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Release Notes

Chromeleon 7 Chromatography Data System

Software Version 7.3.2 MUa • October 2023

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Table of contents

1	Maintenance updates	4
1.1	Release Notes	4
1.2	Other documentation	4
1.3	Installation	4
2	What's new in Chromeleon 7.3.2 MUa	5
2.1	New and updated Thermo Scientific instrument drivers.....	5
2.2	New and updated third-party instrument drivers.....	5
2.3	New and updated features	5
3	Resolved issues	13
4	Limitations and known issues.....	20
4.1	Limitations with Thermo Scientific Instruments.....	20
4.2	Limitations with the Waters Driver Pack.....	27
4.3	Limitations with Agilent ICF	27
4.4	Limitations with Agilent Drivers for Chromeleon	30
4.5	Limitations with other third-party instruments	31
4.6	Limitations with setup.....	34
4.7	Other limitations	35
5	Backward/Forward compatibility issues.....	43
5.1	Chromeleon Enterprise compatibility between Chromeleon versions.....	43
5.2	CMBX file compatibility between Chromeleon versions	43

1 Maintenance updates

Maintenance Updates (MU) are not a full installation of their base software. They only contain files updated as a result of defect fixes relating to maintenance updates. However, maintenance updates are cumulative; that is, an MU also includes all the files and defect fixes of previous MUs. Thus, to install a Maintenance Update:

- It is necessary to have a full base version of Thermo Scientific™ Chromeleon™ installed.
- It is not necessary (but causes no problems) to have previous MUs installed first.

1.1 Release Notes

These Release Notes list the new features and improvements of the current Maintenance Update release only. For information on extensions and enhancements in previous Chromeleon releases, including previous Maintenance Updates, please refer to the Release Notes of that release.

1.2 Other documentation

The following documents have been updated with this release:

- *List of Supported Instruments - Chromeleon 7.3.2 MUa*
- *Online Help* (distributed with this release)
- *Supported Operating Systems - Chromeleon 7.3.2 MUa*
- *Installation Guide - Chromeleon 7.3.2 MUa*
- *Functional Specifications - Chromeleon 7.3.2 MUa*

1.3 Installation

Before you install this Maintenance Update, verify that Chromeleon 7.3.2 is installed. To install this Maintenance Update, run the following program from the distribution media:

Install.exe

2 What's new in Chromeleon 7.3.2 MUa

This section provides a short overview of all new features of Chromeleon 7.3.2 MUa. For more details, refer to the *Online Help*.

2.1 New and updated Thermo Scientific instrument drivers

This chapter lists new and updated Thermo Scientific drivers added to Chromeleon 7.3.2 MUa, these may support either Thermo Scientific or third-party instruments. For details on supported options, required licenses, installation, and control, refer to the *Online Help* or the *List of Supported Instruments* document found on the Chromeleon 7.3.2 MUa distributable.

2.1.1 PerkinElmer Clarus/Autosystem GCs: support for the Cryo option [357361]

With this release Chromeleon is supporting the Cryo option for the PerkinElmer Clarus/Autosystem GCs.

2.1.2 Thermo Scientific Dionex Inuvion [127041]

This release introduces support for the Dionex Inuvion Ion Chromatography system.

Please note that the Consumables Installation and IC Troubleshooting Knowledgebase videos for Inuvion are not included with the driver and must be downloaded and installed, if this was not already done during the system installation. These videos can be downloaded from the normal download portals or please contact your local Thermo Fisher Scientific representative who will be able to assist.

2.2 New and updated third-party instrument drivers

2.2.1 Agilent LC/Agilent GC – updated driver

This release includes an updated driver, provided by Agilent Technologies, for control of Agilent LC and GC instruments (ADC 3.0). More details are available in the Resolved Issues section, and within the release notes document provided with the driver package. This can be downloaded from the normal download portals or please contact your local Thermo Fisher Scientific representative who will be able to assist.

2.3 New and updated features

2.3.1 Allotrope Export enhancement [33555]

This release enhances the Allotrope Export feature of Chromeleon to include the following data in the .adf output file:

- Injection custom variables
- 3D data
- Sequence metadata (such as, sequence comment, sequence custom variables, creation date, and last changed date) in the Data Description

2.3.2 New report tables in Reporting 2.0 [321419, 321378]

The support of the following report tables was added for Report Templates (2.0). This continues the migration of Report Templates (1.0) initiated with Chromeleon version 7.3.2:

- Audit Trail Events
- Audit Trail Event Configuration
- Tentative Identification
- Component Table
- Peptide Table
- Composite Scoring Table
- MS Raw Spectra
- BioPharma Finder Component Results
- BioPharma Finder Processing Method Parameters
- IPD Component Table
- IPD Processing Parameters Table

2.3.3 New graphical objects in Reporting 2.0 [394989]

The support of the following graphical plot objects was added for Report Templates (2.0):

- BioPharma Finder XIC Plot
- IPD Chromatogram Plot
- IPD Source Spectrum Plot
- IPD Deconvoluted Spectrum Plot

2.3.4 Improvement of large sequence transfer between Data Vaults [333891]

This release enhances the large sequence transfer feature as follows:

- The Transfers screen always displays all large sequence transfers of all users (not only the transfers initiated by the currently logged in Chromeleon Console user). A new column displays the information about which user initiated the transfer.
- Users having the privilege “Manage large transfers” can now:
 - Prioritize and deprioritize queued large sequence transfers.
 - Cancel any of the transfers listed on the Transfers screen.

2.3.5 Processing of Imaged-Capillary Isoelectric Focusing (icIEF) data [320790]

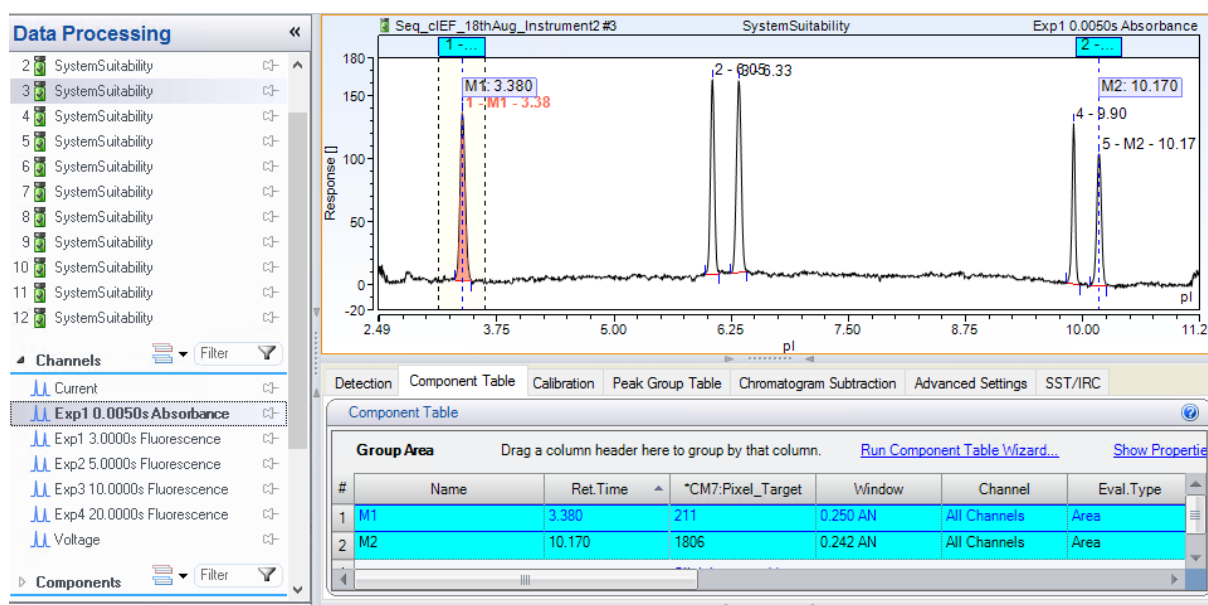
The Maurice Capillary Electrophoresis instrument from ProteinSimple can be used to generate Imaged-Capillary Isoelectric Focusing (icIEF) data sets in Chromeleon. This data is stored as special 2D-signal records where the x-axis has units of Pixel instead of minutes. With this release, support has been added for processing data files generated by this instrument.

Note: The Chromeleon Driver for the Maurice CE instrument is not distributed by Thermo Fisher Scientific. Please contact ProteinSimple or Bio-Techne for information on how to obtain the driver, as well as detailed documentation how to install and configure the driver, and how to create instrument and processing methods in Chromeleon.

2.3.5.1 Automatic transformation from Pixel to pI (Isoelectric Point)

When a sequence containing icIEF data is opened in the Studio, it is possible to automatically transpose the x-axis from unit Pixel to pI for such signals.

To do so, the component table of the processing method for the injection must include a numerical custom variable called **CM7:Pixel_Target**. Two component records must have a value greater than zero for this custom variable. The expected retention times of these two component records are used to define the pI-Calibration values for two marker peaks. Based on these settings Chromeleon will automatically detect the marker peaks in the “Pixel-Chromatogram” and use the Pixel-value of the peak apex of the marker peaks, with the pI-Calibration values to compute the corresponding Pixel > pI transformation. For the final pI-Chromatogram, standard data processing procedures (such as, peak detection, component assignment, and result computations) are then applied, treating the pI-unit as a retention time in minutes.



Labels for peak results in the report need to be changed manually to provide the pI-units instead of minutes.

For example, in the column header of an integration report table, change the default Unit for the peak area from **chm.signalUnit+“*min”** to **chm.signalUnit+“*pI.”**

Report Column

Column Management

Column Properties

Formula

peak.area

Parameters...

Header

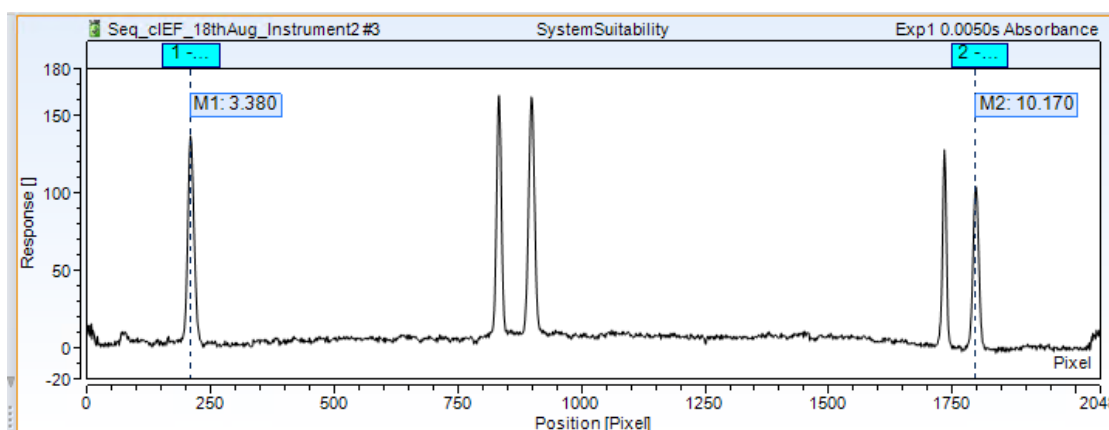
"Area "

Unit

chm.signalUnit+"p"

2.3.5.2 Display options for Pixel- or pl-Chromatogram and marker peaks

The Chromatogram plot object of the Report Designer now supports selecting whether the Pixel- or the transposed pl-Chromatogram should be shown. There is also an option to emphasize the marker peaks and their corresponding pl-values using the same Line & Fill Style Settings as for Signal Parameters.



In the Pixel-Chromatogram, only the marker peaks are shown. There is no data processing (peak results, and so on) for the Pixel-Chromatogram. This is only available for the corresponding pl-Chromatogram.

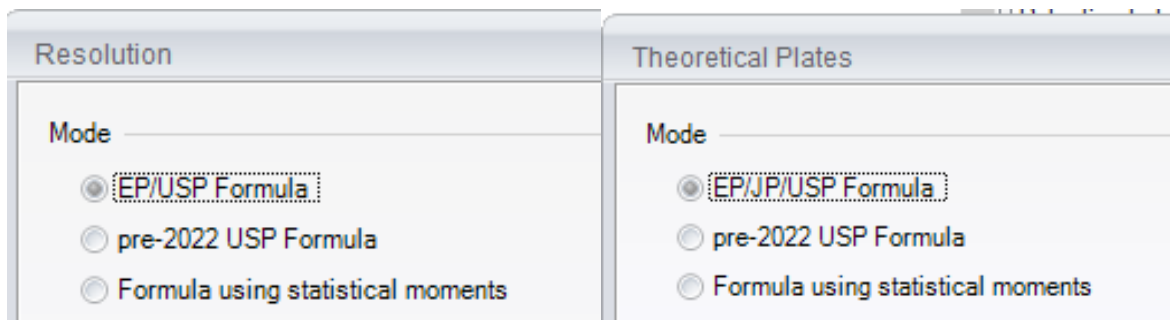
2.3.6 Update of report formulas for peak resolution and theoretical plates according to the recent update of USP chapter <621> [394988]

The report formulas for peak resolution of theoretical plates in the Peak Results category have been updated to comply with the updated chapter <621> of the USP. According to this update the USP-formulas for peak resolution and theoretical plates are now identical to the corresponding EP/JP-formulas. For compatibility reasons, the old parameters for the corresponding formulas will still be evaluated and the formulas return the same result as with prior Chromeleon versions. If a user picks these formulas anew, only the new parameter values are offered. The following is a list of old and new parameter values:

- "EP": old parameter value computing peak resolution and theoretical plates according to EP/JP.
- "USP": old parameter value computing peak resolution and theoretical plates according to the previous USP chapter <621>.

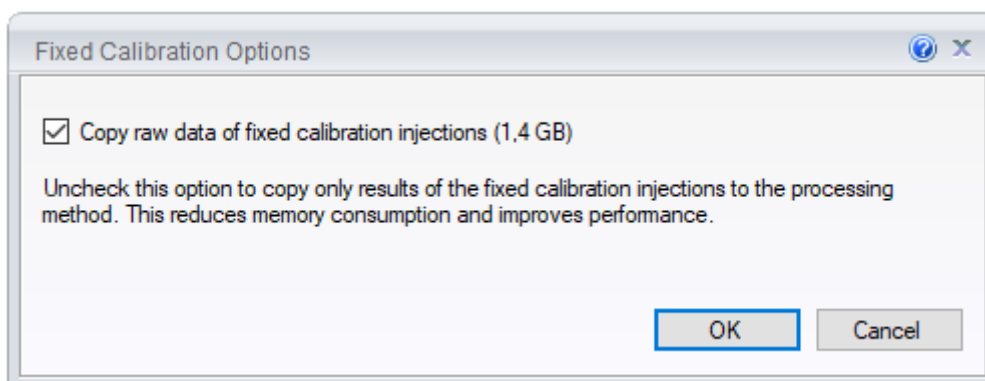
- **“EP/USP”**: new parameter value computing peak resolution and theoretical plates according the updated USP chapter <621>. The formula is identical to the corresponding EP/JP-formula.
- **“pre2022-USP”**: new parameter value computing peak resolution and theoretical plates according to the previous USP chapter <621>.

