

GRANTA MI 1.3 Release Notes



Introduction

GRANTA MI™ 1.3 from Granta Design Limited is the latest version of the leading materials information management software system for engineering enterprises. GRANTA MI meets the disparate needs of the materials experts, product designers, engineering analysts, data publishers, and other professionals who work with information related to metals, composites, ceramics, plastics, and other materials.

Granta is committed to maintaining GRANTA MI's leading position. Regular update releases deliver new features and performance improvements, guided by input from our customers, while keeping pace with changing systems requirements. This document provides a brief overview of changes to the system modules and details some known issues.

GRANTA MI 1.3 contains over 30 new features and improvements. Many of these were implemented at the request of customers and partners, including the Material Data Management Consortium and the Materials Strategy Forum – two collaborative projects of leading engineering organizations that help to guide GRANTA MI development. We recommend that you upgrade to version 1.3 as soon as possible.

To install GRANTA MI please read the installation instructions available in the download. You will also need the alphanumeric key from your license agreement (and used in the download). If you have any problems, questions or feedback, please contact us at Granta:

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Overview

GRANTA MI has a range of system modules supporting the workflow of different roles in materials and related engineering disciplines.

- MI:Server – the core of the system. All GRANTA MI components are built around this.
- MI:Server Configuration – a Windows® application for configuring the GRANTA MI system.
- MI:Viewer – displayed in standard web-browsers, this is the main interface. ‘Read mode’ is for standard search, browsing, and use of the data. ‘Edit mode’ enables editing.
- MI:Admin – a Windows application for database schema construction and maintenance.
- MI:Toolbox – a Windows application for import, export, or transformation of data within the system (formerly known as MI:Lab).
- MI:Lab Analysis – a test data processing option that works alongside MI:Toolbox:
 - tensile, compression, creep, stress relaxation data analysis.
 - low and high cycle fatigue, fatigue crack growth, fracture toughness data analysis.
- MI:Enterprise Materials Optimizer (EMO) – helps organizations to make strategic decisions relating to materials selection or substitution, and to implement these decisions enterprise-wide by providing their engineers and designers with web-based materials selection tools customized to the organization’s business rules.

Comprehensive descriptions of these tools and the combined capabilities of the resulting materials information management system are addressed in the accompanying documentation. Please refer to the User’s Guide and the Administrator’s Guide in the download.

The main improvements in this release of GRANTA MI are:

- Enterprise Materials Optimizer – significant enhancements and usability improvements. See items (4 to 6) below.
- Smart links – help you to manage information about the vital relationships between objects in your materials database. See item (1) below.
- Functional data – improved tools for handling the format required for multi-dimensional data such as temperature-dependant materials properties. See item (7) in the MI:Viewer section below.
- Data import enhancements – improvements to enhance the traceability of imported data. See items (19 and 20) in the MI:Toolbox section below.
- Data display – clearer layout and new display options in MI:Viewer help users to navigate data, particularly where datasheets contain in-depth information. See item (8) below.
- New and updated reference data – new version of MMPDS, updated plastics data, new Medical Plastics module. See the Reference Data section items (24 to 34) below.

These and other enhancements are detailed below. Descriptions are organized in sections according to GRANTA MI system modules. Customer support staff at Granta will be pleased to provide advice on optimizing the performance of your GRANTA MI installation.

What is new in GRANTA MI 1.3?

This section details the enhancements in GRANTA MI 1.3 compared with the previous release, GRANTA MI 1.2.1.

GRANTA MI system

1. Smart links:

The new 'smart links' feature helps you to manage information about the vital relationships between objects in your materials database. It automates the creation and maintenance of links between these objects. Examples of its use are:

- Capturing pedigree – lab tests referencing a particular materials batch can be automatically linked to the record for that batch as they are imported to the system.
- Controlling pedigree – materials authorities have more control over how relationships are specified. This helps them to ensure, for example, that a test can never be inadvertently linked to more than a single batch of material.
- Change and process management – when an item of data on a record is changed, the system could automatically recognize and implement resulting changes in the links to other records. For example, if a field recording the progress of a material through a particular set of tests changes to "Done", then the system could be configured such that another record containing links to all materials that have completed testing is updated automatically.

