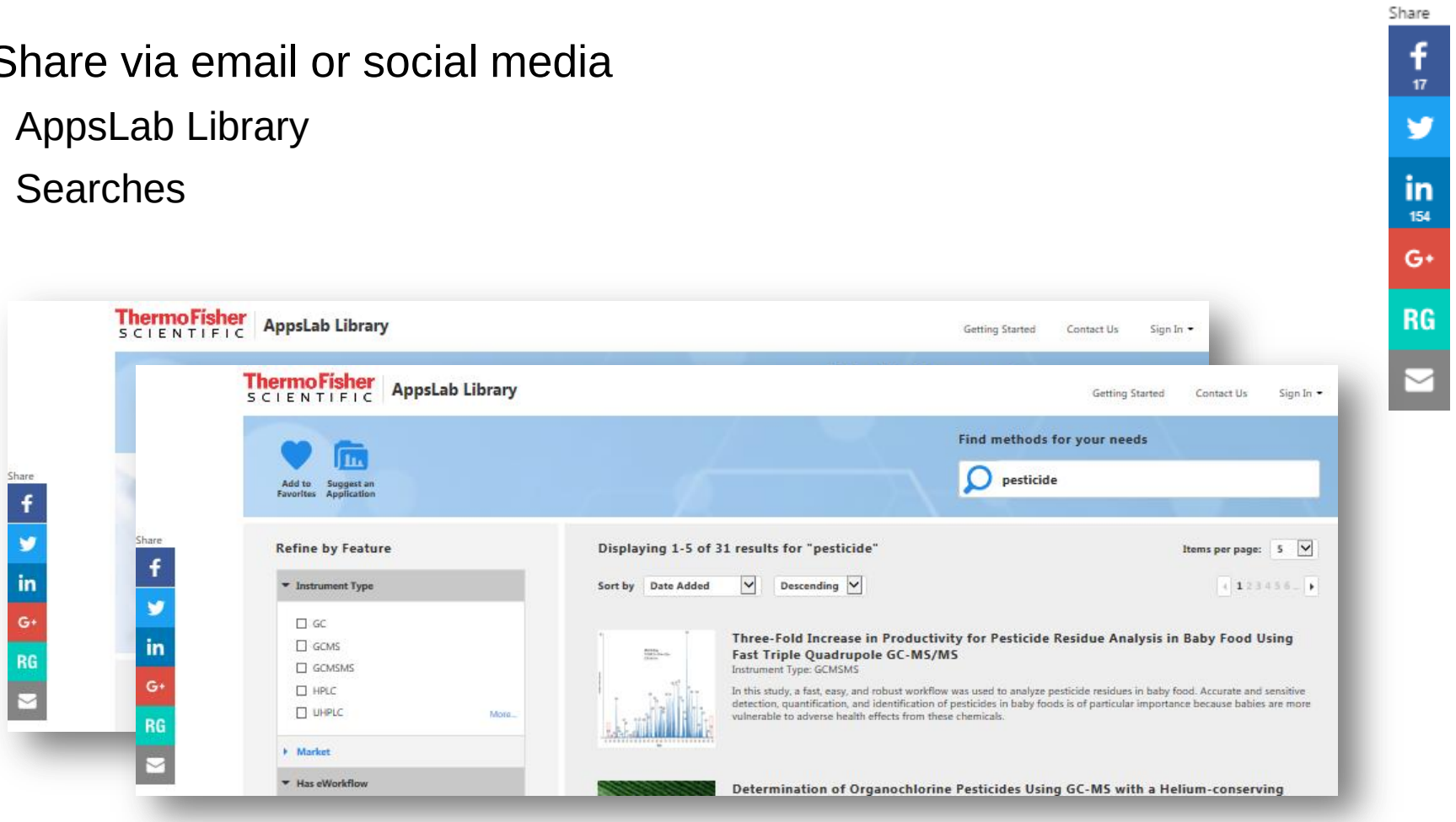
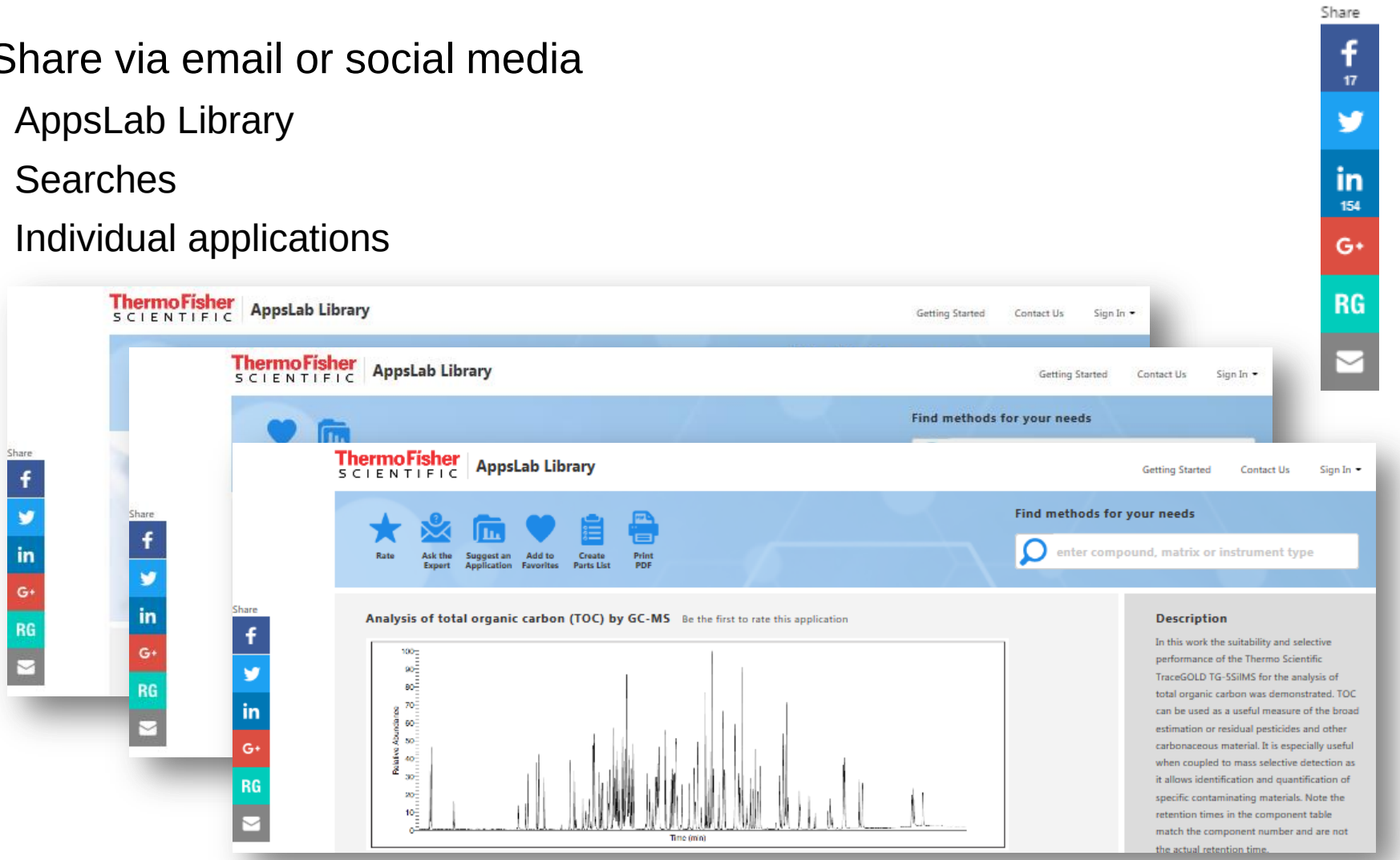
  - AppsLab Library
  - Searches



Share

- Share via email or social media
  - AppsLab Library
  - Searches
  - Individual applications



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Summary

AppsLab Library
methods, workflows and more

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Summary

- AppsLab Library is the chromatographer's web-portal to Thermo Scientific's comprehensive application expertise to speed up method development and optimization.
- Save significant time by easily recreating applications found in AppsLab Library on your existing hardware and chromatography data system.
- Download one-click workflows including all application parameters from AppsLab Library directly into Chromeleon CDS – Ready to Run
- Visit www.thermofisher.com/appslab

AppsLab Library
methods, workflows and more