

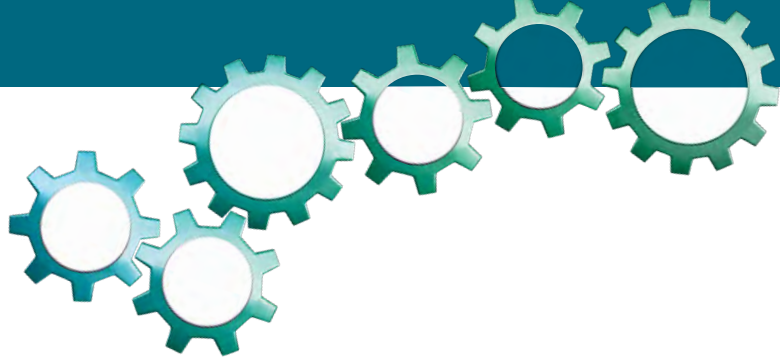
thermoscientific



Chromeleon CDS

Instruments, Intelligence, Insight

ThermoFisher
SCIENTIFIC



One CDS for your chromatography and routine mass spectroscopy instruments

Our chromatography and mass spectroscopy instruments are intuitive and innovative—ensuring simple operation while achieving better separations and higher sensitivity than ever before.

Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) is built on the same principles—simplifying your workflow and giving you superior insights into your data, delivering ease of use, comprehensive instrument control, automated data analysis and flexible reporting.

A CDS is vital for efficient and reliable handling of today's chromatographic data and managing the entire analytical process. From routine quality testing to constantly changing research methods and anything in between, Chromeleon CDS streamlines your entire workflow, delivering better results, faster.



>>> Chromeleon CDS helps you to...

...increase productivity >>>



- Reduce errors in sequence setup using eWorkflows
- More “right first-time” analyses using Smart Startup and Intelligent Run Control
- Faster data processing, reviewing and reporting with dynamic updating and smart tools built in



“With the fully automated workflow provided by Chromeleon CDS, we are now able to run analyses over lunch, evenings, and weekends, so we can analyze more samples with the same number of technicians.”

Rene Spang, Head of Laboratory Mass Spectrometry Service,
Bayer Pharmaceuticals



...control all your instrumentation >>>

- Native control for Thermo Fisher Scientific IC, GC, LC and MS instruments
- Comprehensive control for more than 300 instruments from other manufacturers
- Customizable ePanels provide a consistent look and feel for all instruments



...get the most out of your data >>>

- Deliver accurate and reliable results with built-in reporting tools
- Create any report you need using the spreadsheet-based report designer
- Find, collate and report results across multiple sequences using powerful data mining tools



...connect your laboratory

- Network existing Chromeleon CDS stations to create a compliant laboratory-wide solution with no additional licenses
- Utilize network resources and centralize administration of your Chromeleon CDS stations
- Easily interface with other laboratory software

Meet Chromeleon CDS

Chromeleon CDS Console: Instruments, Data and eWorkflows

Easy data organization

Folder structure can be arranged to fit with any workflow.



Instant data access

Patented Chromatogram MiniPlots and Custom Report Columns give immediate feedback on injection quality and results.



The screenshot displays the Chromeleon CDS Console interface. On the left, a 'Data' tree view shows a hierarchical folder structure for '01 Example Sequence'. The main window shows a 'Run Finished' status with a series of chromatograms and a table of results. The table includes columns for Name, Type, Level, Position, Volume [µl], Instrument Method, Processing Method, Status, Inject Time, Weight, and Dilution. Below the table, an 'Associated Items' section lists files like '01 Example Sequence', 'Instrument Method', 'My Method SOP.pdf', 'On-Screen View Settings', and 'Processing Method'.