The parameter dialog boxes for peak resolutions and theoretical plates have also been updated accordingly.



2.3.7 Option to apply a fixed calibration without copying raw data [394985]

After selecting a sequence to apply a fixed calibration in the processing method, a dialog box appears providing the option to select whether the raw data of the calibration injections of the selected sequence are copied into the processing method, together with the calibration injections.



Up to Chromeleon version 7.3.2, raw data has always been copied to the target processing method. For applications where the size of this raw data is large (for example, greater than 1 GB), the Studio window was blocked for several minutes, or even hours in extreme cases, until the fixed calibration could be completed. Clearing the option in the dialog box will reduce the wait time and subsequent blockages.

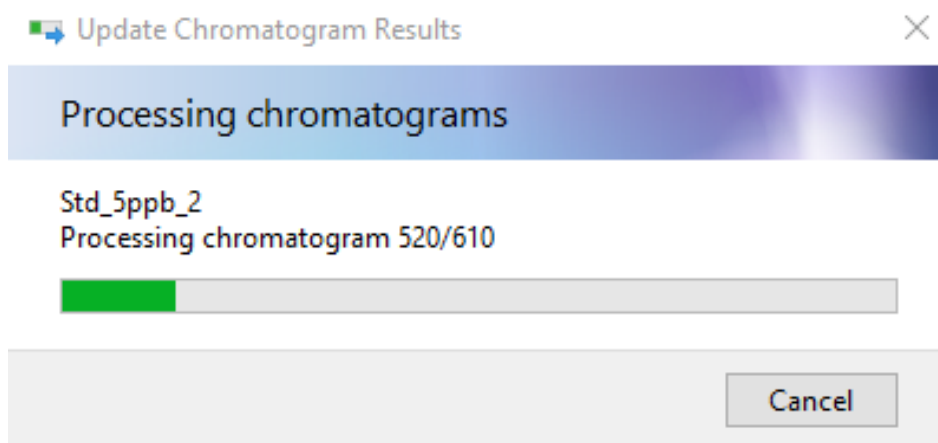
Disabling the option to copy raw data of fixed calibration injections will have some impact when reviewing and reporting these fixed calibration injections in a Studio window of the target sequence:

- If a fixed calibration injection is selected in the Studio window of the target sequence, a corresponding chromatogram plot or MS Component plot will not show any chromatogram. Instead, a red error message “Channel <channel name> is not available” or “No signal available” will appear in the plot area. The raw data to show the chromatogram signal curve is not present in the target sequence.
- If the option is disabled, only calibration relevant results for the component in the target processing methods are copied. Thus, not all results of the fixed calibration injections (for example, not identified peaks) are present in the target sequence. However, the calibration

history table and general calibration related results for the components are available in the target sequence.

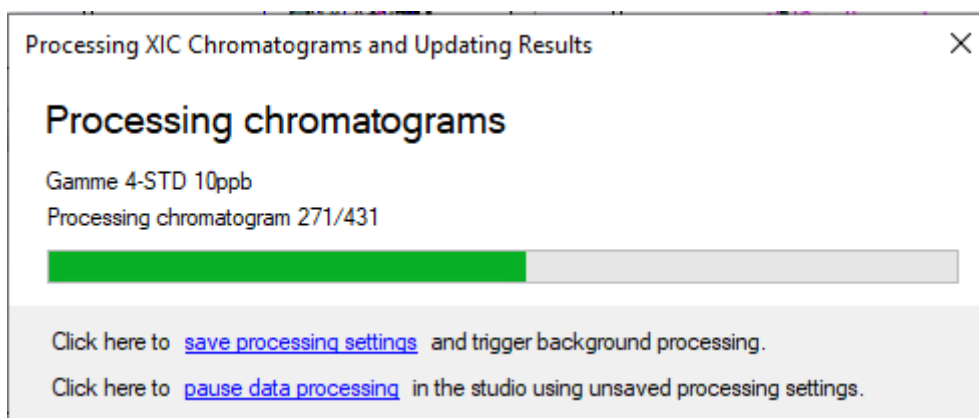
2.3.8 Improved progress dialog box for dynamic MS processing

If a processing parameter is changed (for example, MS Detection Settings) in a Studio window, Chromeleon will automatically trigger processing in the client before changes can be saved (pending modifications). This processing for pending modifications is executed on the client and blocks any UI activities until the results presented in the Studio window are up to date with respect to the pending modifications. Chromeleon version 7.3.2 introduces a new option to cancel the automatic processing of MS data sets to review the currently processed and rendered results. In previous Chromeleon versions, the time for pending modifications was estimated when automatic processing was initiated. If the estimate was above 3 seconds, a progress dialog box appeared providing the ability to pause the automatic data processing by selecting the Cancel button (see the following figure).



Progress Dialog in 7.3.2

For Chromeleon 7.3.2 MUa, this progress dialog box is modified. The Cancel button has been replaced by two hyperlink options: either pause the automatic data processing (a replacement for the previous Cancel button) or to save the pending changes immediately. For the latter option, a Save dialog box might appear depending on the policy settings for this action. If the pending changes are not saved in this case the automatic data processing is paused anyway.



Progress Dialog in 7.3.2 MUa

Closing the progress dialog box via the X-button in the upper-right corner will also pause the automatic data processing.

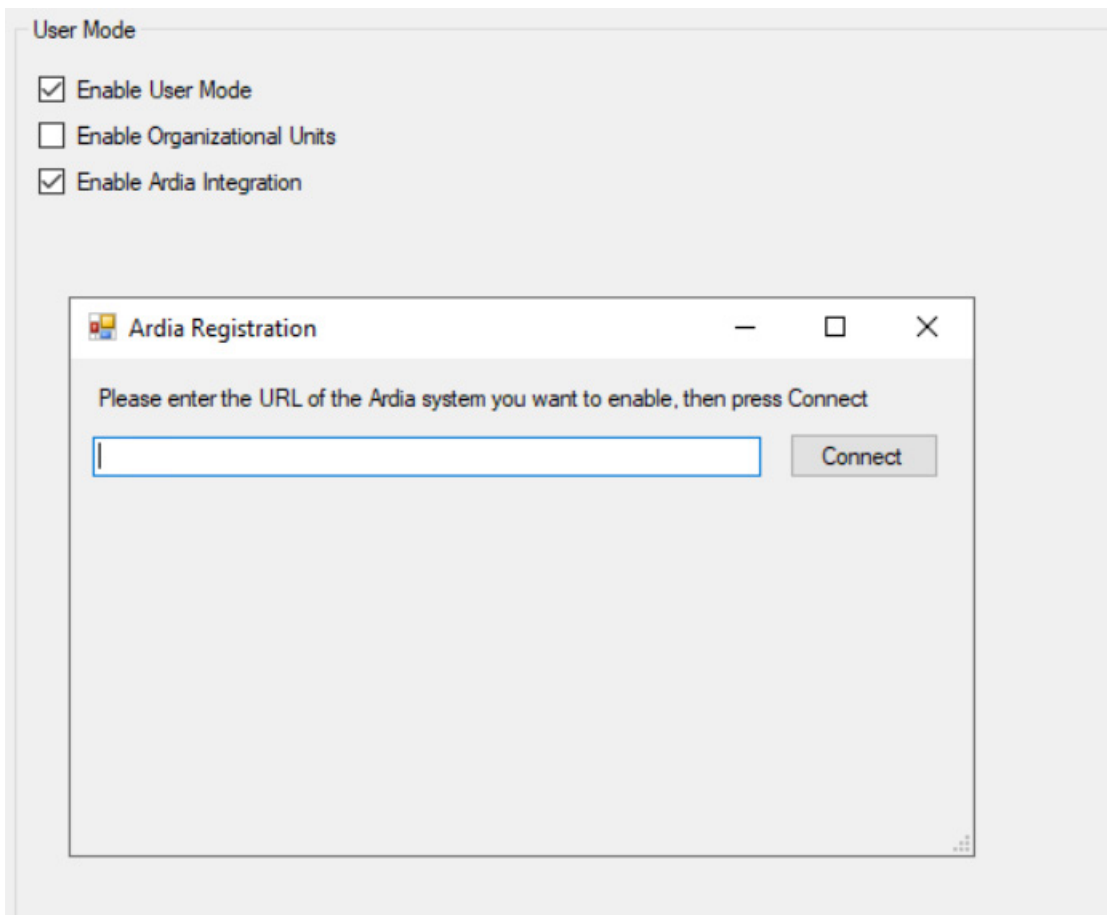
2.3.9 New version of the Cobra Peak Detection Algorithm

Chromeleon 7.3.2 MUa comes with a new version 3.4 of the Cobra Peak Detection Algorithm to resolve some issues where the previous algorithm versions did not return a valid peak list (see section 3 Resolved Issues, tracking IDs 128812, 192908, and 260130). Existing processing methods are not affected and are still using the Cobra version they have previously used. Depending on a global policy setting (Global Policy > Detection Algorithm Version > Offer option for existing processing methods to update to the latest algorithm version) users can activate the new Cobra version during a Studio session for the corresponding sequence or processing methods. Detection algorithm versions are stored in the processing method.

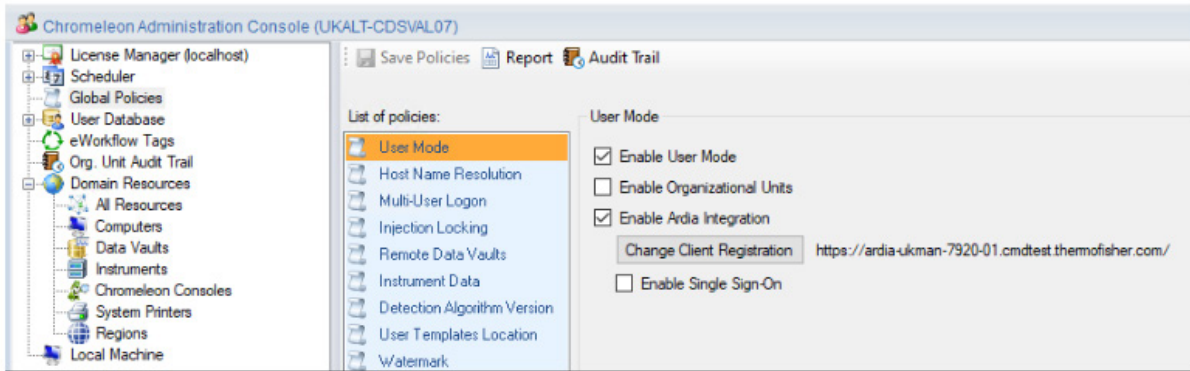
Note: The version number of the Cobra Peak Detection Algorithm that is applied during data processing can be reported by the report variable `procMeth.effAlgVer("cobra")`. There is also the report variable `procMeth.isLatestAlgVer("cobra")`, which reports whether the newest algorithm version is used or not.

2.3.10 Enable Ardia integration [227153]

For those customers who have purchased an Ardia system, this Chromeleon release allows Ardia integration to be enabled through the Chromeleon Administration Console. The integration is implemented in the Global Policies section of the Administration Console. To integrate with Ardia, enter the URL of the Ardia system you want to enable.



Client registration can be changed and Single Sign-On can also be enabled through the Global Policies section of the Chromeleon Administration Console.



3 Resolved issues

This chapter describes the issues that have been resolved with the release of Chromeleon 7.3.2 MUa only. For issues that have been resolved in previous MUs, please refer to the Release Notes for the relevant release.

Other trivial and minor issues may have been resolved but are not mentioned here. If you require information about the status of an issue observed in a Chromeleon 7 release, but which is not listed here, please contact your local Thermo Fisher Scientific representative for more information.

The numbers in the first column of the table below refer to the Thermo Fisher Scientific tracking IDs.

ID	Description
<p>128812 192908 260130</p>	<p>Chromeleon Studio – Cobra Peak Detection: In very rare scenarios using a certain detection parameter set in combination with specific chromatogram signals the Cobra Peak Detection Algorithm cannot complete the required peak detection. The chromatogram plot in the Studio window will show an error message such as, “Can’t read channel ... Index out of range” or “Can’t read channel ... Start must be less or equal to the end.”</p> <p>With this release a new version of the Cobra Peak Detection Algorithm is available. The updated algorithm version will need to be activated within the processing method so that the described scenario(s) are no longer encountered. For more details, see section 2.3.9 New version of the Cobra Peak Detection Algorithm.</p>
<p>142047</p>	<p>Instrument Driver – MS driver: TSQ Altis: There was no report variable available for the module serial number. This issue has been addressed in TSQ Series 3.4.</p>
<p>172047</p>	<p>Chromeleon Studio – Instruments: When monitoring the baseline with an overlay chromatogram added to the signal plot, the overlay disappeared after changing to a different ePanel and back.</p>
<p>172732 425626</p>	<p>Chromeleon Console: The sequence Running icon is now shown when a sequence is directly started from the Console. However, if a user runs a sequence using a remote instrument that is connected to a region, it might take a few minutes for the overlay icon to appear in the Console. The delay depends on the Proxy Polling Interval and the Proxy Publishing Interval settings.</p>
<p>244045</p>	<p>Chromeleon Studio – Timed Peak Groups and Manual Peak Identification: If a peak is automatically assigned to a component record you can remove this automatic assignment manually. After the manual removal of the component assignment, this peak was not assessed as a “Not Identified Peak,” for example, the peak didn’t become a member of a timed peak group even though the retention time was in the corresponding time range. This wrong assessment is now corrected. Such peaks, that is, where the component assignment is removed manually, are now correctly evaluated as “Not Identified Peaks.”</p>
<p>253596</p>	<p>Chromeleon Studio – Manual Peak Identification for TIC channels: When in the Studio window with the Mass Spectra pane open in the Data Processing category, and when manually assigning a component to a peak in the TIC channel, Chromeleon would display the error “Object reference not set to an instance of an object.” The Mass Spectra pane would need to be closed to allow the manual assignment to be executed correctly. With this release, the Mass Spectra pane can be kept open.</p>