Smart record link groups are managed in MI:Admin. Users of MI:Viewer will see no difference to links, except that some will update automatically when data values change.

Benefits:

- This new feature is extremely valuable for organizations wishing to manage large volumes of inter-related materials data (such as test data), especially for applications where traceability is important.

2. Speed optimization in MI:Viewer:

There are three time consuming phases in presenting datasheets to users in GRANTA MI. After the user makes the initial request, the data must be collated on the server; it must be delivered to the web browser; and the browser must then render it. Improvements have been made in all three areas since 1.2.x, with the following results:

- Summary Datasheets

Large Summary datasheets previously taking 12s to collate, deliver, and render are now available in 4s.

Small Summary datasheets previously taking 5s to collate, deliver, and render are now available in 3s.

- Full Datasheets

The Full datasheet rendering is now taking 7 – 8 seconds, relative to 11 – 18 seconds in 1.2.x

- Datasheet size

Datasheets are ~85% of the size of equivalent ones in the 1.2.x releases, saving 1s on large datasheets downloaded over slow networks.

3. .Net 2.0 Framework:

- The version of the .Net Framework required by the GRANTA MI system has been upgraded to 2.0.

GRANTA MI:EMO

Note, MI:EMO users will also benefit from general MI:Viewer enhancements, particularly those to selection and optimization (item 10 below).

4. MI:EMO usability enhancements:

MI:EMO was first released in GRANTA MI 1.2. Working closely with users at major manufacturing enterprises, Granta has refined the product to create an enhanced, robust tool in GRANTA MI 1.3, with particular emphasis on ease of use. Intuitive new user interface features make it simple to define criteria when identifying materials to meet specific functions, objectives, and constraints – and it is easier to apply the results of such selections to practical projects. For example, you can generate a ranked list or graphical analysis of performance relative to a reference material – very useful tools that enable you to quantify the assessment of substitution candidates. Other new capabilities make it easier to quickly explore a range of alternatives. For example, selection criteria can be easily re-applied to a new set of candidate materials, enabling designers to work initially from a list of preferred materials – but then, if required, to progressively widen the search in a systematic way.

- New database setting in the MI:Viewer Configuration Tool to enforce use of a selection template (enforced tiering) for EMO databases.

Benefits:

- These and other changes have further enhanced the performance and usability of GRANTA MI:EMO, validated by experience and feedback from initial customers. The result is a powerful tool to help you optimize your materials strategy.

5. Optimization interface: Improvements to ‘Design Objectives’ feature.

- The definition of design objectives has been simplified by replacing the original one-line ‘design objective statement’ with a sequence of drop-down lists.
- Help links appear, when available, to explain the design objective selected.

Benefits:

- More intuitive input of the design objective, which breaks down the long list of possible objectives into manageable sized steps. This enables the user to progressively build up the design objective by specifying the function, objectives, and constraints.

6. Optimization interface: Improvements to 'Reference Material' feature.

- The selected reference material is now marked with a red pin icon. This icon is used whenever the reference material appears in selection results and reports (tables and graphs).
- The reference material is now always included in the results list, regardless of whether it passes or fails the selection criteria.
- Likewise, the reference material is always included in report tables. In cases where it fails, the cells 'responsible' for the failure are shaded in red.

Benefits:

- This highly visual identification icon is a major enhancement to the reference material feature, simplifying and speeding up the interpretation of optimization results that use this feature. It is particularly useful when considering materials substitutions.
- This feature is also particularly informative when the reference material fails the selection criteria, as it identifies which criteria require adjustment.

GRANTA MI:Viewer

7. Functional data improvements:

GRANTA MI 1.3 contains significantly enhanced features for handling functional data – the format required for multi-dimensional data such as temperature-dependant materials properties. These features include better tools for dealing with datasets, such as creep or fatigue data, which consist of a large number of data series; improved presentation and labeling of graphs; and easier export to spreadsheet utilities such as Excel. There are also improvements to the management of 'discrete' data – i.e., data where a property is described not by a curve or series of numbers, but by a non-numerical value. An example might be the rating of corrosion resistance as 'Very good', 'Good', 'Poor', etc.