Name	Type	Level	Position	Volume [µl]	Instrument Method	Processing Method	Status	Inject Time	Weight	Dilution
Blank	Blank		RA1	20.000	Instrument Method	Processing Method	Finished	05/08/2009 20:50:28	1.0000	1.0000
Std 1	Calibration Standard	01	RA2	20.000	Instrument Method	Processing Method	Finished	05/08/2009 21:16:29	1.0000	1.0000
Std 2	Calibration Standard	02	RA3	20.000	Instrument Method	Processing Method	Finished	05/08/2009 21:33:50	1.0000	1.0000
Sample 1	Unknown		RA4	20.000	Instrument Method	Processing Method	Finished	05/08/2009 21:51:13	1.0000	1.0000
Sample 2	Unknown		RA5	20.000	Instrument Method	Processing Method	Finished	05/08/2009 22:08:36	1.0000	1.0000
Sample 3	Unknown		RA6	20.000	Instrument Method	Processing Method	Finished	05/08/2009 22:25:59	1.0000	1.0000
Check Std	Check Standard	01	RA7	20.000	Instrument Method	Processing Method	Finished	05/08/2009 23:00:45	1.0000	1.0000
Sample 4	Unknown		RA8	20.000	Instrument Method	Processing Method	Finished	05/08/2009 23:09:27	1.0000	1.0000
Sample 5	Unknown		RB1	20.000	Instrument Method	Processing Method	Finished	05/08/2009 23:26:53	1.0000	1.0000
Sample 6	Unknown		RB2	20.000	Instrument Method	Processing Method	Finished	05/08/2009 23:44:21	1.0000	1.0000
Std 2	Calibration Standard	02	RB3	20.000	Instrument Method	Processing Method	Finished	05/08/2009 00:27:44	1.0000	1.0000
Sample 7	Unknown		RB4	20.000	Instrument Method	Processing Method	Finished	05/08/2009 00:36:26	1.0000	1.0000
Sample 8	Unknown		RB5	20.000	Instrument Method	Processing Method	Finished	05/08/2009 00:53:49	1.0000	1.0000
Sample 9	Unknown		RB6	20.000	Instrument Method	Processing Method	Finished	05/08/2009 01:11:11	1.0000	1.0000
Blank	Blank		RB7	20.000	Instrument Method	Processing Method	Finished	06/08/2009 06:32:52	1.0000	1.0000



Convenient categories

For easy navigation between instruments, data and eWorkflows.



Associated items

All files required to run, process and report the data are included. Also attach external files, e.g., a standard operating procedure (SOP) for direct access.

The screenshot shows the 'eWorkflows' section of the Chromeleon CDS Console. It displays a configuration screen for an eWorkflow, with various parameters and options for setting up the workflow process.

eWorkflows – fastest way from samples to reliable results

The screenshot shows a customizable ePanel for instrument control. It features a chromatogram plot at the top, with various control buttons and data fields below it, allowing for real-time monitoring and adjustment of the instrument.

Customizable ePanels for instrument control

“We found the software very easy to learn and to use day-to-day as it is extremely intuitive with a clean, user-friendly interface.”