ID	Description
284230	<p>Chromeleon Console – Data Import: When attempting to import Chromeleon data to a folder protected by an access group, different results are presented depending on whether the Chromeleon Data or Bulk import option was selected. A user lacking the Import Chromeleon Data privilege with the Chromeleon Data option was prevented from data import to that folder, while the Bulk Import option allowed the import of Chromeleon data. Now, a user lacking the Import Chromeleon Data privilege is denied data import, both when using the Chromeleon Data option and the Bulk Import option.</p>
294951	<p>Chromeleon Studio – Signature of Sequences with very big RAW-Files: If a sequence is submitted for electronic signature, Chromeleon 7 computes a hash code for every raw file in the sequence. This is done via a dedicated API call on the Data Vault Service where the raw files are located. For very big raw files (for example, greater than 3 GB), or if the computer where the Data Vault Service is running is occupied with other tasks, the hash computation could take too long. The Chromeleon client that triggered the sequence signature would therefore run into a timeout and the electronic signature could not be completed for the sequence.</p> <p>With this release, the API call for the hash computation on the Data Vault Service for large raw files greater than 100 MB now returns in time to the Chromeleon client and completes the hash computation asynchronously. After it is completed, the client is notified and can continue the electronic signature.</p>
300974	<p>Chromeleon Studio – SST/IRC: For a sequence with injections that have multiple components, each with its own acceptable limits, IRC is set up to test each component against its limits and if any one component fails, the injection should be re-injected. However, if several components fail, a new sequence line is created for each failed test. Now if multiple tests fail for a single sample, the sample is only re-injected once.</p>
302689	<p>Chromeleon Console – SST/IRC: When using Intelligent Run Control with the "Re-inject" or "Auto-Dilution" actions, the injection custom variables of a newly inserted injection were not carried over and remained empty or were filled with a defined default value. Now, when using Intelligent Run Control with the "Re-inject" or "Auto-Dilution" actions, the injection custom variables are automatically filled with the content of the injection custom variables of the original injection.</p>
307089	<p>Instrument Driver: Vanquish Fraction Collection (VF-F11-A): The Firmware Version reported by the driver was always a constant 1.03, independent of what firmware version was actually running in the device. This has been corrected; the property now reports the appropriate value, for example 1.11.</p>
307368	<p>Chromeleon Studio – Method Translation: Method Translation would not recognize the difference between Orbitrap Exploris™ models. When opening a Chromeleon instrument method created on an Orbitrap Exploris 240 or an Orbitrap Exploris MX instrument, no warning was presented to indicate the difference between the model the instrument method was created for and the actual instrument. Instead, the Ready Check would fail. This has been addressed in Chromeleon 7.3.2.</p>
309284	<p>Chromeleon Studio – Allotrope Export: An allotrope export would fail with the exception "AllotropeExport.exe returned exit code 2. See AllotropeExport.log for details." Now an allotrope export is successful and an allotrope (*.adf) file is created in the specified folder.</p>
309295	<p>Export: The Allotrope export would fail if the channel name included a space. Now the Allotrope export works if the channel name includes a space.</p>

ID	Description
<p>310089 342580</p>	<p>Chromeleon Studio – Inconsistent Computing of Peak Tangents: The Cobra Peak Detection Algorithm computes temporary peak tangents which are overwritten by the final peak tangent computation. If the final computation of the peak tangents cannot be computed reliably, the temporary peak tangents from Cobra are not overwritten, but instead, are kept in the chromatogram result cache. If the component assignment needs to be recomputed (for example, by deleting a component record in the processing method or by changing the expected retention time in existing component records) it will also trigger a re-computation of the final peak tangents and the temporary peak tangents are removed as they cannot be computed in this instance. Report formulas that depend on peak tangents (for example, peak width, and theoretical plates using the legacy USP-formula) will return different results in this scenario although the peak- and baseline list does not change. With this release, a new version of the Cobra Peak Detection Algorithm is available. The updated algorithm version will need to be activated within the processing method so that the described scenario(s) are no longer encountered. See section 2.3.9 New version of the Cobra Peak Detection Algorithm.</p>
<p>315682</p>	<p>Chromeleon Studio – Manual Component Assignment for TIC Channels: If a component is manually assigned to a peak in a TIC channel and there are certain plot panes active, specifically MS Spectra of Calibration Plot, Chromeleon can run into an unexpected error message with the additional information "Object reference not set to an instance of an object." This is fixed now and manual component assignments for TIC channels do not run into an error message anymore.</p>
<p>316803</p>	<p>Chromeleon Console – Editing running sequences: After opening a running sequence in the Chromeleon Console, a new injection run is started. If the sequence is edited (for example, modifying an already finished injection record, or adding new injections), the modifications could not be saved. An error message appeared stating that "The save operation failed ...". The changes would need to be discarded, the console refreshed via F5 (Refresh), and the modifications repeated to allow a successful save operation. With Chromeleon 7.3.2 MUa, the latter "workaround" is no longer necessary.</p> <p>Note: The error message still appears and is expected if the running injection is set to Finished in the meantime, that is, before modifications are saved.</p>
<p>319155</p>	<p>Chromeleon Console – Queries: The query results table columns with (*) order jumble each time the same query is executed. This behavior has been fixed.</p>
<p>324003</p>	<p>Chromeleon Studio – Processing Method: When editing the expected retention time of a component within the processing method editor, the modified value might have been entered in the component table grid, but the processing method was not marked as modified. The processing method with these changes could then be used to process results and create corresponding reports within the same Chromeleon Console. When closing the Chromeleon Console and restarting it, or starting it on a different computer, the original processing method was shown, and the previous results or reports might not have matched the results or reports created with the newly started Chromeleon Console. This is now fixed. Editing the retention time of a component in the component properties property dialog box will always mark the processing method as being modified. Subsequent results or reports are clearly based either on unsaved changes or require the need to save the modified settings first before creating a report. The latter is controlled by the Print or Export Unsaved Data privilege.</p>

ID	Description
337765	<p>Printing: For sequences created from a WLEX file it could happen that the print properties were not set correctly as configured in the instrument configuration manager. This was caused because the enforced reporting settings from the instrument configuration were only displayed on the Auto Reporting page in the Sequence Properties dialog box if the instrument was available. Now, if the instrument is not available, the auto-reporting properties for the sequence can be edited (or viewed if the instrument becomes unavailable after Chromeleon was started) and a warning is shown that the instrument is not connected and may override the settings when the sequence is acquired.</p>
355754	<p>Licensing: On an Enterprise system running 2000 sequences in parallel, some sequences were aborted with a license error even when enough licenses were available. This issue was caused by a serialization issue, which has been resolved.</p>
364515	<p>Chromeleon Studio – MS Component Pane: When displaying the XICs of a reference injection in a pane, the tile containing the XICs of the currently selected injection disappeared after the reference XICs were zoomed in. This does not happen anymore with 7.3.2 MUa. In this use case (zoom in reference XICs), the tile for the currently selected injection will still be visible in the MS Component Pane.</p>
366782	<p>Updater Service: The Updater Status would occasionally switch from "Installing" to "Ready" to "Install." In addition, after the installation had completed, the Updater Status would change to "Ready to Install" even though the install had completed successfully. Now the Updater Status changes to "Installed Successfully" after the installation has completed successfully.</p>
367982	<p>Instrument Driver: In Chromeleon the draw speed for the Vanquish Autosampler could be set in the range 0.050–20.000 µl/s (default value: 5.000 µl/s). However, the draw speed is limited by the firmware to 15.000 µl/s. This limitation was set intentionally in the firmware to ensure proper functioning of the metering device head. However, this limitation was not communicated to the user in the CDS. It was possible to manually set or define within an instrument method values up to 20.000 µl/s for the draw speed, and the audit trail documented the value for the draw speed, for example, 20.000 µl/s. This affected all Thermo Scientific Vanquish Core, Horizon, and Flex Split and Dual Split Samplers, as well as Vanquish Split Samplers NT as part of Vanquish Neo systems. This was not a safety issue, as the draw speed does not affect the analytical results and the true draw speed never exceeded 15.000 µl/s. However, this may be a potential compliance issue as the user entered a draw speed of, for example, 20.000 µl/s, the audit trail documents a draw speed of, for example, 20.000 µl/s, whereas the actual draw speed was 15.000 µl/s. With this fix, the draw speed range in the instrument method is limited to 0.050–15.000 µl/s. Legacy methods with a draw speed exceeding this limit will be refused by the instrument during the Ready Check, that is, before starting a sequence.</p>
368666	<p>Chromeleon Console – Injection Query: When using the operator "is not any" for the signature status of the sequence, a corresponding injection query found injections or sequences in the state "Reviewed" or "Approved," even though these signature states were explicitly excluded in the query condition with the operator "is not any."</p>
369814	<p>Chromeleon Studio: The chromatogram display in the Studio did not show the original unit for the y-axis for imported GAML data, but showed millivolt (mV) instead. Now the original unit for the y-axis is shown.</p>
373077	<p>Chromeleon Studio – MS Component Plot: When using multiple MS Component Plot objects in a report template, a corresponding report (printout or electronic report) only showed the MS Component Plot for the first injection in a sequence. This only happened for Report templates 1.0. Report templates 2.0 did not show this problem.</p>

ID	Description
373652	Licensing: The NFP mode would exit before the connection to the license server was restored, resulting in sequence interruption after a run due to the license server being unavailable. This has now been resolved.
376961	Instrument Driver – TSQ Fortis: A TSQ Fortis Plus system might throw a memory exception directly after MS data processing. This might also lead to an injection failing. This issue has been addressed in Chromeleon 7.3.2.
383788	Instrument Driver: When a sequence was running on a Vanquish LC stack during the time change caused by daylight saving time, an error could occur such that the pump gradient defined in the instrument method was not executed correctly. This error has been fixed. Now the gradient is executed as defined in the instrument method.
390735	Auto exporting: For injections or sequences larger than 60 MB, the Allotrope export would fail. Now, the injection or sequence can be exported in the Allotrope format without any errors.
391202	Chromeleon Console: Linked sequences are always copied via copy and paste to the destination location without carrying their sequence links. Read-only linked sequences are prevented from being copied.
391805	Chromeleon Studio – Reporting: The Filter Table property is not offered for the following Report 2.0 tables: MS Detection Settings, MS Status Log, MS Device Information, MS Instrument Method, and MS Tune Table.
397713	Precondition Log: There was a discrepancy in the Precondition Values for the Injection Volume. Whereas the injection.inject_volume and the precondition.HS40.Volume were reported to two decimals in the data audit trail, the precondition.System.Injection._Volume was reported to one decimal. Now the precondition.System.Injection._Volume is reported to three decimals.
397831	Chromeleon Studio: In a Targeted MS sequence, within the Peak Properties pane on the Components tab, the Composite Scoring tab was incorrectly labelled as "not implemented."
403894	Electronic Report Creation: When creating an electronic report, selecting the Finish button a second time during report creation would result in an inaccessible electronic report. Now the Finish button is disabled during report creation.
403932	Electronic Report Creation: When closing the Studio during electronic report generation, in some instances the Chromeleon console would also close.
406479	Chromeleon Studio – Chromatogram Plot: Missing units for MS Quantitation: When activating the Axis Titles option in the chromatogram plot for the MS Quantitation channel, the corresponding axis titles "Time" and "Response" were shown, but not the corresponding units "in" and "counts." Now with Chromeleon 7.3.2 MUa, the units are shown.
407512	Chromeleon Console – Custom Variables: Custom Sequence Variable not saved if modifications were made by the user on a list-type custom sequence variable depending on the steps followed in the Sequence Editor from the Chromeleon Console.
408213	Chromeleon Console – Linked Sequences: Using versioned processing methods would create duplicate Processing Method tabs. Now navigating to different collapsed injections, the processing method no longer creates duplicate Processing Method tabs.
411849	Import/Export: The Online Help for the WLEX import incorrectly described a Spike Group as an attribute for the Injection elements for the WLEX file. This has now been removed.

ID	Description
413872	Administration console: On the Instrument Controller License screen, the “Save Changes” button was enabled even if no changes had been made. Now if no changes were made, the “Save Changes” button remains disabled.
413877	Chromeleon Console – Linked sequences: For two linked sequences, the electronic report for one of the sequences could only be shown when both sequences were pinned. Now if both sequences are pinned, the electronic reports for both sequences are shown. If only one of the sequences is pinned, the report for the pinned sequence is shown.
413878	Chromeleon Console – Linked Sequence: When linking and unlinking sequences, the audit trail comments would differ between the two sequences. Now the audit trail comments for linking and unlinking sequences are the same for the two sequences.
414074	Discovery: Discovery is failing to publish all resources. A new gRPC configurable parameter MaxReceiveMessageSize was introduced. The CM7 Installation Guide and Enterprise Documentation were updated to include information about how it can be adjusted to allow the Discovery Service to handle larger volumes of data.
414322	<p>Chromeleon Studio – Manual Peak Integration Comment: When editing the comment for a manually integrated peak, either in the Chromatogram Plot Properties dialog box or the Peak Properties pane of the Chromatography Studio window, if previous comments already existed in the combo box of the corresponding edit field, it was very difficult to enter a new comment. Already entered characters disappeared suddenly or were exchanged with previously entered comments. This did not happen if the comment was entered in the separate Manually Integrated Peak Comment dialog box.</p> <p>This is fixed now. With this release, the comments for manually integrated peaks can be entered in the available dialog boxes and pane.</p>
411494	Audit Trail: Data Audit Trail Query is missing entries when performed at the root level of the data vault while visible at the folder level.
414611	Chromeleon Studio – Reporting: Report Templates 2.0 – Autorepeat & Page Breaks: The Insert Page Break After Each Repetition option for an Autorepeat area is not applied if the Scale-to-Fit Height option is not set to “Automatic.” This is also the case for report templates 1.0. Yet for report templates 2.0, you could not see the corresponding message in the notification bar below the ribbon if the Scale-To-Fit Height option was not set “Automatic.” Now the notification message “The defined number of vertical pages to which the print job should be fit is ignored, because an autorepeat area is defined on the sheet” appears also for report templates 2.0.
414867	<p>Chromeleon Studio – Reporting: Report Template 2.0 - Header/Footer Shortcut &F: When using the shortcut &F in the header or footer section of a sheet in a report template 2.0, the corresponding print preview or printout in Chromeleon 7.3.2 replaced this shortcut by either an empty string or a temporary file name.</p> <p>With this release, this shortcut is now correctly replaced by the name of the report template.</p>
415809	Chromeleon Console – eWorkflows: When additional samples were added in the eWorkflow wizard containing an edited cell, injections were incorrectly added to the footer. This has been resolved and now additional injections are correctly added to the sample block.