New functional data features include:

- The ability to handle 'Discrete' functional data, which always displays as a table on the datasheet. (See item 18 for information on the new 'discrete functional' data type.)
- Discrete functional data is selectable.
- The user can now choose what data to display in multi-series graphs or tables. The user is informed if the data they are viewing has been 'filtered'.
- A setting for float functional data enables the user to define the default format (e.g. table or graph) displayed in the datasheet. (See item 18 for information on float functional data.)

- When float functional attributes are plotted, a Y-axis label can be used instead of the attribute name. For example, an attribute named 'stress-strain curve' might be set to have an axis label of 'stress'. This feature also applies to other data types that can be plotted on a graph/chart.
- The number of available colors for graph series has been increased.
- In cases where functional data is 'Not Interpolable' only the graph is displayed.
- Formatting of functional data from multiple records in a report has been improved.
- Format of the CSV export has been improved.
- Improved formatting and display in reports.

Benefits:

- Enhanced interpretation and presentation of multi-dimensional data. Makes datasheets and exported data quicker and easier to view, understand, and analyze.

8. Datasheet display improvements:

More options have been added when displaying the full contents of a datasheet stored within the GRANTA MI database. Users can now choose to show the full "metadata" that records the context for a datasheet, and to list all of the data-to-data links between data objects on the datasheet and other items of data in the database. Conversely, a new streamlined display option allows users to suppress the display of metadata, data-to-data links, and graphical data, while providing an icon to indicate the presence of this data. This provides a condensed version of the datasheet that is quicker to view, but which allows the user to instantly click through to the full information.

The improvements to datasheet format and structure include:

- The 'Full Datasheet' now displays all additional attribute data, including metadata and data to data links, on one page/view.
- In Summary mode, all additional attribute data is hidden, unless it is specifically in the layout (i.e. selected metadata). When a data icon is clicked, the additional information is now inserted into the datasheet, instead of opening in a separate 'Data View' page.
- Access control messages are displayed by default in both the summary and full datasheets.
- Access control messages are also displayed in the Data View page.
- The Data View page for an attribute is now accessible by clicking on the hyperlinked attribute value.
- The Data View page has a new 'Printable Version' link on the page toolbar.
- Access control settings are listed at the top of each page on datasheet printouts.

Benefits:

- All data/information can be viewed /printed on one screen/document.

- The summary datasheet provides a concise overview of the record attributes that is quicker and easier to view, but also allows the user to instantly insert additional information of interest.
- Greater visibility of access control information on datasheets and printouts.

9. Application home page:

- A new, optional, feature that enables administrators to set an application homepage that provides custom information to the users.
- Accessed, from any part of MI:Viewer, by clicking on the GRANTA MI icon in the toolbar.
- In cases where no application homepage has been setup, the GRANTA MI icon accesses the database homepage as it did previously.
- The database name at the top of the browse pane is now active. Clicking on the name takes the user directly to the database homepage.

Benefits:

- Acts as a user-friendly portal to MI:Viewer.
- Provides administrators with a tool/mechanism to inform users of the latest updates to the system features, capabilities and developments.
- Allows corporate identity and messaging to be applied to the MI:Viewer system.
- Application and database homepages can be readily accessed from MI:Viewer.

10. Selection/optimization interface improvements:

The format of the 'Required Properties' section of the selection/optimization interface has been reconfigured as follows:

- The terminology for data input has changed; for example, 'minimum' has become 'is at least'.
- The user can now specify the required format (e.g. enter a minimum only) for all data inputs.
- The format of logical inputs has changed to a pair of 'Yes' and 'No' check boxes.
- The format of discrete inputs has changed. A set of discrete values may be ordered or unordered (see item 18 for more information). If ordered, a range of values can be input. Discretes with one or two values will be selectable from check boxes.
- The format of discrete functional inputs is similar to those for discrete inputs.
- The 'Reset' button at the bottom of the selection/optimization page has been removed and replaced with a 'Clear' button, which clears the selection criteria.
- The 'Go' button has been relocated next to the 'Clear' button.
- An additional 'Clear' link has been added to the page toolbar that clears the selection results in addition to the current selection criteria.

Benefits:

- Improved layout and terminology provides greater clarity and flexibility when defining constraints, making the input of data more intuitive.
- Change of terminology for data inputs avoids confusion in setting constraints for attributes such as maximum and minimum service temperature.