Tiziana Nardin, Food Technologist, Fondazione Edmund Mach

Chromatography Studio: Data Processing and Reporting

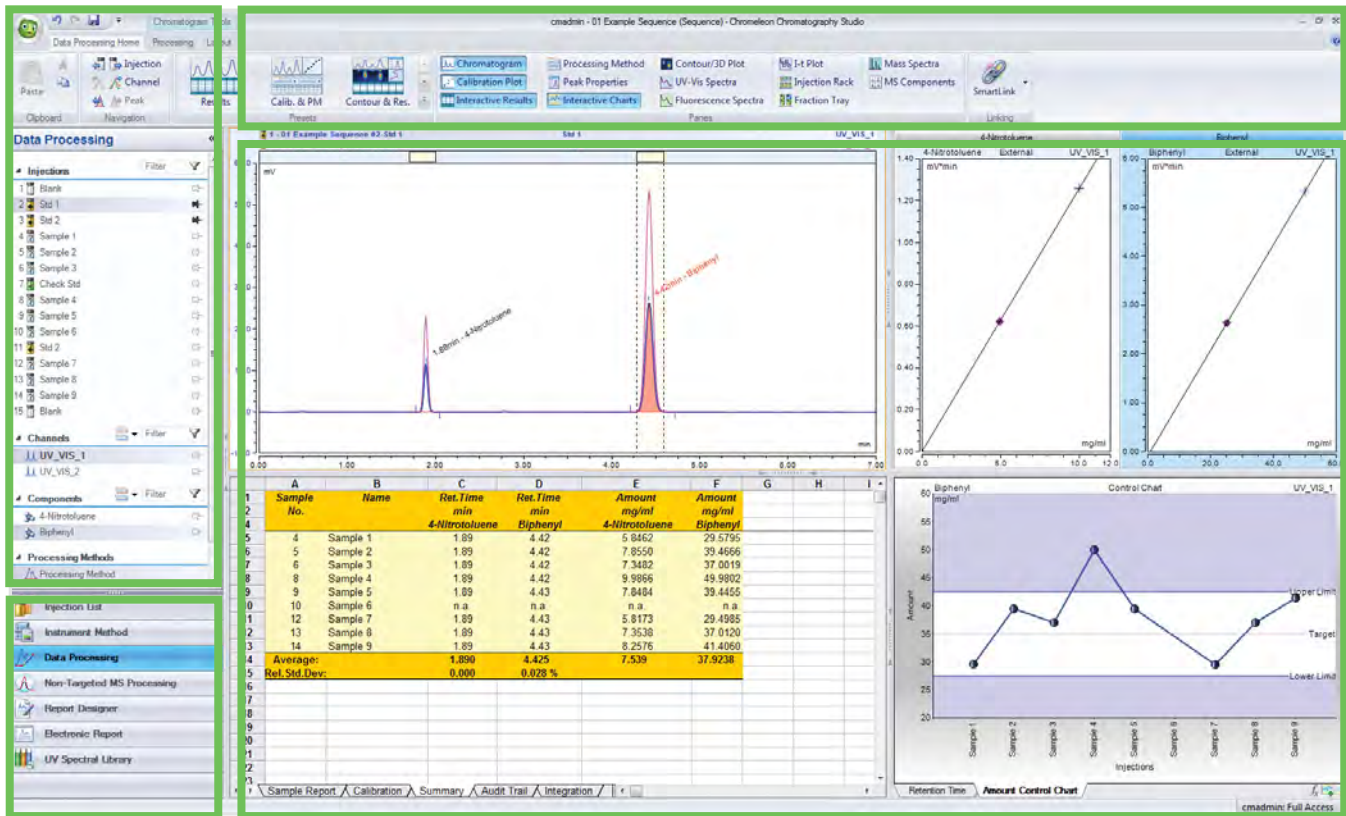
Easy sample navigation

Quickly switch between injections and pin to overlay.



Interactive ribbon

Easily find all relevant tools and functions for the current activity.



Convenient categories

Access everything needed to process, review and report the entire sequence.

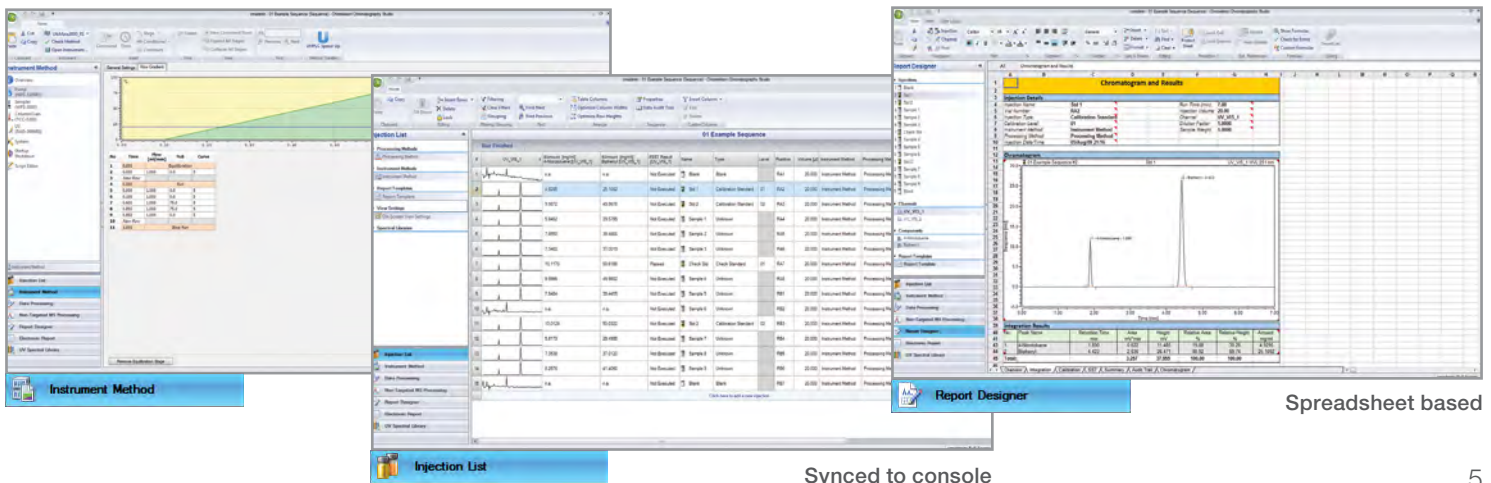


Processing method, calibration/spectra plots, interactive results/charts and more



Broad working area

View all required information in one location for fast, easy data review.