ID	Description
417163	Chromeleon Console – Instruments: Instrument reassignment workflow was hardened to require a user to have the Modify Sequence privilege in both scenarios: when the user performs it via the Assign Instrument dropdown list located at the top-right corner of Sequence Editor and when user performs it via the Sequence Properties modal window. Furthermore, if privilege actions are enforced and a user with the Modify Sequence privilege is trying to reassign the instrument, the user is always prompted to enter a Comment.
417766	Chromeleon Studio – Reporting: Creating a Data Audit Trail Report with "Include Details" for a sequence would result in an error message.
421216	Allotrope Export: When a single injection was exported in .adf format, the whole sequence was exported. Now, only the selected injection is exported.
421234	Chromeleon Studio – Reporting: Report Template 2.0 – Exporting: When using report templates 2.0 to export an injection or a complete sequence, an already existing exported file was overwritten without any warning or notification. With Chromeleon 7.3.2, already existing files are not overwritten anymore but a dedicated suffix (1), (2), and so on, is added to the target file name. This also happens when executing the export using legacy report templates from the console. If the export is executed from the legacy report designer, that is, the report designer for legacy report templates, in a Studio session of the sequence, the user is still notified that the target file for the export is already present and can choose whether to overwrite the file or not.

4 Limitations and known issues

The comprehensive list of limitations and known issues affecting Chromeleon 7.3.2 LTS are documented in the Chromeleon 7.3.2 MUa and subsequent MU Release Notes.

New, updated, and recently reported known limitations and issues identified during the development of Chromeleon 7.3.2 MUa are listed below.

4.1 Limitations with Thermo Scientific Instruments

ID	Description
165516	NTMS: Incorrect results (for example, Ratio = 99999.9, PR Element = -1) may be reported in Chromeleon when The SIEVE engine generates errors. These errors may be seen in the SIEVE log file found in C:\ProgramData\Thermo\SIEVE\.
172030	UltiMate 3000 MWD-3000 and DAD-3000: In the Instrument Method Editor for these devices, the script page offers one additional option for the data collection rate (20 Hz) that is not present in the Instrument Method Wizard. This additional option is a valid value for this parameter. Although it is possible to manually type in a value for the data collection rate that is not in the list, these values will be rejected by the Ready Check when a sequence is submitted.
CM7-25370	Vanquish Duo: Instrument Method, Electronic Report: An inverse gradient method created on Chromeleon 7.2.7 (or earlier) can be run on Chromeleon 7.2.8 or later. However, Chromeleon 7.3.2 does not support Smart Startup, Smart Standby, or Smart Shutdown settings for inverse (or tandem) gradient methods. Hence in Chromeleon 7.3.2, for an inverse gradient method created on Chromeleon 7.2.7 (or earlier) any Smart Startup, Smart Standby, or Smart Shutdown settings included in the method are neither executed nor reported.
CM7-25447	Vanquish Drivers: Vanquish Duo Autosampler: When adjusting the needle height, this is only adjusted for the left-hand sampler unit, and not for both sampling units as would be expected. Use the property Sampler2.SampleHeight to adjust the needle height for the right-hand sampling unit
148280	VH-D10-A Vanquish DAD HL: In very rare cases, the injection is running continuously and the UV signal is not recorded.
171456	When migrating from Chromeleon 6.8 to Chromeleon 7.3.2 (under Windows 10), UltiMate 3000 system(s) connected via USB may result in the PC (to which these instruments are connected) not starting. Workaround: Disconnect the USB cables for the UltiMate 3000 system(s) before starting the PC, start the PC, then connect the UltiMate 3000 system(s) via USB.
171977	Shared Devices: When configuring an UltiMate 3000 DGP or a Vanquish Dual Pump, a Vanquish Dual Autosampler, or Vanquish Column Compartment that is shared between two instruments, make sure to use non-identical device names for the instrument devices (for example, PumpLeft and PumpRight). If an UltiMate 3000 DGP or a Vanquish Dual Pump, a Vanquish Dual Autosampler, or Vanquish Column Compartment are shared between two instruments with identical device names (for example, "Pump") in both instruments, removing the driver from one instrument and moving it to the other instrument results in a fatal error. Workaround: Rename the instrument devices to non-identical device names (for example, rename the pump units to PumpLeft and PumpRight). Save the instrument configuration and restart the server. Alternatively, remove the driver, save the configuration, restart the server, and re-add the driver again.

ID	Description
172022	Accela Open Autosampler: Sequences cannot be run when the sampler does not include the DLW option. This configuration is not supported and requires a custom script.
172067	Accela Open Autosampler: When using this autosampler, a dot (".") must be used as a decimal separator.
344723	<p>UltiMate VWD-3x00(RS) and Dionex ICS-VWD: On an UltiMate system with two detectors, an idle VWD-3x00(RS) can cause a sequence interruption with an error message: "No response from VWD-3000 @ USB-<ID> for 300.000000 seconds." A similar error occurs for the Dionex ICS-VWD.</p> <p>Workaround: If you are using a VWD firmware version less than 4.10, try upgrading to VWD firmware version 4.10. With VWD firmware version 4.10, the stability of the USB-handling has been improved. However, even with VWD firmware version 4.10, if the UltiMate VWD-3x00(RS) (or Dionex ICS-VWD) is not in use for an extended period of time, a spontaneous disconnect can occur. For VWD firmware version 4.10 and earlier, if the VWD-3x00(RS) (or Dionex ICS-VWD) is not in use for an extended period of time, disconnect it from Chromeleon and only connect it when actually using it. If a spontaneous disconnect of the VWD-3x00(RS) (or ICS-VWD) has occurred, reconnect the VWD-3x00(RS) (or ICS-VWD) to resume communication.</p>
172041	ESA Drivers: Coulochem III: Before setting the cell state to ON manually, ensure that eluent is flowing into the detector. Otherwise, the detector can be damaged.
CM6-22760	TRACE 1300 GC: The autozero function does not work correctly for the FID, NPD, ECD, and FPD detector types.
CM7-25600	TriPlus RSH/TriPlus 100: When running the TriPlus RSH or TriPlus 100 in Clone mode (Autosampler serves two GCs), if the Virtual Terminal is opened from the ePanel of one of the GCs and a Sequence is started for the other, the Sequence fails with an error: "Sample – Error while validating script. (Trayplate 1: Slot 1:3)." The workaround is to close the Virtual Terminal on GC1 before attempting to start the run on GC2.
CM6-23614	TriPlus RSH: When using the TriPlus RSH in constant double pro headspace mode, starting a sequence that includes a constant double pro method will generate a validation error.
CM6-24043	TriPlus RSH: If firmware version 2.2 is installed on the TriPlus RSH autosampler, then tool changes on the instrument are not immediately recognized in Chromeleon. It is necessary to disconnect and reconnect the instrument after such changes are made; they will then be detected.
172735	TriPlus 500 HS: When acquiring a sequence with overlapping sample preparation, the system may create an audit trail log event regarding a vial or injection that is not the current injection. When this occurs, the event is logged to the current injection rather than the preparing injection to which it relates.
CM7-25760	MS Drivers: When working with MS devices, the raw file must be created prior to the injection taking place. It is therefore expected that the time stamp in the raw file header differs slightly from the injection time noted in Chromeleon.
CM7-15632	TSQ Quantiva and Endura: When removing the source from a TSQ Quantiva or Endura in mid-acquisition, the sequence does not abort.
CM7-16030	TSQ Quantiva and Endura: With these instruments the standby state reports that the instrument is on, regardless of the real instrument state.
CM7-16154	TSQ Quantiva and Endura: When creating an instrument method for the TSQ Endura or TSQ Quantiva, the MS run time is not the same as the Chromeleon run time. The user should enter the correct run time on the MS page of the Wizard.

ID	Description
CM7-17668	TSQ Quantiva and Endura: TSQ Endura and TSQ Quantiva instruments are usually shipped with a PC ("Endura/Quantiva PC") that includes all the necessary instrument data files, such as calibration files, for operating the MS instrument. If you want to control an instrument using a different PC, make sure that the specific instrument data files residing on the Endura or Quantiva PC are backed up and transferred to the new PC. For details on performing this process, please consult with your local MS field service engineer.
CM7-18129	TSQ Quantiva and Endura: After an upgrade of the TSQ Endura/Quantiva instrument driver, an error may occur when opening the Chromeleon Instrument Configuration. To resolve the error, remove the Chromeleon Mass Spectrometer driver from the configuration and then add it again. This will update the configuration information in Chromeleon to match the updated TSQ Endura/Quantiva instrument driver version.
CM7-21967	TSQ Quantiva and Endura: The TSQ Endura and Quantiva mass spectrometer method editor is supported on English operating systems with English/United States regional settings only.
CM7-24445	TSQ Quantiva and Endura: Instrument methods written with an earlier version of the method editor cannot be opened with a newer version of the method editor.
CM7-23138	MSQ Plus: It is recommended to use only the MS driver provided on the Chromeleon installation medium. Other versions of the MSQ Plus driver may not be compatible with Chromeleon. Please consult your local field service engineer for additional details.
CM7-16557	MSQ Plus and Tune Application: When using the MSQ Plus with Chromeleon, the user must wait for the Chromeleon Instrument Controller to be in idle mode before opening the Tune application. Without waiting, the MSQ Plus will not be able to change the operating mode (On, Off, Standby), or it will not be possible to run injections. To recover from this error, both the PC and the MSQ Plus would have to be restarted.
172740	There are known issues when saving or modifying MSQ Plus instrument methods or Tune files fail. This change in operation has been linked to applying monthly Microsoft Quality updates to Windows 10 and Windows 7 operating systems. Removing the Windows KB Updates will resolve the issues in most cases. However, in certain situations, it may be necessary to restore the system to an earlier point before the Windows Updates were applied. It is strongly recommended that automatic updates for Windows be disabled on systems running MSQ Plus instruments. Any Windows Updates that are planned for application on systems running these instruments should be tested at the installation site before they are installed on a system in active use.
CM7-22490	Exactive Series: When setting the divert valve parameters for an Exactive Series MS with a 2-position valve, the valve positions are recorded in the MS raw data opposite of how the divert valve parameters were configured.
CM7-17500	Exactive Series: Exactive Series instruments are usually shipped with a PC ("Exactive PC") that includes all the necessary instrument data files, such as calibration files, for operating the instrument. If you want to control an Exactive instrument using a different PC, make sure that the specific instrument data files residing on the Exactive PC are backed up and transferred to the new PC. For details on performing this process, please consult with your local MS field service engineer.
114502	MS Tuning: When one or more MS Tune Reports are deleted from their default folder (/Instrument Data/[Instrument Name]/MS Tune Reports), the list of available Tune Reports on the MS ePanel will not be automatically refreshed to reflect the change. This can occur if the reports are deleted manually, as well as if they are deleted automatically (when automatic archiving is enabled). The workaround is to close and reopen the Chromeleon Console.

ID	Description
245918	<p>MS Tune: The embedded tune window in Chromeleon can be closed while running a calibration by exiting Chromeleon. The Chromeleon window closes, and the calibration continues. An invalid entry will be added to the audit trail (for example, "Diagnostic run finished with result passed"). Restarting Chromeleon immediately will open Tune to allow the user to start a new calibration while the previous calibration could still be running. This in turn means that the results of both calibrations can be unreliable. This is different from the behavior of the stand-alone Tune application. When closing the stand-alone Tune application, a warning "Calibration is in progress. Do you want to close Tune application?" is shown allowing the user to confirm or cancel closing the stand-alone Tune application.</p>
172739	<p>Vanquish Autosampler: The option "External Rack Transfer" is not compatible with Chromeleon User-Defined Programs (UDP's).</p>
28276	<p>LC Drivers: A Vanquish instrument with two Column Compartments cannot be configured. The underlying cause for this issue may be insufficient USB bandwidth to fulfill the bandwidth reservations made by the instrument modules. When a second Column Compartment driver instance is configured with the USB address that is already used by the first Column Compartment, an error message indicates that the selected USB address is already in use.</p>
35925	<p>Vanquish Variable Wavelength Detector: If the shutter is opened or closed manually (for example, via ePanel), no firmware download is possible afterwards. The audit trail message is "Error: Cannot start firmware installation. The module is still busy."</p> <p>Workaround: After opening or closing the shutter manually (for example, via ePanel), disconnect and reconnect the Vanquish VWD before downloading the firmware.</p>
53052	<p>TSQ MS Tuning/Calibration: If the instrument is disconnected while a tune or calibration operation is in progress, the tune will not automatically fail or abort. It may be an hour or more before the instrument audit trail reports that the MS is disconnected. If the instrument is reconnected, the calibration will automatically resume.</p>
115504	<p>Vanquish Core modules require a minimum firmware version 2.01 or 2.02 for pumps, respectively. Please also use firmware version 2.01 (FW version 2.02 for pumps) for any new modules of the Vanquish Flex and Vanquish Horizon series. Vanquish Core modules can be combined with Vanquish Flex or Vanquish Horizon modules in one instrument, as long as firmware version 2.01 (FW version 2.02 for pumps) or higher is used for all modules. For existing Vanquish Flex and Horizon modules, firmware version 2.01 (FW version 2.02 for pumps) is compatible with the minimum Chromeleon version required to control the instrument (or a higher version of Chromeleon), as stated in the List of Supported Instruments.</p>
162479	<p>Vanquish Driver: For the Vanquish DAD FG/CG and MWD CG, the wellness properties for the UV/VIS lamp operation time limit and warning were transmitted and enlarged by a factor of 4 to the instrument. Warnings and limits are now transmitted correctly to the instrument.</p> <p>If you have previously set limits or warnings for the Vanquish DAD or MWD lamp operation lifetimes, these will now be read out from the firmware at 4 times the intended value. If you wish to remain with the initial settings, you will need to adapt the values set for the UV/VIS lamp operation time limits or warnings in Chromeleon by reducing them to their initial value (25% of the new value).</p> <p>Example: With Chromeleon 7.3 (or earlier), 7.2 SR5 MUK (or earlier), or 7.2.10 MUa, a setting of UV/VIS lamp operation time limit of 2,500 hours would be transmitted to the firmware as 10,000 hours. After an upgrade to Chromeleon 7.3.2, the value of 10,000 hours is read out from the firmware and set as the UV/VIS lamp operation time limit in Chromeleon. If the intended limit is 2,500 hours, you will need to adjust the limit in Chromeleon to 2,500 hours.</p>

ID	Description
163499	In very rare cases, the injection status of an injection stays on "Running" and subsequent injections are not started. Proceeding to the next injection requires a restart of the Instrument Controller. Upon restart of the Instrument Controller, the status of the injection is changed from "Running" to "Interrupted" (although "Finished" would be appropriate).
167481	Trying to acquire the pump pressure signal for 24 hrs with a high data rate (100 Hz) results in an instrument crash. This was seen with an UltiMate 3000 pump HPG-3400RS. This is due to the fact that the signal acquired at 100 Hz for 24 hrs results in 8.64 million points. The console memorizes these points and increases the size of the respective PointList, which leads to System.OutOfMemoryExceptions in the console. The only way to fix this is to stop the instrument controller and close down Chromeleon.
172736	Vanquish Drivers: In rare circumstances, if a transport error occurs with the Vanquish Autosampler (VH-A40-A or VF-A40-A) with a charger (VH-A90-A), it's not possible to bring the system into an operational state using the commands "Reset" or "Cleanup." An instrument controller restart is necessary.
172738	<p>Vanquish DAD HL: When using the command "UV.Shutter Closed" in an instrument method after the Acquisition Off commands, the Method Check does not trigger a warning or error. Using this instrument method in a sequence does not elicit a warning or error in the Queue Ready Check. However, starting the queue fails and Chromeleon reports in the instrument audit trail: "Can't change the 'Shutter' property during data acquisition, or during autozero, calibration and validation procedures."</p> <p>The command "UV.Shutter Closed" can only be inserted after the acquisition off commands using the instrument method script editor by an expert user, who should be aware that the "UV.Shutter Closed" cannot be inserted after the acquisition off commands.</p> <p>Workaround: Use an instrument method without any acquisition or a trigger that waits for the acquisition to end.</p>
172742	IQ/OQ/PQ: For the OQ/PQ for the UltiMate 3000 NCS-3500RS, in the warmup and oven test sequence Solvent B shows a wrong value on the specification sheet. Instead of "water + 0.x% acetone" the sheet shows "Caffeine..." as the value for solvent B for gradient (correct reference is line 375 instead of 372).
172746	The Vanquish Charger is only supported with Vanquish Autosamplers with temperature control.
172749	<p>The Troubleshooting Guide for the Vanquish Binary Pump VH-P10-A (hardware revision 2) can be found under C:\Program Files (x86)\Thermo\Chromeleon\bin\Troubleshooting Guides.</p> <p>English: Man-LC-VQ-PumpH-Operation-DOC4820-4411-EN-1-0 French: Man-LC-VQ-PumpH-Utilisation-DOC4820-4411-FR-1-0 German: Man-LC-VQ-PumpH-Betrieb-DOC4820-4411-DE-1-0</p>
172751	Vanquish Autosampler: The option "External Rack Transfer" is not compatible with Chromeleon User-Defined Programs (UDP's).