11. Attribute Help Page:

The format and content of the attribute notes has been restructured and enhanced, so that a custom help page can be associated with an attribute.

- A hyperlinked attribute name in MI:Viewer indicates the presence of an attribute help page. The attribute note icon has been removed from all datasheets.
- Clicking on the hyperlinked attribute name displays the help page in a pop-up window.
- The content of the attributes is HTML pages. The content is stored using the database 'Files' in MI:Admin.
- A help page can be assigned to an attribute or meta-attribute in MI:Admin.

Benefits:

- Provides users with a direct link to the meaning of their attributes.

12. Selection results improvements:

- The 'History' list is replaced with a 'Re-apply' list of previously used selection templates.
- A new 'add records to report' link adds all records that pass the selection to the report list. Note that this feature preserves the existing records in the list.

Benefits:

- Provides greater clarity on possible actions once a selection has taken place.
- Helps when applying the same criteria to different datasets – for example, when progressively widening the search for a suitable material.

13. Selection report improvements:

- A new link at the top of the Selection Report page that links to the complete pass/fail table. All cells containing failed selection criteria are shaded in red.

Benefits:

- Information on why a material failed the selection criteria is available to the user, and identifies which criteria require adjustment.

14. New MatML exporter:

- New MatML language (version 3.1) exporter included for exporting MaterialUniverse and MMPDS design data.

Benefits:

- Enhanced export capability for the MaterialUniverse and MMPDS databases.

15. When copying a record, the user is given the option to rename the Full Name (i.e. the datasheet title) at the time of copying.**Benefits:**

- Reduces the likelihood of generating duplicate datasheet names.

16. A Unit Conversion page lists all units in the current database, and their equivalent units and conversion factors in the unit systems. The page can be accessed from the help glossary, or by typing the link directly into the browser address bar.**Benefits:**

- Provides clarity and transparency on units used within different units systems.

17. Other usability improvements:

- Default text size on the main MI:Viewer toolbar is larger.
- A new 'Please wait' graphic has been added to inform users when the application is retrieving or processing data.

Benefits:

- Clearer information on the main toolbar.
- Feedback for the user while the application is processing.

GRANTA MI:Admin**18. The Schema tool has a number of new, changed, or deleted functionalities.**

- The EMO Computed Properties tool has been enhanced:
 - The 'Computed Properties' have changed to 'Function Objective Constraint'.
 - The 'Function Objective Constraint' tree forms the series of drop down lists that appear on the optimization page under 'Design Objective' in MI:Viewer.
 - The original computed properties are now assigned to a function constraint objective node on the tree and can be linked to their own help pages.
- There is a new type of record link group 'Smart'. The existing type of record link group has been renamed to 'Static'.

- Tables cannot be deleted if they are used by a record link group (smart or static).
- Attributes cannot be deleted if they are used in the criteria for a smart record link group.
- 'Functional' data type has been renamed to 'Float Functional' and contains a new setting to specify whether the attribute contains ranged data.
- New 'Discrete Functional' data type, whose units is a discrete type.
- Discrete types can be set to 'Ordered'.
 - When upgrading a database, existing discrete types will be set to 'unordered'.
- New 'Default Selection Type' setting for Range, Point, Functional, Discrete, and Integer attributes. This sets the default input format on MI:Viewer's selection/optimization page.
- New option to set a Y-axis label for Range, Point, Functional, and Integer attributes.
- For attributes (and meta-attributes) of all data types, there is an option to assign a help page.
- Layout now includes greater control over display of access control settings.
- New 'Add Folder' button for database files, which adds a folder (and its contents) and its sub-folders.
- Attribute help and Function Objective Constraint help is stored in the database 'Files' and must be located inside a folder named 'dbhelp'.

Benefits:

- More control over settings/options for design objectives, the selection/optimization page and axis labels. Enables expert users to configure the system to be more intuitive to occasional users, helping these users to be more productive and ensuring greater consistency in the use of GRANTA MI across the organization.
- Greater flexibility in displaying access control settings.