Synced to console

“Chromeleon CDS is much quicker in all activities. Use of the Cobra wizard allows for quick setup of optimum integration parameters giving us consistent integration much faster than either of our previous CDS.”

Brian Alliston, Data Integrity Expert and CDS Specialist, Sterling Pharma Solutions

Increase productivity



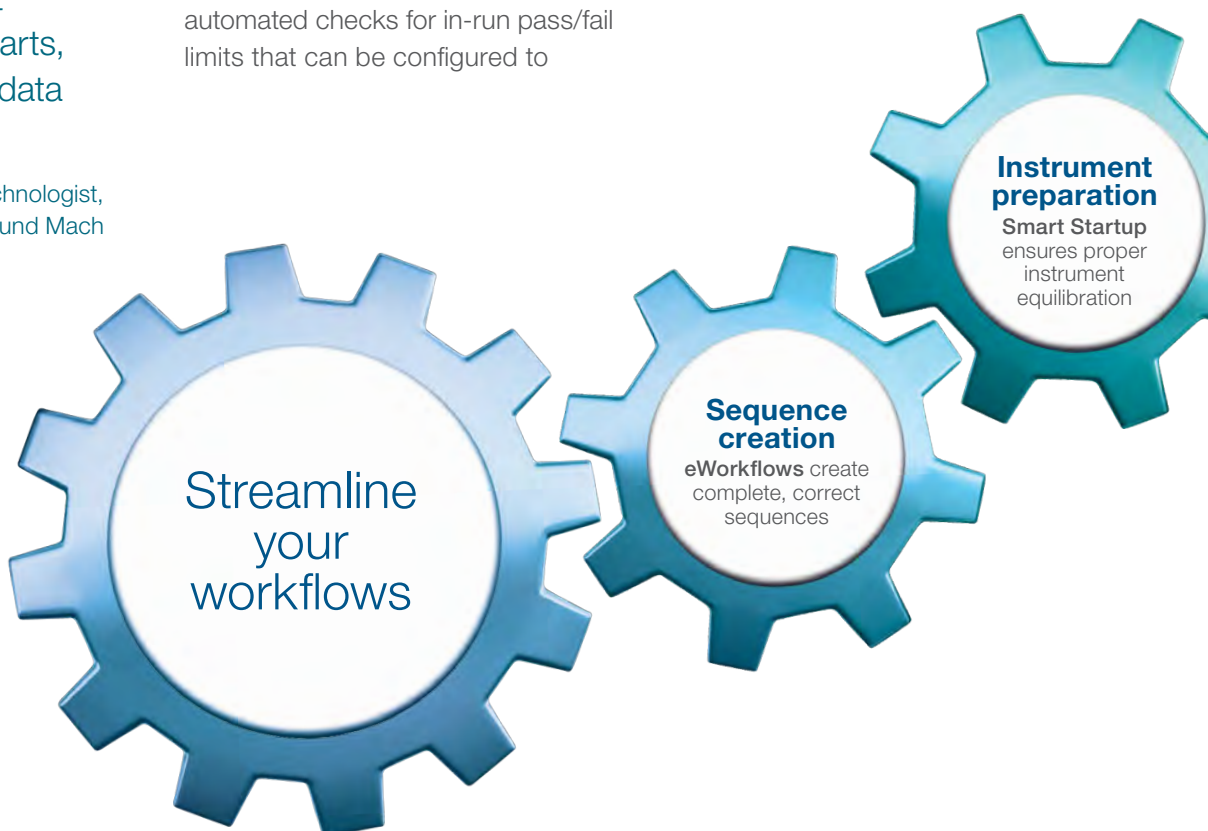
“Chromeleon CDS is a very comprehensive and simple to use software. In a few steps, you can integrate, identify, and quantify compounds of interest and create reports, charts, and graphs, reducing data processing time.”