ID	Description
195521	<p>GCMS Single Quadrupole instruments (ISQ and ISQ 7000 families) and GCMS Triple Quadrupole instruments (TSQ 8000/9000 families) provide several options (for example, timed SRM mode) for which the permission to use the option is stored in the flash RAM of the MS hardware. If you purchase the option at the time of the MS instrument purchase, the flash RAM has the option included. If you purchase the option after the MS instrument purchase, Thermo Fisher ships you a small .ini file, which you then upload to the MS flash RAM. If a Chromeleon instrument method requires such a GCMS instrument option, but the permission for the GCMS instrument option is not available in the flash RAM of the MS hardware, the Sequence Ready Check and Instrument Audit Trail show an error message. (For example, "Instrument method cannot be run: Timed mode is not allowed under the current license. To enable timed mode acquisitions, please upgrade your software to include time mode.") This error message is somewhat misleading, as it is the flash RAM of the MS hardware that needs to be updated with the relevant permission, not Chromeleon itself.</p>
198957	<p>When using either the ISQ EC/EM or the GC ISQ/TSQ series, there exists the possibility of sequence interruptions where the injection audit trail records the message "Error initializing the raw file. CouldNotCreateRawFile."</p>
205590	<p>Vanquish Dual Pump (DGP): If a Vanquish Dual pump is configured with the option "shared bottle" selected, it should not be possible to set different eluent monitoring properties (%A/%B/%C_WarningLimit and %A/%B/%C_Level.LowerLimit) for the two pump units. However, it is possible to set the WarningLimit and Level.LowerLimit to different values for both pumps. This results in different RemainTime values for both pumps, which is not possible with a shared bottle. In addition, %A/%B/%C_Level.Value is divided by a factor of 2. That is, the system switches the pump off at half the intended Level.Value. This limitation is not applicable in cases where a Vanquish Solvent Monitor module is part of the instrument.</p> <p>Workaround: Set the same eluent monitoring properties (%A/%B/%C_WarningLimit and %A/%B/%C_Level.LowerLimit) for both pump units.</p>
238872	<p>Vanquish ISQ Family: If the device name of Vanquish ISQ Family is using Unicode characters (for example, if it is localized in Japanese) the Ready Check fails.</p>
238873	<p>UltiMate 3000 PCM-3000: For UltiMate Detectors DAD, MWD, and VWD with the PCM-3000, the automatic gain adjustment of the PCM-3000 frequently leads to wrong conductivity channel values.</p>
254951	<p>MS Method Editor: When trying to open the MS method part of multiple instrument methods, the Chromeleon Studio crashes with "System out of memory."</p>
279701	<p>Exploris 120: Opening the method editor or opening the Online Help results in an error: "Error in sample changed event handler of object Processing Method Editor. Exception of type 'System.OutOfMemoryException' was thrown."</p> <p>Workaround: Close and re-open Chromeleon Studio regularly when opening or examining MS methods.</p>
296042	<p>Vanquish Core DAD: In very rare cases, when two Vanquish instruments are configured with a Vanquish Core Diode Array Detector each, switching off one of two DAD detectors may lead to a negative interference with the second DAD. The second DAD may stop sending data, and the chromatogram stops to display detector data. As a consequence, the sequence may abort after a time delay.</p>
282028	<p>UltiMate VWD-3400(RS): In the data collection section for the UV portion of a method, the peak width value will change to 0.02 min if the method is saved and reopened. The Data Collection Rate and Time Constant will change according to the Peak Width entered in the Instrument Method Editor and stay at the desired value after the method is saved and reopened.</p>

ID	Description																																								
297798	<p>Orbitrap Exploris: On a system where the Orbitrap Exploris 4.0 SP1 driver has been installed, it is not possible to modify the instrument configuration of the Orbitrap Exploris in the Chromeleon Instrument Configuration Manager. When launching the Chromeleon Instrument Configuration Manager where the configuration was previously created, it stops responding and then closes.</p> <p>Workaround: Delete the instrument controller configuration file from the folder ProgramData, then add the module again or import a saved instrument controller configuration file. If the MS device is selected again in the Instrument Configuration Manager, the issue is seen again.</p>																																								
298674	<p>Method Translation from UltiMate 3000 to Vanquish: The temperature of the sampler cabin is not correctly translated in case a temperature for the column compartment is set.</p>																																								
299110	<p>Fraction Collector: In the instrument method for a system with an UltiMate AFC-3000 or Vanquish Fraction Collector FT, under the Fraction Collection section, the preview window will display the error "Can't determine pump flow as it is not constant over method duration. Parametername: Pump Left" even if the pump flow for the entire method is constant. This occurs when the fraction collection time starts with no set flow around the time it starts, while the collection end time has a pump flow around the time it ends.</p> <p>Workaround: The error only appears when the Pump.Flow.Nominal Command is exactly on the "End Time" and if there is no other Pump.flow command present within the Collection Time Frame. Add another Pump.flow.Nominal command at the Fraction Collection "Start Time" in the Script Editor:</p> <table border="1" data-bbox="440 1050 1326 1301"> <tbody> <tr> <td>95</td> <td>▲ 9,000</td> <td></td> <td></td> </tr> <tr> <td>96</td> <td>PumpModule.PumpLeft.Flow.Nominal</td> <td>4</td> <td>THIS COMMAND WAS ADDED</td> </tr> <tr> <td>97</td> <td>FractionCollector.FractionCollection.CollectFractions</td> <td>By_Peak</td> <td></td> </tr> <tr> <td>98</td> <td>FractionCollector.FractionCollection.CollectOutsidePeaks</td> <td>Yes</td> <td></td> </tr> <tr> <td>99</td> <td>▲ 10,000</td> <td></td> <td></td> </tr> <tr> <td>100</td> <td>PumpModule.PumpLeft.Flow.Nominal</td> <td>4,000 [ml/min]</td> <td></td> </tr> <tr> <td>101</td> <td>PumpModule.PumpLeft.%B.Value</td> <td>70,0 [%]</td> <td></td> </tr> <tr> <td>102</td> <td>PumpModule.PumpLeft.%C.Value</td> <td>0,0 [%]</td> <td></td> </tr> <tr> <td>103</td> <td>PumpModule.PumpLeft.Curve</td> <td>5</td> <td></td> </tr> <tr> <td>104</td> <td>FractionCollector.FractionCollection.CollectFractions</td> <td>No</td> <td></td> </tr> </tbody> </table>	95	▲ 9,000			96	PumpModule.PumpLeft.Flow.Nominal	4	THIS COMMAND WAS ADDED	97	FractionCollector.FractionCollection.CollectFractions	By_Peak		98	FractionCollector.FractionCollection.CollectOutsidePeaks	Yes		99	▲ 10,000			100	PumpModule.PumpLeft.Flow.Nominal	4,000 [ml/min]		101	PumpModule.PumpLeft.%B.Value	70,0 [%]		102	PumpModule.PumpLeft.%C.Value	0,0 [%]		103	PumpModule.PumpLeft.Curve	5		104	FractionCollector.FractionCollection.CollectFractions	No	
95	▲ 9,000																																								
96	PumpModule.PumpLeft.Flow.Nominal	4	THIS COMMAND WAS ADDED																																						
97	FractionCollector.FractionCollection.CollectFractions	By_Peak																																							
98	FractionCollector.FractionCollection.CollectOutsidePeaks	Yes																																							
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101	PumpModule.PumpLeft.%B.Value	70,0 [%]																																							
102	PumpModule.PumpLeft.%C.Value	0,0 [%]																																							
103	PumpModule.PumpLeft.Curve	5																																							
104	FractionCollector.FractionCollection.CollectFractions	No																																							
344351	<p>Thermo ISQ and TSQ GCMS: Instrument methods developed for the Thermo ISQ or TSQ GCMS using a driver version older than 5.0 will not be readable or usable when version 5.0 or higher of the driver is installed. The workaround is to either downgrade the driver to the older version or re-create them using the version 5 driver.</p>																																								
347230	<p>Thermo Exploris Series ePanel: On the Thermo Exploris Series ePanel the "MS Parameters" panel is missing.</p>																																								
347312	<p>For a Vanquish instrument, it is possible to change the instrument configuration while a diagnostic test is running.</p>																																								
419872	<p>Vanquish Binary Pump: When using Smart Standby or Smart Shutdown, the eluent consumption is not displayed. Instead, the Ready Check shows a message: "Eluent consumption cannot be calculated for this queue because at least one instrument method is used that does not provide a complete flow and eluent gradient specification."</p>																																								

4.2 Limitations with the Waters Driver Pack

ID	Description
148624	Instrument Driver – Waters 2690/2695: In very rare cases, a sequence was interrupted with the error message: “Acquisition finished by Chromeleon before first data point could be transferred. Maybe the run time is too short in case of blank run.”
172741	Waters Alliance 2695: It is not possible to control a column selection valve installed in a Waters Alliance 2695.
181345	Waters 2690/2695 and 2489: Very rarely a sequence interruption with an error message "Acquity System state has changed to error during run." is seen.
256747	Waters Alliance 2487 absorbance detector: Changing properties on the Alliance 2487 detector ePanel does not apply in the firmware. It is not possible to set the Data_Collection_Rate, AutozeroOnEventIn, AutozeroOnWlChange, FilterTimeConstant, FilterType, or Wavelength from the ePanel or from the Command (F8) window. These properties were removed from the ePanel. Only the property Lamp On/Off can be set from the ePanel and from the Command (F8) window.
279507	<p>Waters eAlliance 2695 HPLC and 2998 Detector: When trying to collect data, after the first injection the acquisition stops with an error message: "Acquisition finished by Chromeleon before first data point could be transferred. Maybe the run time is too short in case of blank run."</p> <p>Workaround: The Waters eAlliance separation module and the detector need to be connected via a contact closure cable.</p>
299266	<p>Waters eAlliance 2695 with Waters RID 2414 or PDA 2998: In rare cases with a Waters eAlliance 2695 with a Waters RID 2414 or PDA 2998, data acquisition is not possible and an error message “Acquisition finished by Chromeleon before first data point could be transferred. Maybe the runtime is too short in case of blank run.” is shown.</p> <p>Workaround: After inserting the remote signal cables for the detectors, data acquisition starts to work properly.</p>
317906	<p>Waters eAlliance: The curve parameter is handled differently in the GPIB and LAN driver for the Waters eAlliance. For the eAlliance LAN driver, if the curve is set to “6” in the Chromeleon IME, a linear gradient is performed. This is the same behavior seen with Waters Empower. Please note that by default the curve parameter is set to “5.” The value needs to be actively set to “6” to perform a linear gradient. Also, instrument methods created with the eAlliance GPIB driver are not compatible with the eAlliance LAN driver with respect to the curve setting.</p> <p>Workaround: If no equilibration stage is involved, the curve can be set to 5 at time 0.0 [min] and for times > 0.0 [min] following times to the demanded curve value +1.</p> <p>Note: The IME graphical view of the curve applying to the eluents should be ignored.</p>
331239	<p>Waters eAlliance LAN driver: With an instrument method in which the parameter “HPLC_System.Pump.Curve” is placed right after the parameter “HPLC_System.Pump.Flow.Nominal” in the gradient script, Channel %A switches to 100% right after inject. This can only be observed on the eAlliance display.</p> <p>Workaround: Set the parameter “HPLC_System.Pump.Curve” as the last parameter for a given gradient step. This is achieved when using the IME to create the gradient.</p>

4.3 Limitations with Agilent ICF

For a general overview regarding the Agilent Instrument Control Framework, please refer to the document *Chromeleon and Agilent ICF – Quick Start Guide – Chromeleon 7.2.pdf*, found in the

\Documents\ folder of the Chromeleon installation disk. For Agilent drivers, please refer to Agilent documentation.