GRANTA MI:Toolbox

19. Text Importer plug-in improvements:

- Import of embedded media – enables a file to be imported into a File data type attribute.
- Import of data to data links.
- Import of discrete functional data.
- New command line interface for the Text Importer – enables more than 200 files to be imported at once.
- New 'Apply to All' button added to the Duplicate Record dialog; allows duplicate record settings to be applied to all records within an import.
- Improvements to the import of functional data:
 - Import of grid data.

- Functional data can be merged.
- The 'show as table' on a datasheet setting can be set (on a per attribute basis).
- 'Null' markers in text files recognized, to be imported as n/a data points (used in grid data).
- Improvements to the interface:
 - New setting to only show valid text files for the selected template.
 - New dialog shows messages from the import.
- Improvements to the templates:
 - New elements added to support the new features.
 - Better validation and error reporting.
 - Some areas of the template have been redesigned to solve some commonly encountered problems and improve usability.
 - Version number upgraded. Valid templates from GRANTA MI 1.1 and 1.2 can be upgraded by the plug-in.

Benefits:

- Can capture source files along with text – enhances traceability of data.
- Text Importer can be run as a scheduled task, for a large number of files.
- 'Apply to All' button speeds up multiple imports of duplicate record data.
- Support for the new functional data features of GRANTA MI 1.3.

20. Excel Importer plug-in improvements:

- Import of discrete functional data.
- New 'Apply to All' button added to the Duplicate Record dialog; allows duplicate record settings to be applied to all records within an import.
- Improvements to the import of functional data:
 - Functional data can be merged.
 - The 'show as table' on a datasheet setting can be set (on a per attribute basis).
 - The number of parameters allowed for functional data has been increased from 10 to 30.
 - The number of series allowed for series functional data has been increased from 20 to no limit.
- Import of the short name of a record.
- For a hyperlink, a target and description can be imported along with the address.

Benefits:

- 'Apply to All' button speeds up multiple imports of duplicate record data.

- Support for the new functional data features of GRANTA MI 1.3.
- Enables a record to be imported with a different Short name to its Full name.

21. Excel Exporter plug-in improvements:

- Improvements to the export of functional data:
 - The number of parameters allowed for functional data has been increased from 10 to 30.
 - The number of series allowed for series functional data has been increased from 20 to no limit.
- Export of the short name of a record.
- For a hyperlink, a target and description can be exported along with the address.

Benefits:

- Enables a record to be exported with both short name and full name.
- Support for the new functional data features of GRANTA MI 1.3.

22. Usability improvements:

- Plug-ins are only visible to users with the correct privileges.

Benefits:

- Simplifies MI:Toolbox for Read Users.

23. Export to MI:Lab Analysis Plug-ins:

- 'Import from clipboard' button added to the four Export to Summary Module plug-ins.

Benefits:

- Enables MI:Viewer record lists to be imported from the clipboard, as with the Excel Exporter.

Reference data modules

24. Material prices in the MaterialUniverse data modules have been completely revised.

- New estimated prices for over 3,000 materials have been generated using an improved and updated price model.

Benefits:

- For commonly used materials, pricing is both up-to-date and more accurate in absolute terms. For the less common materials, where 'real' pricing is hard to obtain, prices are predicted more reliably than before and gives a much better indication of relative trends

within a class of materials – for example, within cast irons or aluminum alloys or filled thermoplastics.

- An important resource for cost reduction initiatives.
- An important resource for trade-off studies, e.g. cost vs mass of components; plastic vs metal.
- Makes it possible for Granta to supply pricing updates to customers with greater frequency than with each release.

25. New and updated attributes in the MaterialUniverse.

- Three new attributes have been added to the MaterialUniverse (Unnotched impact strength at 23°C and -30°C, and Notched impact strength).
- Revised Minimum service temperature values for polymers.

Benefits:

- New impact and updated thermal attributes provide more information on low temperature performance, enabling more informed material selection, particularly for polymers for low temperature application.

26. New thermoplastic elastomer (TPE) data in the MaterialUniverse.

- Seventy TPE records, segregated into 11 classes (SBS, PVC-elastomer, POP/POE, TPO, SEBS, TPV, TPU, TEEE, PEBA, MPR).
- Includes the following new attributes: Tensile strength at 100% and 300% strain, Elongation at yield, Compression set at 23, 70, and 100°C, Tear strength, and Abrasion rate.