Tiziana Nardin, Food Technologist,
Fondazione Edmund Mach

Boost laboratory efficiency with operational simplicity and intelligent functionality

Chromeleon CDS was designed with scientists and technicians in mind. It simplifies repetitive tasks, reduces errors and helps you to achieve more ‘right first-time’ analyses. These smart tools make your work faster and easier while ensuring reproducible, quality results:

- **eWorkflows** – error-free execution of each analysis to meet SOP requirements. Create complete, correct sequences with all required elements (methods, reports, structure and other files such as the SOP)
- **Smart Startup and Sequence Ready Check** – worry-free analytical runs by ensuring everything is equilibrated and ready to run
- **System Suitability Tests (SST) with Intelligent Run Control (IRC)** – automated checks for in-run pass/fail limits that can be configured to reinject samples or even abort the run and shut down the instrument based on the result
- **Report Designer** – powerful, spreadsheet-based templates simplify report creation and meet all of your reporting and charting requirements





Faster data processing

Batch review and reprocessing of data can be very time consuming, subjective and error-prone. The Chromeleon CDS smart tools increase laboratory productivity by simplifying and controlling this process, reducing errors and time spent processing, checking and reporting results.

- **MiniPlots™ and Result Columns** – immediate, in-sequence overview of data and results
- **SmartLink** – visualize all the information needed for fast, easy data evaluation
- **Dynamic Data Processing** – all selections and changes are instantly reflected in the data and results, for all injections in the sequence, saving time
- **Cobra™ Wizard** – quickly set optimal detection settings for each analysis in just a few steps
- **SmartPeaks™ Integration Assistant** – consistently integrate peaks with just a few clicks



AppsLab Library: Jump start your Method Development

Find applications and download ready-to-use eWorkflows from Thermo Scientific™ AppsLab Library of Analytical Applications right into Chromeleon CDS where they can be directly executed.

Control all your instrumentation



Chromeleon CDS is the only CDS providing full control of chromatography instrumentation from Thermo Fisher Scientific and many other vendors, including support for quantitative mass spectrometry workflows for all separation techniques and MS variants, all using the same intuitive user interface.

Full control of LC, IC and GC Instruments

- Superior control of Thermo Fisher GC, IC, LC and MS instrumentation for all functions
- Comprehensive, reliable control for over 450 different instrument modules, including over 300 chromatography instruments from other LC and GC vendors
- Native drivers either provided directly by, or created in cooperation with, the original equipment manufacturer

Integrated control of mass spectrometry instruments

- A single software to streamline your chromatography and MS quantitation workflows
- Full integration of Thermo Fisher MS instruments using native control drivers
- Powerful features bring unrivalled usability, scalability and compliance benefits to MS users
- Use your MS like any other routine detector

Intuitive instrument interface

- Intuitive ePanels to control your instrument and sequence
- See the status and audit trail, and easily monitor detector baselines



LC – Separate your science with our revolutionary LC technology.

- Increased uptime with predictive wellness and service monitoring
- Intelligent instrument control with Smart Startup, Standby and Shutdown
- Advanced programming, e.g., application switching and fractionation



LC-MS(MS) – A single solution for your quantitative workflows.

- Full control of single/triple quadrupole and high resolution accurate mass (HR/AM) systems
- Data processing per component using MS-specific detection algorithms
- MS-specific views including TIC, XIC, Mass Spectra, quantitation channel, and MS component traces



“Chromeleon CDS offers the best support for third-party instruments. Competitors’ software provided only limited support for far fewer third-party instruments.”

Bernd Boscolo,
QC Improvement Projects Team Leader and CDS Administrator
Douglas Manufacturing Ltd.



IC – Get more from our world-leading IC and IC-MS instrumentation.

- Only CDS with complete control of all current IC and IC-MS systems
- Intelligent instrument control with Smart Startup, Standby and Shutdown
- Autodilution and re-injection of out-of-range samples



GC and GC-MS(MS) – Chromeleon CDS gives you superior control.