ID	Description
CM7-19347	Agilent G1312B DAD: When using this device in combination with an old JetDirect card, problems may occur collecting data at 80 Hz. Users affected by this issue should contact their local Thermo Fisher Scientific representative for advice on possible solutions.
CM7-20047	Agilent VWD G1314B: When using a G1314B VWD, occasionally the chromatogram is half the expected length.
CM7-21172	Agilent ICF: If the user has the monitor DPI settings on their PC set at greater than 100%, then some parts of the Agilent LC system device ePanel are not visible.
CM7-21427	<p>Agilent ICF with 1100 or 1200 LC DAD: When acquiring data from an Agilent 1100 or 1200 LC DAD, the signal trace may be shifted to the start of the run and the end time is inconsistent. No data points are lost with a data rate of:</p> <ul style="list-style-type: none"> • 10 Hz and slower (greater than or equal to 0.025 min 0.5 sec) • 20 Hz and a low number of spectra (all other than ALL Spectra) • 20 Hz and spectrum range 190- 400 step 2
CM7-22567	Agilent ICF: When using a Diode Array Detector with the Agilent ICF, it is necessary to enable spectra collection initially (this also allows to specify the wavelength range to be used in this run). If no spectra are needed for a specific time window during the run, use the timetable to temporarily set the mode to "None."
CM7-23096	Agilent ICF: If a Fraction Collector with Thermostat is installed, the channel mapping is not correct. This can be resolved by removing the <Channel name="FC: Delay Sensor"> node from DefaultConfiguration.xml before adding the driver. After this, the user can configure the mapping for the two channels manually on the Signals (2D) tab of the Configuration dialog box.
CM7-19540	Agilent ICF: The Agilent GC System Configuration dialog box includes entries to configure the 7697A Headspace, G1888A Headspace, 7890 GC, 6890 GC, 68550 GC, and 7820 GC. Currently, it is only possible to configure the 7697A Headspace sampler. Attempting to configure any of the other modules will result in a message indicating that the modules are not supported.
CM7-25781	Agilent 7697A: The "Sample Bar Code Reader with data tracking" option on the Agilent 7697A sampler is not currently supported in Chromeleon.
CM7-19975, CM7-20451	Agilent 7697A: The Soft Config option, available via the ICF for Agilent LCs, is not supported for the Agilent 7697 HS. It should not be added to any custom ePanel, as its use can cause issues by allowing configuration changes to be applied to the sampler during acquisition.
CM7-23242	Agilent 7697A: Running multiple 7697A Headspace autosamplers on a single 247 Instrument Controller can cause Windows "Out Of Memory" errors, requiring a reboot of the 247 to resolve. Thermo Fisher Scientific therefore recommends that only one 7697A is connected to any 247 Instrument Controller.

ID	Description
CM6-23980	<p>Agilent 7697A: When starting a sequence while the 7697A Headspace Sampler is in an "Error," "Running," or "Not Connected" state, the ready check does not give an error message. After the sequence starts, the following happens:</p> <ul style="list-style-type: none"> • If the sampler is in error state, the sequence starts without getting interrupted. • If the sampler is running, the sequence stops with audit trail message "Sequence stopped by user." • If the sampler is not connected, the sequence interrupts with audit trail messages "Lost connection to Agilent 7697A Headspace Sampler," and "The instrument is offline. Check power to all modules, cabling between modules and whether the configuration matches the list of modules."
CM6-23992	<p>Agilent 7697A: The 7697 Headspace Sampler has two versions: 111-vial and 12-vial capacity configurations. The Chromeleon driver is written and tested with the 111-vial capacity version. Though not tested, the driver is expected to work with the 12-vial capacity module. The user should not use vial positions greater than 12 in this case. The rack view always shows 111 vial positions.</p>
CM7-20259	<p>Agilent 7697A: Although the vial position may be assigned in the instrument method script, unless this is done in the Instrument Setup Stage, the sequence table will not be updated. This can result in misleading information in reports and should be avoided.</p>
CM6-24004	<p>Agilent 7697A: Using the instrument front panel, the allowed range for Transfer Line Diameter is 200-600 microns. However, when setting this value in the Chromeleon instrument configuration the limit is 250-530 microns.</p>
CM6-24005	<p>Agilent 7697A: When 7697A headspace instrument method parameters are included in a report, the "fill pressure" parameter is rounded to the nearest integer.</p>
CM6-24007	<p>Agilent 7697A: Some parameters logged to the instrument audit trail are rounded to the nearest integer. However, all values are downloaded to the instrument with the proper precision.</p>
CM6-24008	<p>Agilent 7697A: When editing an existing 7697A Headspace instrument method, if the values for Purge Flow, Purge Time, or Leak Flow are changed, the Save button is not enabled until the user changes tabs.</p>
CM6-24009	<p>Agilent 7697A: When configuring an Agilent 7697A, there is an option in the user interface to "Upload Config from Instrument." This option does not work. Instead, you will need to manually configure the instrument settings.</p>
165661	<p>Agilent 1290 ELSD: For an Agilent 1290 ELSD controlled by Agilent ICF drivers, the sequence interrupts with an error message: "Error 155: An error occurred during data collection. Data integrity compromised." This issue has been reported to Agilent.</p>
165966	<p>Using an Agilent LC system with a sampler and the Agilent LC-ICF Drivers on a Japanese, Chinese, or Brazilian Portuguese operating system, the Sequence Wizard does not allow creating a sequence.</p> <p>Workaround: This issue is caused by a language satellite DLL provided by Agilent Technologies (Agilent.LCDrivers.Sampler.BusinessObjects.resources.dll). Removing this satellite DLL addresses the issue, while presenting the user interface in the English language. For example, on a Japanese operating system, remove "C:\Program Files (x86)\Agilent Technologies\Instrument Control Framework\ja\Agilent.LCDrivers.Sampler.BusinessObjects.resources.dll." Alternatively, use Agilent Chromeleon Drivers instead of Agilent LC-ICF Drivers to control the instrument.</p>

ID	Description
172059	Agilent 7697A: The 7697 Headspace Autosampler has two options for handling missing vials: Pause and Abort. An issue has been observed when the Abort option has been selected. In either mode, the autosampler overlaps sample preparation, that is sample 2 is prepared while sample 1 is acquiring. If the autosampler finds that the sample 1 vial is missing, it will abort or pause the sequence at the point it discovers the vial is missing. However, if the autosampler finds that the sample 2 vial is missing, while sample 1 is already acquiring, and the Abort option has been selected, the entire sequence will be aborted, including acquiring sample 1.
172753	Privileges: The privilege "Control Instrument While Queue is Running" does not apply to ICF controlled instruments. This privilege only applies to actions through Chromeleon properties or commands (command dialog box or standard ePanel elements). It does not apply to actions through the Agilent Status UI.
192715	Agilent LC ICF: Aborting an injection after the start of a sequence but before the injection results in an error, requiring the instrument controller to be restarted.
224052	Logging off from the Instrument Configuration Manager is now reported in the User Management Audit Trail.
222538	Agilent ICF driver: When reconfiguring ICF-based LC System, then opening the instruments page in the Console, the ePanel no longer shows the status windows for the individual submodules. Selecting the ePanel control results in the crash. This is also seen with Agilent Drivers for Chromeleon.
259115	Agilent LC System: Using an Agilent LC system with the ICF driver, a running sequence may be interrupted with an error: "Undefined complex Type 'LCMethodBaseType' is used as a base for complex type extension." Workaround: Thermo Fisher Scientific recommends using Agilent Drivers for Chromeleon.

4.4 Limitations with Agilent Drivers for Chromeleon

ID	Description
143713	Agilent 12xx LC: If an Agilent 12xx LC configuration includes the Agilent 1290 Infinity Flexible Cube, the Flexible Cube needs to be enabled in the instrument method. When creating an instrument method, Chromeleon provides an option (checkbox) to select if the Flexible Cube is used. If this checkbox is cleared, the sequence will interrupt. Workaround: Remove the Flexible Cube from the Instrument Configuration to run a sequence for which the Flexible Cube is not needed.
216488	Agilent LC Autosampler: When using pretreatment method for an Agilent LC Autosampler, it is not possible to use a command like "Eject 40.0µL to seat with 200µL/min" via the user interface, as this results in an error message. Agilent confirmed that this is known issue, which has been addressed with LC Driver 3.4. However, LC Driver 3.4 is incompatible with ADC driver (version 1.x and 2.x) due to .NET restrictions. Workaround: It is possible to set this parameter from within the method script. However, reviewing the method via the graphical user interface different parameters are displayed.

ID	Description
280985	<p>Agilent ADC 2.5: For a sampler with a long sampler device name, in the message indicating “waiting for inject response from <samplername>,” the sampler's device name is truncated to 15 characters. If two injectors are used on the same instrument, both with device names exceeding 15 characters (and equal in the first 15 characters), this will lead to a crash during driver initialization.</p> <p>Workaround: Use sampler names with less than 16 characters to minimally ensure that the sampling devices can be identified uniquely based on the first 15 characters of the sampling device name.</p>

4.5 Limitations with other third-party instruments

ID	Description
172044	Agilent 1100 Obsolete Driver: Occasionally, when using a combination of older and newer modules, the raw data was not correctly acquired.
171971	Agilent 6850: Instrument Configuration Manager does not report mismatches between the hardware and the Chromeleon configuration.
CM7-12366	<p>Agilent 5890 DICE Card: Please note the following when using the 19257 DICE card with the Agilent 5890 GC:</p> <ul style="list-style-type: none"> • Control and acquisition using the DICE card is only supported via the serial interface. The GPIB interface is not supported. • Digital data acquisition via the serial interface of the DICE card is only supported for a single channel; dual channel digital acquisition is not supported. • Currently, it is possible to select certain illegal combinations in the Configuration dialog box, such as: <ul style="list-style-type: none"> ○ Digital acquisition with the 19254 card. This is not supported. ○ Digital acquisition on one detector and analog acquisition on the other. Acquisition needs to be exclusively digital or exclusively analog. • When using the DICE card to acquire data digitally, the 5890 INET mode must be set to “GLOBAL” not “LOCAL.” Failure to do so will result in a “No response from GC” message following the AcqOn command in the audit trail. • When performing an analog acquisition, the 5890 INET mode should still be set to “LOCAL” (as described in the Online Help).
CM7-9675	Agilent 7890 GC (legacy driver): There is a backward compatibility issue that affects the Agilent 7890 GC Sampler Positions. When using a 7890 GC in combination with a 7693 sampler, certain positions in the sampler could give a misspelled value to a move command. This has now been corrected and could in rare cases lead to instrument method files needing to be updated to avoid errors.
CM7-24724, 26224, 171975	Agilent 7890B GC: With certain firmware versions, the GC does not properly send abort information to the software, meaning that events such as FID flame out, pressure errors, hardware faults, and so on, will not be recognized or reported by Chromeleon. The problem is seen in FW versions B.02.01, B.02.04.2, and B.02.05, but not versions A.01.xx.x. The 7890A GC does not seem to have this problem.
27896	Privileges: The privilege “Control Instrument While Queue is Running” does not apply to ICF controlled instruments.

ID	Description				
<p>CM7-15400, CM7-15556, CM7-15734, CM7-15736</p>	<p>PerkinElmer LC200 Autosampler: When upgrading from earlier versions of Chromeleon 7 CDS to Chromeleon CDS 7.3.2, it is necessary to reload the PerkinElmer LC200 Autosampler driver and configure the loop size within the configuration. The user should then check all instrument methods using this autosampler to ensure that they continue to function correctly.</p>				
<p>172037</p>	<p>PerkinElmer Clarus 400 GC: Some users must select AutoSystem XL in configuration in order to communicate with the PerkinElmer Clarus™ 400.</p>				
<p>161617</p>	<p>Shimadzu LC 20 native driver: If the flow rate for a pump has exceeded upper limit, the sequence aborts with an error “HPLC_System Fatal Instrument Error (-1073708575, 1).” The Shimadzu documentation states the following for the error code C00081E1 (hexadecimal converted from the decimal -1073708575):</p> <table border="1" data-bbox="443 647 1390 826"> <tr> <td data-bbox="443 647 563 826">0x81E1</td> <td data-bbox="568 647 778 826">Pump: Flow rate has exceeded upper limit.</td> <td data-bbox="783 647 1145 826">The binary/ternary gradient system is configured with pumps of different flow rate ranges.</td> <td data-bbox="1150 647 1390 826">Check the instrument configuration.</td> </tr> </table>	0x81E1	Pump: Flow rate has exceeded upper limit.	The binary/ternary gradient system is configured with pumps of different flow rate ranges.	Check the instrument configuration.
0x81E1	Pump: Flow rate has exceeded upper limit.	The binary/ternary gradient system is configured with pumps of different flow rate ranges.	Check the instrument configuration.		
<p>172062</p>	<p>Shimadzu LC-10A, LC-2010: If the user cancels the key lock state of the front panel of the instrument and then, for example, stops a manual acquisition, this is likely to lead to unexpected effects during the next operation, such as a sudden abort of the sample run.</p>				
<p>171991</p>	<p>Shimadzu LCs: The Microsoft Visual C++ 2005 Run Time component is no longer supported by Microsoft. However, this component is required for the Shimadzu LC-2010A and Shimadzu LC-10A/20A/30A drivers and is therefore installed by Chromeleon.</p> <p>If you don't use these drivers, it is possible to uninstall the Visual C++ 2005 Run Time component from the Programs and Features page of the Windows Control Panel. Alternatively, during the installation of Chromeleon, it is possible to suppress the installation of the Visual C++ 2005 Run Time component by using a response file and excluding the “__MicrosoftVisualC2005_SP1__” package. Please refer to the <i>Installation Guide</i> for details.</p> <p>Several of the Shimadzu devices can be controlled by obtaining an updated driver directly from Shimadzu (see the <i>List of Supported Instruments</i> for details).</p>				
<p>141735</p>	<p>Shimadzu Prominence-i Series: A sequence was interrupted with the error “Abort Error: Timeout while waiting for the instrument to finish, the current injection will be aborted.”</p> <p>Workaround: The Release Notes provided by Shimadzu describe a workaround for LC driver version 2.20 or later: When the system is waiting to start a blank run, the data acquisition may be interrupted in some cases. As a workaround, please set injection volume to 0.0 and change the type to “unknown.”</p>				
<p>171972</p>	<p>Shimadzu LC: For the Shimadzu LC-10, LC-20, and LC-30, the instrument standby can be activated during a run from the instrument front panel.</p>				
<p>172024</p>	<p>Shimadzu LC: Unlike most drivers, some Shimadzu UV detectors require that you select the “Advanced” filter in the Command (F8) window in order to access the Lamp On/Off command.</p>				