Benefits:

- Optimize engineering design with TPEs: navigate the TPE jungle; find the optimal TPE for the job; avoid the cost of the wrong choice; know that you have surveyed the field and considered all the options.
- Support production and marketing of TPEs: develop new materials and analyze their value; analyze and present competitive positioning – both within class (e.g. TPU vs TPU), and out of class (e.g. TPV vs SEBS); support customer service and design consulting.

27. New data on biodegradable polymers in the MaterialUniverse.

- Three new records have been added for commercially available biodegradable polymers (TPS, PHA and PLA).

Benefits:

- Helps environmentally informed polymer selection. Particularly important for the selection of materials for packaging applications.

28. New data on magnetic materials in the MaterialUniverse.

- Two additional families of magnetic materials: ceramic soft-magnetic ferrites (e.g. Mn-Zn, Ni-Zn, Co-Ni ferrites) and electromagnetic amorphous alloys (e.g. Metglas iron-based and cobalt-based alloys).
- Data is given for magnetic properties (remanent and saturation inductions, coercive force, and maximum permeability) and for certain other properties.

Benefits:

- Improved material selection for applications requiring: low-loss magnetic materials (e.g. very high frequency electronic devices) or low coercivity with low magnetic hysteresis (e.g. low-frequency power transformers, ultra-sensitive read-write heads for magnetic recording equipment).

29. ProcessUniverse has been restructured and new records added.

- Process records have been restructured into a uniform format, at all levels, with a more intuitive organization. The key facts about each process are now the most prominent in the record.
- Generic records have been introduced into the shaping processes and surface treatment trees.
- Two new joining records (snap-fit and projection welding) and one new surface treatment record (polymer powder coating) have been added.

Benefits:

- More comprehensive resource and selection tool for manufacturing processes for material joining and surface treatment.
- More intuitive structure, making it easier to navigate and find information.

30. Attribute Help Pages in the **MaterialUniverse** and **ProcessUniverse**.

The format and content of the attribute information used to provide background scientific information in the MaterialUniverse and ProcessUniverse data modules has been restructured and enhanced.

- Description: one line description of the attribute.
- Test notes: details on how the attribute value is determined.
- Material selection notes: details / guidance on how to use the attribute in material selection and how similar attributes are related.
- Link to 'science note' (where applicable): in-depth, textbook level, information (authored by Professor Mike Ashby of Cambridge University) on: how the attribute is determined, the science underlying its origins, and how performance relates to generic material class/structure.

Attribute help pages now appear in a pop-up window in MI:Viewer, see item 11 for more information.

Benefits:

- Provides users with a direct link to the meaning of material and processing attributes and gives guidance on how they should be used.
- Enables users to readily confirm that they are using the most suitable attributes for their selection.
- Science notes enable users to quickly drill-down to an authoritative description of the underlying science relating to an engineering attribute – saves time spent looking up reference information when analyzing a problem in-depth.

31. MMPDS (formerly MIL-Handbook-5) updated to version MMPDS-02.

The MMPDS data module has been updated to version MMPDS-02 and includes the latest data and the following additional features:

- Graphical data on residual strength (vs crack length).
- For creep and fatigue data; the source data is now included along with the best-fit curve.

Benefits:

- On-line access to the latest MMPDS-02 data.
- Access to source data for fatigue and creep performance enables more in-depth evaluation of the dataset.

32. Updated CAMPUS data module.

The CAMPUS[®] Plastics data module has been updated with the latest CAMPUS ISO comparable standards information.

- Information on approx. 5,880 resins from 25 leading vendors.

Benefits:

- On-line access to the latest CAMPUS data.

33. Updated IDES Plastics data module.

The Granta IDES Plastics database has been updated with the latest information. The layout and structure of the data has been improved for clarity and for speed of material selection using this particularly large database.

- Approx. 62,000 datasheets for specific resin grades.
- Approx. 500 suppliers worldwide.
- Approx. 53,000 ASTM and 19,000 ISO datasheets.

Benefits:

- The latest IDES data.
- Material selection tasks are approximately 50% faster.