- All GC and MS functions including tuning and instrument calibration
- AutoSIM/AutoSRM for automated SIM/SRM method development
- Advanced injection and sample preparation modes for increased productivity

Get the most out of your data



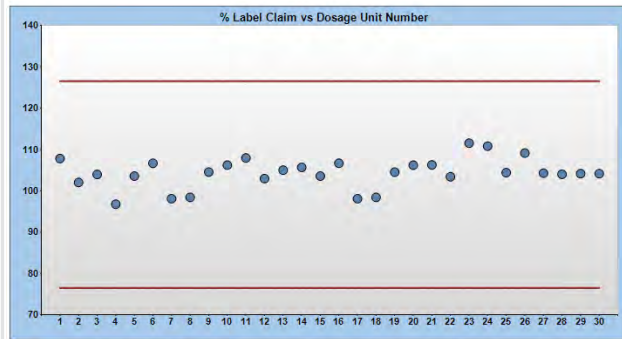
The Chromeleon CDS flexible spreadsheet-based Report Designer provides a familiar interface simplifying the creation of user-defined report templates and eliminating data export to external spreadsheets, reducing errors.

- Produce any report you need, replacing external spreadsheets
- Find, collate and report results across multiple sequences using powerful data mining tools
- Deliver correct and reliable results with built-in reporting tools

Uniformity of Dosage Units Report

General			
Product Batch Number	ABCD	Target Content (T)	100.0
CUT Number	17895	Correction Factor	1.040
Peak Name	Substance 1	Max. Acceptance Value (L1)	10.0
Channel	Int_Chan_1	Lower Amount Limit	76.5
Dosage Form	Common Dosage Forms	Upper Amount Limit	126.5
Pharmacopiea	USP		

Results for Substance 1			
Test		Stage 1 (10 units)	Stage 2 (+20 units)
Average		102.8	104.3
Standard Deviation (s)		3.9	3.6
Reference Value (M)		101.5	101.5
Acceptance Value (AV)		10.6	10.0
Test Result		Test 20 Additional Units	Test Passed



Laboratory Fortified Blank

Injection Details			
Injection Name	Fortified Blank	Injection Date/Time	25/Jan/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

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	8.03	0.055	0.288	47.517	47.960	85	115
2	Bromate	9.72	0.003	0.015	1.869	4.900	75	125
3	DCA	13.90	0.510	2.301	981.464	983.800		
4	Chlorate	16.72	0.065	0.265	48.756	48.970	75	125
5	Bromide	18.54	0.047	0.170	40.953	48.970	85	115

LFB Recovery Results							
Injection Name	Analysis Type	Amount (ug/L)	Chlorite	Bromate	DCA	Chlorate	Bromide
Blank	Laboratory Reagent Blank (LRB)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Fortified Blank	Laboratory Fortified Blank (LFB)	47.517	4.869	981.464	48.756	49.953	
Recovered		47.517	4.869	981.464	48.756	49.953	
Added		47.960	4.900		48.970	48.970	
Recovery (%)		99.08	99.36		99.56	102.01	
Result		Passed	Passed		Passed	Passed	

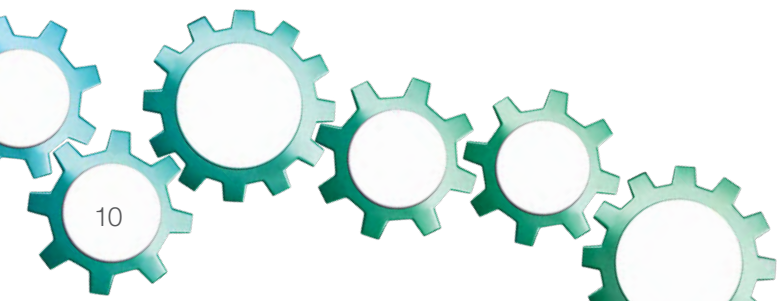
Chromatogram and Results

Injection Details			
Injection Name	Linearity 5	Run Time (min)	0.24
Vial Number	RB6	Injection Volume	1.00
Injection Type	Calibration Standard	Channel	UV_VIS_1
Calibration Level	05	Wavelength	245
Instrument Method	RSLC Linearity	Bandwidth	2
Processing Method	RSLC Linearity	Dilution Factor	1.0000
Injection Date/Time	24/Feb/17 14:42	Sample Weight	

Integration Results							
No.	Peak Name	Retention Time (min)	Area (mAU*min)	Height (mAU)	Relative Area (%)	Relative Height (%)	Amount (mg/mL)
1	Uracil	0.022	1.896	642.025	7.08	7.82	261.3664
2	Acetanilide	0.030	3.348	1057.497	12.50	12.88	199.3447
3	Acetophenone	0.043	3.943	1161.574	14.72	14.14	199.3514
4	Propiophenone	0.061	3.273	850.115	12.22	10.47	199.8047

“The Chromeleon CDS Report Designer is a mighty tool to calculate and present data, and to our understanding is far better than any other software package. With the Chromeleon CDS Reports, we are seeing time and cost savings equivalent to four to five full-time employees depending on the workload in each month.”