ID	Description
194996	<p>Shimadzu 2030: When collecting UV data, in rare cases the signal drops to a very large negative number.</p> <p>Workaround: In the driver configuration, set the signal factor for the PDA_Spectrum signal to 1.000 manually. The signal factor seems to be 1000 in some cases (most likely a localization problem on some systems with specific languages, in which the separator and thousand separator are swapped).</p>
228857	<p>Shimadzu LC 2030: Setting the instrument method to use "DataAcquisition=False" in the sequence run, might result in sequence interruption on the Shimadzu LC 2030 with an error message: "The following device is blocking the injection run termination: HPLC_System." This is an issue with the Shimadzu LC Driver.</p> <p>Workaround: Set the instrument method to use "DataAcquisition=True."</p>
227295	<p>Markes TD: If an instrument configuration includes a Kori-xr, then methods created in Chromeleon versions prior to 7.3.2 will fail a Ready Check when submitted as part of a sequence. To resolve this issue, open the method in the editor and, on the Script page, delete the command(s) that reference the "KoriTrapHeatingRate."</p>
256522	<p>Bruker Scion GC: Installing the drivers Bruker Scion 430 GC and Scion 450 GC causes several warnings in the Chromeleon IQ Report stating, "The file was not installed by any of the known packages." These warnings can safely be ignored.</p> <p>SCION 450 GC: Warnings for the following files in the directory C:\Program Files (x86)\Thermo\Chromeleon\Bin\DDK\V1\Drivers\SCION\450GC: 450GC_20.bmp, 450GC-Help-en.chm, ACE.dll, DDK.dll, DriverCert.xml, ECC.dll, ECC_Client.dll, GC450_Node.dll, General.dll, iconv.dll, libxml2.dll, log4net.dll, lua5.1.dll, lua51.dll, MultiLanguage.dll, Node.dll, Node_Client.dll, NodeView.dll, NodeXML.dll, Observer.dll, OSX_Layer_ACE.dll, SCION450GC.Common.dll, SCION450GC.ConfigUI.dll, SCION450GC.DDKInterface.dll, SCION450GC.Driver.dll, SCION450GC.Shared.dll, and zlib1.dll, and for the following files in the directory C:\Program Files (x86)\Thermo\Chromeleon\Bin\DDK\V2\Drivers\SCION\450GC: 450GC-Help-en.chm, DriverCert.xml, log4net.dll, SCION450GC.Common.dll, SCION450GC.EditorPlugin.dll, and SCION450GC.Shared.dll.</p> <p>SCION 430 GC: Warnings for the following files in the directory C:\Program Files (x86)\Thermo\Chromeleon\Bin\DDK\V1\Drivers\SCION\430GC: 430GC_20.bmp, 430GC-Help-en.chm, DriverCert.xml, SCION430GC.Common.dll, SCION430GC.ConfigUI.dll, SCION430GC.Driver.dll, and SCION430GC.Shared.dll, and for the following files in the directory C:\Program Files (x86)\Thermo\Chromeleon\Bin\DDK\V2\Drivers\SCION\430GC: 430GC-Help-en.chm, DriverCert.xml, SCION430GC.Common.dll, SCION430GC.EditorPlugin.dll, and SCION430GC.Shared.dll.</p>
335233	<p>Markes TD: After running a method that specifies tube recollection using sequence variables (that is, custom injection variables in the sequence), if the next method (same or subsequent sequence) supports recollection, but it leaves the sequence variables section blank, then it will continue to recollect on the last tube recollected. The workaround is to add a SeqVar_RecollectionType=None to the method script to ensure recollection is disabled.</p>
335233	<p>Markes TD: Running a sequence with a recollect method and then setting RecollectionType to "None" or "SameTube," but leaving the RecollectionTube blank will cause a Ready Check error.</p> <p>The workaround is to always specify a RecollectionTube. The value will be ignored when RecollectionType = "None" or "SameTube."</p>

ID	Description
335233	<p>Markes TD: The Online Help and eWorkflow provided on the DVD both specify the possible values for RecollectionType as “None,” “Same,” and “Tube.” The driver doesn’t support the value “Same,” but instead expects “SameTube.”</p> <p>The workaround is to specify “SameTube” instead of “Same” when setting up the custom injection variable for RecollectionType.</p>

4.6 Limitations with setup

ID	Description
CM7-23341	<p>Setup: When Agilent ICF is installed, the un-install of either Chromeleon or Agilent ICF fails if the Instrument Controller is running:</p> <p>Failed to execute package Agilent Instrument Control Framework A.02.04. Another application has exclusive access to the file “C:\ProgramData\Agilent Technologies\Instrument Control Framework\RCDriver.log.” Please shut down all other applications, then select Retry.</p> <p>To avoid this issue, stop the Instrument Controller before uninstalling</p>
226887	<p>As part of the Chromeleon installation, the Microsoft Edge WebView2 Runtime will be installed, and its installation package is added to the package cache of the machine so that it can be reused for the repair or modification scenarios of Chromeleon. When uninstalling Chromeleon, the corresponding package of the WebView2 Runtime component will be removed from the package cache of that machine. It is expected that this package is kept in the package cache, as this system component is kept on the system after the uninstallation of the Chromeleon software.</p> <p>Workaround: Select the Microsoft Edge WebView2 Runtime entry of the Add/Remove Program dialog box of the Windows OS system and select the Repair or Uninstall option. Selecting Repair will connect to the Internet. The package cache is NOT recreated, but Microsoft Edge WebView2 Runtime is properly installed afterward. Selecting Uninstall will remove the Microsoft Edge WebView2 Runtime component from the machine.</p>
254867	<p>Depending on the state of the machine GAC, the IQ of Chromeleon 7.3.2 may report the following recommendation: “C:\Programme (x86)\Thermo\Chromeleon\bin\System.ValueTuple.dll: The file is a shared library and a different version (System.ValueTuple, Version=4.0.0.0, Culture=neutral, PublicKeyToken=cc7b13ffcd2ddd51) of it is also installed into the global assembly cache including a binding redirect. The redirected library will always be loaded from the shared files location and never this one. Please ensure that this is by intent and does not cause any unwanted side effects.” The compatibility of these two different “System.ValueTuple.dll” file versions is very high, and it is not expected that it causes any issue in Chromeleon and the recommendation can be ignored.</p>
367826	<p>Setup in combination with Waters Driver Pack: Chromeleon versions 7.3.1 and older on a system with Waters Drivers Pack pre-installed; try to uninstall the optional component Waters Driver Pack during uninstallation of that Chromeleon version. During the upgrade installation from an older Chromeleon version to Chromeleon 7.3.2, this uninstallation routine of the pre-installed Chromeleon version (mentioned before) is executed before installing the new Chromeleon 7.3.2 components. Although the 7.3.2 setup did not request this component Waters Driver Pack, the uninstaller of the older Chromeleon version removes or tries to remove the Waters driver pack (depending on if the CM7 ISO file is mounted or not). After the installation of Chromeleon 7.3.2, the pre-installed Waters Driver Pack installation needs to be reinstalled.</p>

ID	Description
416532	<p>Uninstalling a maintenance update of Chromeleon 7.3.2 via Add/Remove Program (ARP) results in a missing IQ report, instead of an IQ that verifies that the full-installer version of the current maintenance update is restored. It is required to trigger a Station IQ of the full-installer version to finalize and confirm the uninstallation of the maintenance update. The full-installer version of 7.3.2 misses additional app.config settings required to generate the IQ for the maintenance update uninstallation process.</p>

4.7 Other limitations

ID	Description
CM7-22986	<p>During stress tests with multiple, very long sequences with more than 1000 injections, the queue was aborted with an unexpected error:</p> <p>“Queue End 24.12.2016 16:27:22 +01:00 Stopped the sequence queue run. Sequence End 24.12.2016 16:27:22 +01:00 End of sequence “Simple Vanquish Test 2016-12-21 19_37”.</p> <p>Abort Error 24.12.2016 16:27:21 +01:00 The injection audit trail cannot be saved. Error detail: Die Transaktion wurde abgebrochen. The transaction commit operation failed. The save operation failed for data item(s) “chrom://c-germoefelein/Xvault/Vanquish-H/6/Simple Vanquish Test 2016-12-21 19_37.seq/277.smp/Audit.audit”. Execution of txp [05f69eb4-c9ed-11e6-9598-005056c00008] failed. Error message: The command ‘UPDATE CJ_VERSION SET VERSION_LAST_SIBLINGS_TXN_NO = @P0 WHERE CJ_VERSION.VERSION_INVALIDATE_TXN_NO > @P1 AND CJ_VERSION.PARENT_ID IN (@P2)’ failed.”</p> <p>As a workaround, it is recommended that automatic upload be disabled when running very large sequences and uploading them manually instead.</p>
CM7-25151	<p>Scheduler: Copy/Move Sequences: Scheduler jobs copying or moving sequences to a network data vault might run into a state where the jobs cannot be completed anymore. The user must restart the corresponding Chromeleon 7 Scheduler Service to resolve this kind of deadlock.</p>
CM7-23051	<p>In a few cases, Sequences have been reported to abort with messages in the audit trail that were not conclusive, such as: “The injection audit trail / signal “...” cannot be saved. Error detail: The transaction has aborted. The transaction commit operation failed.”</p> <p>However, the SQL Server ERRORLOG files of the affected Instrument Controller PCs revealed errors due to slow file operations on the local hard drive. Thus, it is assumed that these failures were caused by poor disk drive performance. Chromeleon 7.2 SR5 introduced additional internal error reporting so that similar errors can be identified more easily in the future.</p>
CM7-25508	<p>Upload: In very rare cases, an upload may succeed, however the sequence remains locked (redirected to the XVault).</p>
SWFR-248	<p>Waters Empower Import: The following limitations apply to the import of data from Waters Empower:</p> <ul style="list-style-type: none"> • Time zone information is not supplied by the Waters toolkit API, so dates and times will be imported as if they were local. • Empower allows injections that are not contained in sample sets. These are not visible to the importer and cannot be imported unless added to a sample set. • Some peak results fields show incorrect units in Chromeleon since there is currently no mechanism to change the units on “core” fields. They are included correctly in custom fields that by default are hidden.

ID	Description
SWFR-2543	<p>Sampling Devices That Do Not Use μL As Units for Volume: Although most liquid injection devices expect volumes to be entered in μL, there are a few devices (for example, Thermo AS-HV and PerkinElmer GC Autosampler) which do not use μL as their default volume unit. If one of these devices is configured in the same instrument that also includes an injection device that uses μL, problems may be observed with volume validation in the sequence table as well as units associated with volumes in reports.</p>
172748	<p>Queries: When using Oracle as a data vault server, text-based queries (for example, searching for an injection name) are case sensitive. So, for example searching for "Extract" would not return matches for "EXTRACT" or "extract." This limitation does not apply to SQL Server data vaults since SQL Server text searches are case insensitive.</p>
138190	<p>Opening an instrument method that is assigned to a not available instrument takes up to 40 seconds for the first attempt. Subsequent attempts are faster. The issue is caused by DNS resolution of the host name.</p> <p>Workaround: Create an instrument in simulation mode and assign the method to this instrument. Afterwards, the instrument can be deleted. The DNS look-up will be faster as the physical PC is still existing.</p>
147417	<p>Report Variables: The report variables peak.evaluate, chm.evaluate, and injection.evaluate expect a formula in the invariant format (for example, "," as a list separator and "." as a decimal symbol). The evaluation does not work if other regional settings (for example, ";" as a list separator or "." as a decimal symbol) are used in the formula text.</p>
148732	<p>Admin Console: In the Instrument Controller page of the License Manager, a connected instrument may be greyed as if offline. When an acquisition is started, the status will change to Online.</p>
150978	<p>Console: Data: Dragging the height of an injection row to make it too small for the text can result in the line being hidden until the console is restarted. This behavior has been seen only intermittently and only on a few PCs.</p>
168759	<p>Instrument Method Editor – Gradient Plot: If the time stamp of the first line (white background) in the equilibration stage (for example, $t = -3.00$ min, Eluent = 100% B) is different from the one of the equilibration stage header line (orange background, for example, $t = -5.00$ min), the gradient plot indicates that an equilibration with the eluent combination selected for the first (white) line in the equilibration stage (for example, $t = -3.00$ min, Eluent = 100% B) is used from the start of equilibration (for example, -5.00 min). However, the actual gradient starts at the time indicated (for example, $t = -5.00$ min) with 100% A and ramps to 100% B at $t = -3.00$ min.</p> <p>Workaround: Fully define the equilibration stage. Ensure that the first step of the equilibration stage (white background) has the same time stamp as the equilibration stage header line (orange background).</p>
169879	<p>In rare cases, a sequence completes and some injections contain raw data, but the status shows "Interrupted" or "Idle" and the Inject Time field is empty. Raw data have been successfully acquired and stored on the local Instrument PC. The Injection Audit Trail on the Instrument PC contains complete information, including the missing details.</p> <p>Workaround: Remediation for this incident is manually re-executing the data upload from the local IPC to the Central Data Vault.</p> <p>Note: If you are affected by this problem, please contact your local Thermo Fisher Scientific representative for assistance with recovery of the missing injection details.</p>

ID	Description
171965 CM7-25633	Services: In very rare cases, if the Oracle database disk is running out of disk space and in addition an IPC cannot be connected properly, it may happen that that a sequence cannot be uploaded automatically. When trying to reboot the IPC a retry of the upload may result in an error message "A transaction package is missing on the hard disk. The order of transaction packages which should be sent to the network data vault can't be accomplished." The sequence can't be removed from queue automatically. It needs to be removed manually.
171967 CM7-25590	Chromatogram Plot: When creating a Virtual Channel, the Power Factor only increments in steps of 0.5, which does not provide sufficient flexibility for controlling the scale of the extracted data.
171968 CM7-25551	Import/Export: If two (or more) users simultaneously attempt to export a Sequence to the same location, a "Cannot export <sequence_name>" error is displayed for all.
171969 CM7-25480	Console – Data: If a Data Vault is unavailable, it is not shown as collapsed in the data explorer tree despite its sub-folders and items being inaccessible.
171974 CM7-24972	Reporting: When applying a two level Autorepeat rule with double grouping to a plot object, if the sequence contains a large number of injections and a large number of components, it is possible that software performance will degrade significantly. This has been observed when applying Autorepeat to an MS Components plot for a sequence with 27 injections and 292 components.
171986 CM7-23484	Reporting: To display the last updated date and time for a locked injection, it is necessary to use the Chromeleon report formula <code>procMeth.version.time</code> .
171987 CM7-23442	Reporting: To display the date and time in the Header or Footer of reports, the user can use the spreadsheet placeholders &D and &T respectively. During report creation these placeholders are replaced by the current date and time and formatted via the regional settings of the currently logged on Windows user account. However, this doesn't work correctly for every regional setting, for example, 24-hour time formatting. Instead of using &D and &T, the user can use the Chromeleon report formula <code>gen.currentTime</code> or <code>gen.reportTime</code> together with the necessary format, for example, <code>{gen.currentTime; "dd.mm.yyy hh:mm"}</code> . Note: The formula <code>gen.currentTime</code> is replaced by the current date/time during the electronic report creation. If you want to display the date/time when the electronic report is really printed or exported, you have to use the formula <code>gen.reportTime</code> .
171976 CM7-24600	Spectral Library: If a Chromeleon version older than Chromeleon 7.2.7 is used to create and name components from library screening results, then upon selecting the folder reference, attempts to close the dialog box with OK will result in an exception being thrown.
171993 CM7-23033	Legacy Upload: With replication framework disabled, when trying to modify a sequence while the automatic upload is already in progress the upload may fail in very rare cases and it is not possible to remove the sequence from the instrument queue by retry of the upload. To recover the sequence a copy of the sequence must be stored manually. Chromeleon 7.2 SR5 adds an audit trail entry to the manually uploaded sequence that refers to the original sequence so that traceability is ensured. Thermo Fisher Scientific recommends enabling the replication framework with Chromeleon 7.2 SR5 or a later version to avoid the problem.