34. New Medical Plastics data module.

This new data module extends the MaterialUniverse data, providing additional data of interest to medical device designers. New materials records include TPE and biodegradable polymeric materials (items 26 and 27, above). The medical plastics module adds a **Bio-data** section to the standard MaterialUniverse attributes. Key attributes are:

- Bio-data: Sterilizability (EtO, radiation, steam autoclave), Medical grades available (ISO 10993 or USP class VI), Food contact grades available (FDA 21 CFR 177, EEC/EU, BfVV/BfR, or NSF 51 and 61).
- Low temperature properties: Minimum service temperature, Low temperature impact strength.
- Clear/transparent plastics: Refractive index.
- Chemical resistance: Chemical resistance index, Environmental stress cracking index.

Benefits:

- Establishes the optimal plastic or elastomer for a medical device or food contact application and consider alternatives.
- Finds materials with medical approvals and the right sterilizability.
- Identifies which of these materials also have the required strength, stiffness, impact, thermal, electrical, optical, and chemical or environmental stress cracking resistance properties.
- Helps users to consider all possible medical plastic and elastomeric options with the systematic, rational, and exhaustive methods of GRANTA MI's selection process.

Issues Fixed in this Release

The number given relates to the internal tracing reference. Please use this if you need to contact Granta.

GRANTA MI system

11036 Memory use and caching strategy has been optimized to allow all non-selectable data to be omitted from the caches. This helps the caching of multiple large databases simultaneously.

MI:Viewer

10406 Write users should no longer have problems editing and deleting metadata.

11182 When editing metadata and data to data links for an attribute, the user is prompted to save the metadata before editing the data to data link.

MI:Toolbox

7797 Statistical Calculation plug-in
The configuration file for the plug-in does not require customization in order to write metadata information to the database.

Known Issues

There are a small number of known issues with the software and its functionality in this release. A summary of these is given below. The number given relates to the internal tracing reference. Please use this if you need to contact Granta.

Upgrading from GRANTA MI 1.2

- Backup** It is strongly recommended that you backup any custom files to a different directory before performing the upgrade.
- Database** It is strongly recommended that you backup your database before performing the upgrade. The database update is performed by the Installation Manager. In a few cases it may encounter some issues, if this happens, please contact Granta.
- If you are upgrading GRANTA MI 1.2 standard databases e.g. 'MI Starter Database', if these databases do not contain additional customer information that must be retained, Granta recommends that the new GRANTA MI 1.3 versions of these databases are used instead.
- FE Exporters** The GRANTA MI 1.3 FE Exporters will not be available for use with the upgraded GRANTA MI 1.2 standard databases e.g. 'MI Starter Database'. If these databases do not contain additional customer information that must be retained, Granta recommends that the new GRANTA MI 1.3 versions of these databases are used instead, for which the FE Exporters will be available.
- If you wish to use the upgraded v1.2 databases with the v1.3 FE Exporters, please contact Granta.

Database import from CES to GRANTA MI

- 10181 When a database is imported from CES to GRANTA MI, record link groups are not added automatically to the datasheet layout.
- The workaround is to use MI:Admin to add a record link group to a layout manually. Note that record link groups can now be added under any layout heading.

MI:Viewer

- 2082 Clicking 'to top' button can cause some browsers to reload page.
- 2932 All limit selections require criteria to be entered in the primary selection table. If no criteria are entered in the primary selection table, no results are returned. (If selection criteria are only entered in the related tables using the cross-tabular selection capability, no results will be returned.)