Bernd Boscolo,
QC Improvement Projects Team Leader and CDS Administrator,
Douglas Manufacturing Ltd.





Connect your laboratory

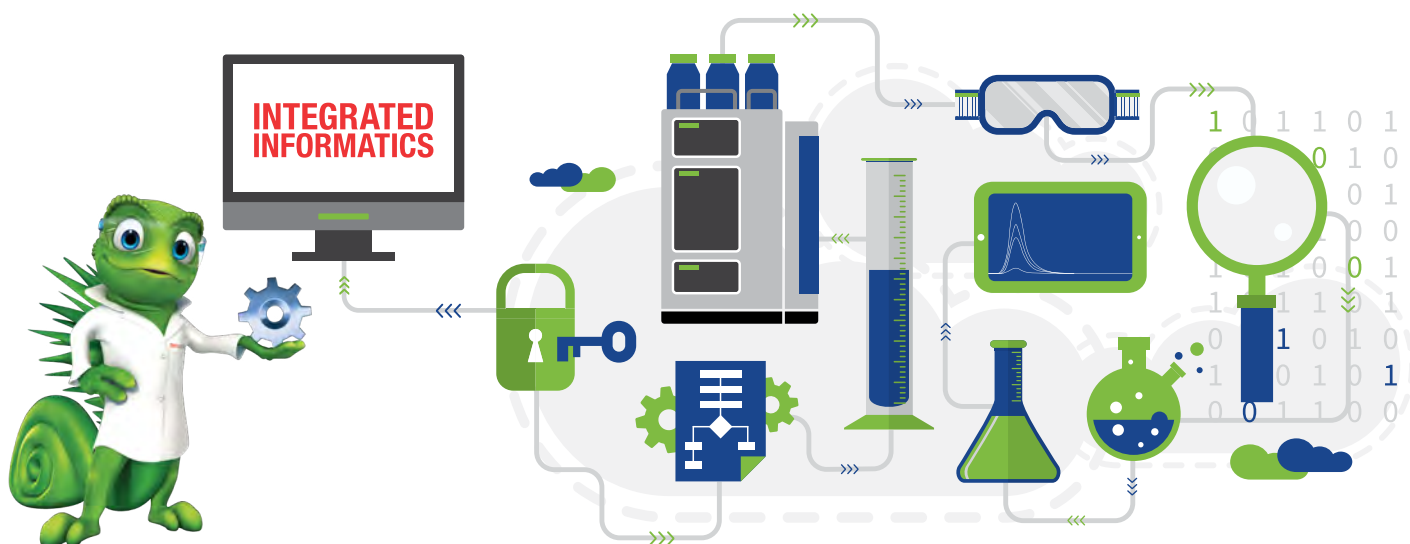


Utilizing the Chromeleon CDS client-server capabilities is your next step in achieving the highest levels of compliance, data integrity and data security, and to realize further efficiency gains.

- Scale seamlessly from a single workstation to a laboratory network, right up to a global multi-site deployment.
- Be compliant with regulatory, 21 CFR Part 11 and GxP requirements and the latest data integrity guidelines.
- Get 24/7 laboratory uptime with intelligent Network Failure Protection (NFP) keeping instruments running, data accessible and allowing new sequences to run.
- Easily manage data, users and resources across laboratories while retaining central control.

As part of the Thermo Scientific™ Integrated Informatics software portfolio, Chromeleon CDS integrates seamlessly with Thermo Scientific™ SampleManager™ to streamline laboratory processes and eliminate manual steps related to sample testing, results capture and analysis.

SampleManager is a single solution for laboratory information management (LIMS), scientific data management (SDMS) and procedural electronic laboratory notebook (ELN)/laboratory execution system (LES).





Interested in our complete data management solution?
Learn more about the entire Thermo Scientific Integrated Informatics portfolio at [thermofisher.com/integratedinformatics](https://www.thermofisher.com/integratedinformatics)

Like Charlie Chromeleon on Facebook to follow his travels and get important updates on chromatography software!
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