ID	Description
171994	<p>Console – Data: Empty Inject Time and GUID fields have been seen in a few single injections. Raw data have been successfully acquired and stored on the local Instrument PC. The Injection Audit Trail on the Instrument PC contains complete information, including the missing details. Too few instances have been reported to identify the root cause of this problem.</p> <p>Note: If you are affected by this problem, please contact your local Thermo Fisher Scientific representative for assistance with recovery of the missing injection details.</p>
171997 CM7-22145	<p>Reporting – Discrepancy in “Last Modified” Time: When owing to differing rounding methods used, it is possible that the value of the “last modified” time for an object in a sequence has a difference of 1 second between the client display and the value shown in a report. For more details, please see the Online Help.</p>
172001 CM7-21783	<p>Processing Method – Performance When Importing Fixed Calibration Standards for MS Sequences: When working with sequences of MS data, importing injections for use in a fixed calibration can take minutes or even longer to complete, depending on the data. With this release, a new option allows you to choose whether the raw data files of the fixed calibration injections should be copied with or not. If you experience such a slow performance, you should disable this option after selecting the calibration sequence. See also section 2.3.7 Option to apply a fixed calibration without copying raw data [394985].</p>
172004 CM7-21399	<p>Queries – Injection Variables “Auto Dilution Ratio” and “Retention Time Standard”: Auto Dilution Ratio and Retention Time Standard columns are not available in the custom filter conditions for injection records (for example, in the IRC editor or summary report).</p>
172016 CM7-19836	<p>eWorkflows: The eWorkflows wizard fails with a message “Failed to retrieve the required Data Vault” when there is more than one Data Vault with the same name in the Chromeleon Domain.</p>
172018 CM7-19336	<p>Import Chromeleon 6: Due to changes in Auditing between Chromeleon 6 and Chromeleon 7, when a Chromeleon 6 Sequence is imported into Chromeleon 7, some of the text displayed in the Instrument Audit trail will not appear exactly as it did in Chromeleon 6. Refer to the topic “Viewing Chromeleon 6 Data” in the Online Help for further information.</p>
172020 CM7-18252	<p>Export: When acquiring MS data, Chromeleon acquires MS data and all other signal data, such as UV, FLD, and pump pressure signals, in separate formats. As a result, when MS data is exported, non-MS data is not exported with the MS raw data file.</p>
172023	<p>Console: Instruments – Online Plot: For the Vanquish CAD, some properties and two channels are recorded where the data is transmitted as aA and scaled to pA with 6 digits resolution. The online plot displays these numbers for the current signal value with 2-digit precision only.</p>
172025 CM7-17841	<p>Report Designer: If using a non-Chinese format as the regional setting in Windows and Chinese as the setting for Non-Unicode programs, then the header on a Chromeleon report is not correctly displayed for variables. If the format is changed to Chinese, then everything is correctly displayed.</p>
172028 CM7-17465	<p>Processing Method: On the MS Settings page, the spectral bunching value for Peak Dependent Correction that is displayed as an annotation on the chromatogram plot does not match the value entered in the processing method on the MS setting page. This is by design because the method setting defines the maximum number of spectra for averaging. The actual number of spectra used is determined by the number of MS spectra which fit the filter used for the chromatogram. This is not correctly documented in the Chromeleon Online Help.</p>

ID	Description
172029 CM7-17203	Report Designer: With some date/time formatting settings in the report, the order of month and day changes for some formats automatically. The settings in the Report Template can change based on the Windows regional settings. For example, it is not possible to set m.d.yy as format with German regional settings. The Report Template replaces this with d.m.yyyy. The substitution occurs for report variables and non-report variable entries.
172727	eSignatures: For sequences containing manually manipulated XICs saved in a software version older than 7.2.6, if the sequence was signed in a later software version without viewing the manually manipulated XICs, then verification could fail if the XICs were subsequently viewed before the verification. To resolve this situation, remove the signature, view the manipulated XIC, and re-sign the sequence. Then view the manipulated XICs once more before verification.
172734	NTMS: Due to limitations in the Sieve processing engine, it is only possible to perform NTMS processing on system with a US localization (that is, non-US localized systems are not supported). (This is also documented in the Sieve Release Notes.)
174091	Console: Data: It was observed that while a sequence is being added to the instrument sequence queue, there was a very short time slot where its parent folder got renamed while the "adding to queue" operation was in progress. Afterward, the queued sequence got stuck in the instrument sequence queue. It will cause an upload failure at the end of the acquisition using the automatic upload as the original folder name that cannot be resolved anymore and breaks the data transfer link to the central data vault. In addition, the folder name cannot be reverted to resolve the upload failure because the sequence is marked as redirected when it is queued. When the sequence is redirected, it locks the folder to prevent the renaming folder operation. Workaround: To remove the sequence from the queue, a manual move operation needs to be executed.
215589	NTMS: When processing NTMS data using the SIEVE algorithm, at times the molecular weights of similar samples may differ, even though the molecular masses are very similar. This is a consequence of how the SIEVE algorithm analyzes the data and is to be expected.
231359	Import of CMBX-Files by previous Chromeleon releases or into data vaults with an old database scheme: Chromeleon 7.3.2 is using a new database scheme for data vaults, which records the logon role in the data audit trail. If a data object (for example, sequence) contains data audit trail records with a role and the data object is exported to a CMBX-File, the import of such a CMBX-File by a previous Chromeleon release is still possible. Yet the imported data object cannot be modified anymore. Any attempt to modify it runs into a corresponding error message. A similar scenario is also present if you import the CMBX-File by the Chromeleon 7.3.2 into a data vault with an old database scheme.
231464	MS Plot: When viewing profile mode mass spectra, Chromeleon labels peaks with the actual apex m/z of the profile data. In contrast, the FreeStyle and Qual Browser software will label profile mode mass spectra with the centroided m/z. This can result in minor differences in the displayed data between these applications.
231883	eWorkflows: The sequence layout in an eWorkflow for a pair of linked instruments must only contain a Sample Block. If the eWorkflow contains Header, Footer, or Bracket blocks, then the eWorkflow can only be run in "single instrument" mode.
232285	Queries, and NTMS Frame/Results Filters: Rules that compare floating point parameters to a fixed value using the "=" condition will not round or truncate values when performing the comparison. This means, for example, that the rule "mass = 123.4" will not match a mass of 123.42.

ID	Description
236172	Chromeleon 7.2x and Chromeleon 7.3.0x client machines need the option "Receive push notifications" disabled in the Discovery Configuration dialog box to be able to join a Chromeleon 7.3.2 domain. Chromeleon 7.2x and Chromeleon 7.3.0x client machines that are already part of a Chromeleon 7.3.2 domain and have "Receive push notifications" enabled, will not receive any push notifications as this feature has been removed with Chromeleon 7.3.2. It is required to enable "Poll for updates every <number> seconds" to receive that lasted discovery information.
XPS238857	The error message "Could not connect the replication service. A TCP error (10051: A socket operation was attempted to an unreachable network) occurred while transmitting data. A socket operation was attempted to an unreachable network" that appears during sequence interruption has nothing to do with the customer network and means that data cannot be saved locally therefore the sequence is interrupted. To remove this confusion, this error message was changed to: "Connection to local communication stack failed."
240632	Interactive Results: Trying to insert a report table without header rows (for example, MS Instrument Method (XRAW), Instrument Method/Overview) in the Interactive Results pane, leads to an error message: "'Invalid cell reference' in the upper left corner (A1) of the inserted new sheet". Such report tables can still be successfully inserted in the Report Designer.
245276	DDK Driver: An injection may not terminate when an Abort error happens at AcqOn time for 3D channels.
250819	CMBX-Files and Peak Group Calibration Levels: if a CBMX-File has been created by a Chromeleon Version 7.2.10 MUa(b,c,d) for a sequence containing a processing method with peak groups, the amount values for the calibration levels of the peak groups were not saved into this CBMX-File. If such a CMBX-File is now restored by any Chromeleon Version being able to read this CMBX-File, the amount values for the calibration levels of peak groups are reset to 1.0.
254003	Custom variables: A sequence with the invisible character 0x1F (unit separator) in a custom field text of a custom injection variable aborts with an error message: "hexadecimal value 0x1F, is an invalid character." Workaround: Do not use the invisible character 0x1F (unit separator) in a custom field value.
264434	Hardware OQ: Turkish region setting causes values to disappear for Hardware OQ files. When trying to run a Hardware OQ on an instrument in Turkey, the OQ fails with the error message: "Unexpected character(s) at end of line." In addition, values in the instrument method disappear, for example, "Infinite" for PumpModule.Pump.MaximumFlowRampDown and PumpModule.Pump.MaximumFlowRampUp.
267233	ePanels: While editing ePanels, the ePanel Editor (under unknown circumstances) occasionally and spontaneously changes the background color of Edit Field controls to Light Pink and sometimes the Edit Field controls look empty.
275608	Sequence: If the sequence name contained a foreign character that was not part of the regional language code page (for example, α on an English-US system), the respective sequence could be started, but the sequence bar turned orange and showed "Disconnected."
276956	Instrument Controller: OnlineExtract for MS Channel does not perform smoothing when programmed in a script. While the command "OnlineExtract" provides smoothing parameters, these are nor applied to MS mass trace signals created with the "OnlineExtract" command.

ID	Description
282151	Instrument Method: If the chromatographic portion of an instrument method is changed without changing the MS portion of the method, the instrument method and MS instrument method can show a different date/time modified. This is due to the nature of the integration of the MS Instrument Method Editor into the overall instrument method and is to be expected.
287972	Excel-Export: When exporting Chromeleon Reports to Excel-Files incl. graphical objects (for example, Chromatogram Plot) and using a computer screen scaling greater than 100% at the same time when the export is executed the graphical objects in the created excel files, will not display the complete graphic which you see in the Chromeleon report designer but only a part of it or even nothing. This only happens when using legacy report templates. Report Templates 2.0 do not show this behavior. Using the Chromeleon excel export, it is recommend to use Report Templates 2.0 which are available from Chromeleon version 7.3.2. Otherwise, your exported excel files might contain graphical objects with incomplete content or no content.
299483	A special character (for example, the Unicode control character "Record Separator") in the comment for an injection (in the injection table) will cause a Ready Check error. A sequence run aborts with an error message "hexadecimal value 0x1F, is an invalid character."
336304	On a system where the data vault "ChromeleonLocal" is not present or not accessible and a local data vault is mounted, but not accessible, trying to import an instrument configuration shortly after the start of the Instrument Controller results in an error: "Chromeleon Instrument Configuration: Remote instrument controller can't save configuration. The Instrument Controller does not respond. It is probably very busy." Workaround: Wait several minutes after the start of the Instrument Controller before saving or importing an instrument configuration.
353518	Chromeleon XPS: If an eWorkflow is defined for multiple instruments and the instrument name is the same for two or more of the instruments, then in Chromeleon XPS, only one occurrence of the instrument will be shown. Workaround: Do not add more than one instrument with the same name to an eWorkflow being used in Chromeleon XPS.
356523	Unicode characters (such as Greek letters or special characters) are not properly displayed in the Console and in the Instrument Configuration. However, Chromeleon can handle Greek characters on a Greek system and Chinese characters on a Chinese system, but for example, not Greek characters on an English system.
372730	IPD: If the Output Mass Range on the Algorithm Parameters page exceeds the range of the data, the x-axis range of the Deconvoluted Spectrum plot will be limited to that of the available data.
375765	Processing Method: If a processing method created in version 7.3.1 or earlier is opened in version 7.3.2, repeated edits and saves within the same Studio session may cause the UI of some tabs (for example, MS Settings, Calibration, or Advanced) to be incorrectly scaled, obscuring some of the controls on the tab. To prevent this from occurring: <ol style="list-style-type: none"> 1. Select Processing Ribbon > Layouts > MS Quantitation. 2. Add or remove any tabs as desired. 3. Save the method.
377930	Driver issues (and possibly using Triggers) can lead to huge Instrument Audit Trails, if messages are logged repeatedly at high frequency (several thousand messages per second) in the Instrument Audit Trail. This results in the (Daily) Instrument Audit Trails growing to a size of several dozen MBs. Trying to open such a large Daily Instrument Audit Trail crashes the client, for example, with a System.OutOfMemoryException and can even lead to the Chromeleon client crashing immediately after start.

ID	Description
391203	Copying of sequences carried out by large transfers feature enabled in Global Policies doesn't work well when the source or destination data vault become dismounted.
412695	Atlas: When an Atlas workbook using Internal Quantitation is imported into Chromeleon, previously an exception was thrown, and the import would fail. Now, the workbook is successfully imported. The Atlas Internal Quantitation mode isn't supported, but the Atlas results are available for viewing. A warning message is logged for each component indicating that the Internal Quantitation for the component cannot be set and is set to External Quantitation.
417332	Very quick selection of multiple panes in the Data Processing ribbon by the user in the Chromeleon Studio does not remove tabs from different context in the ribbon. This doesn't happen if user selects the panes more slowly.

5 Backward/Forward compatibility issues

5.1 Chromeleon Enterprise compatibility between Chromeleon versions

In general, for customers with Enterprise Chromeleon systems, Thermo Fisher Scientific does not recommend connecting clients or IPCs with different versions of Chromeleon into the same Chromeleon Domain.

Features available in newer versions, such as email notification, automated reporting, automated LIMS export, and so on, may not work correctly with data created or acquired on an older client or IPC.

Similarly, if data that was created on a newer version of Chromeleon is accessed from a client running an older version, then the data can be opened, edited, and saved without losing any parameters specific to the newer version. But any new parameters, like data processing enhancements or newer report variables, will not be included in any data processing as they are “invisible” to the older client and may cause results or reports to be generated with different values to those which would be generated on the newer version.

Additional restrictions may also apply. If you have any questions or concerns, please contact your local Chromeleon support channel.

5.2 CMBX file compatibility between Chromeleon versions

CMBX files are used for transferring data and data objects between separate Chromeleon systems.

CMBX files may be considered “forward compatible,” that is, a CMBX file generated by an earlier Chromeleon software release is always readable in newer releases of the software.

However, the reverse is not true. A CMBX file generated by a newer release of Chromeleon software should **NOT** be imported into older releases of the software. CMBX files generated by newer software releases may contain database schema extensions that are unrecognizable in older software releases, causing significant problems or damage to the data vault of the older release.

Additional restrictions may also apply. If you have any questions or concerns, please contact your local Chromeleon support channel.

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