MI:Viewer

- 3520 The 'Results per page' preference is partially ignored for 'Related records'.
- 7299/
7786 Changing the GRANTA MI Administrator security group may cause an exception. If this problem occurs, the solution is to restart the GRANTA MI service.
- 9100 If the value of a computed property is too large, the selection results pane will display 'INF' (for 'infinity') instead of a value.
- 10132 The default limit for uploading a file using MI:Viewer is 4 MB. This limit is set by .NET. The limit is most relevant to pictures and embedded media files. Attempting to upload a larger file will result in an exception.
- A user with sufficient privileges can change the limit for GRANTA MI. Add the element
<httpRuntime maxRequestLength="4096"/>
inside the <system.web> element in the MI:Viewer web.config file. Change the maxRequestLength value as desired, note that the value is given in KB. (The default location of the file is 'C:\Inetpub\wwwroot\MI\web.config'.)
- 10189 If a folder is converted to a record, its name is not indexed.
- 10562 Configuring MI:Viewer to use anonymous access fails because anonymous access is disabled in the main MI:Viewer configuration file.
- 11260/
11427 For float functional data that is set to show as a table by default, when the table view is filtered, the alternate graph view does not reflect the filter settings.
- 11337 After performing a cross-tabular selection, the 'Refine' link in the Selection Results pane links to the simple selection page, and the cross-tabular criteria is lost when subsequently clicking the Advanced Selection link.
- 11380 After performing a selection, clicking the browser 'Back' button displays an error message in the left pane, replacing the selection results.
- 11550 In some circumstances, when the browser 'Back' button is clicked after displaying two (or more) datasheets in succession, the same datasheet is redisplayed. The workaround is to use the browser functionality to go back two pages.
- 12477 When a comparison table report is saved to Microsoft Excel, attempting to rename the worksheet results in an error message from Excel.
- The workaround is to save the workbook, this renames the worksheet with a valid name and it can then be renamed as required.

MI:Admin

- 3150 Parameter values for graphical data can be deleted by Admin even when they are in use. This results in an error.
- 2921 Temperature units can be deleted.
- 10546 When an existing discrete value is renamed, and that value has been set for data in the database, the new name will not be searchable (in MI:Viewer) until the full text cache for the database has been regenerated.

MI:Toolbox

- 7729 Excel Importer or Excel Exporter plug-in
- If the client operating system (OS) is set to a French locale, but Microsoft Excel on the client OS is set to an English locale, the Excel Importer or Excel Exporter plug-in will report the following error when attempting to import or export ‘Ancien format ou bibliothèque de types non valide’ (Translation: ‘Old format or invalid type library’).
- This is an issue with Microsoft Excel, see <http://support.microsoft.com/kb/320369> for more information. - Can be fixed by installing the multilingual user interface pack.
- 7232 Excel Importer plug-in
- When importing data from an Excel workbook, an error occurs if the worksheet is incorrectly formatted. When identifying worksheets for import, the plug-in matches the worksheet name used in the Attribute Lookup worksheet on any part of the name. Therefore, if the workbook contains worksheets that are not intended for import, but have similar names, they may be erroneously matched.
- The workarounds are to identify worksheets for import by their index number, or to ensure that worksheets that are not for import have a completely different name.
- 11527 Export to Creep Summary Module plug-in
- When the “Remove Selected” button is used to remove records from the list, they are removed from view but are still included in the analysis.

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- 10446-2 If GRANTA MI and the metasearch module are installed on the same server AND Integrated Authentication is enabled in IIS AND the Apache Tomcat user is not configured as a valid read user for GRANTA MI, the search fails. The user credentials specified in the metasearch module’s configuration are ignored in preference for those of the Tomcat service.

MI:Lab Analysis

- Installation** When the MI:Lab Analysis add-ins are installed, they are only loaded as add-ins for the user which installed them. To register the add-ins for a new user, run the MILab1.4.4_UserReg.exe, which is installed in 'Program Files\Granta\Granta MI\MILab1.4' directory.
- Compatibility** The MI:Lab Analysis modules are no longer compatible with the CES4 range of software. Data can only be imported and exported from GRANTA MI.
- Tensile Summary** Typical tensile curves generated by the MI:Toolbox 'Export to Tensile Summary Module' plug-in suffer from sharp corners and irregularities around the yield point. This only occurs for stress-strain curves that exhibit double yield point characteristics.
- Fatigue Crack Growth Analysis (7460)** FCG analysis - threshold calculation: When importing da/dn and DK data, if the analysis option to calculate the threshold is checked, in some cases the resultant threshold lies in the middle of the DK range rather than being in the region of its lower bound. This problem only occurs for decreasing deltaK test data. Automatic calculation of the threshold value cannot be used with decreasing deltaK test data. No such problem is encountered if the crack, load and cycle data are imported and da/dn and DK data are calculated by MI:Lab prior to the threshold calculation.
- Importing data (10236/7)** When importing data from the Compression and E561 Fracture Toughness module, errors may be reported.
- Microsoft Office 2007** Please note the MI:Lab Analysis is not compatible Microsoft Office 2007.