

# **GRANTA MI 4.1**

## **Release Notes**



## Introduction

GRANTA MI™ 4.1 from Granta Design Limited is the latest version of the leading materials information management software system for engineering enterprises, building on the major version 4.0 release. 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 in versions 4.0 and 4.1, and details some known issues.

The version 4 releases reinforce the position of GRANTA MI as *the* system to support best practice materials data management. New capabilities include features of particular relevance to data with each of the following characteristics (which are typical of corporate materials data):

- Data that changes regularly (for example, there are new tools to track and notify users of changes)
- Complex data (for example, new features aid display and use of functional data)
- Inter-related data (for example, there are enhanced features for storing and displaying the relationships between data records in tabular form)

Together with recent enhancements to the reference data available along with GRANTA MI (see [www.grantadesign.com](http://www.grantadesign.com) for details) such enhancements make the system more useful for a wide range of applications, including: composites data management, restricted substances, steels, and medical devices.

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

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## GRANTA MI System Overview

GRANTA MI is a modular system, enabling you to construct a GRANTA MI solution that meets your needs.

- MI:Server – the core database system. All GRANTA MI modules are built around this. Included with MI:Server is MI:Server Configuration, a Windows® application for configuring the GRANTA MI system.
- MI:Viewer – the main web browser user interface enables browsing, searching, editing, management, and use of both corporate materials data and reference information via your browser.
- MI:Admin – a Windows application for database schema construction and maintenance. MI:Admin is provided to any organization purchasing MI:Server and MI:Viewer licenses in order to manage and use in-house materials data.
- MI:Materials Gateway – a new option allowing data and tools from GRANTA MI to be accessed within selected CAD and CAE software. The first implementation, MI:Materials Gateway for Pro/ENGINEER, is now available as a beta release. Further implementations will be available in future – see the Granta website for details.
- MI:Toolbox – a Windows application for import, export, or transformation of data within the system.
- MI:Metals Lab – a test data processing option that works alongside MI:Toolbox:
  - provides a template database schema for managing metals data.
  - tensile, compression, creep, stress relaxation data analysis.
  - low and high cycle fatigue, fatigue crack growth, fracture toughness data analysis.
  - Note – MI:Metals Lab was previously known as MI:Lab Analysis. The naming change is in preparation for a future release of analogous composites tools.
- MI:Optimize (formerly known as MI:Enterprise Materials Optimize) – helps organizations to make strategic decisions relating to materials selection or substitution, and to implement these decisions enterprise-wide. It provides engineers and designers with web-based materials selection tools, customized to the organization's business rules.
- MI:Restricted Substances – reporting capabilities to assist risk assessment and risk management relating to restricted substances.
- MI:API – programmatic access to the data managed in GRANTA MI, enabling you to integrate in-house systems and data with your GRANTA MI installation.
- MI:Eco Audit – Beta-released software available with GRANTA MI 4.1, enables rapid estimation of the environmental impact (energy use and CO<sub>2</sub> footprint) of a product.

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.

## Summary of Key Enhancements in Versions 4.0 & 4.1

### Key new features in GRANTA MI 4.0:

- **Notification** – users receive notice of changing data, with particular applications for test and design data management, and for risk management related restricted substances. See item (1) in the “Detailed Descriptions” section (pages 7-18) below.
- Improvements in the management and use of the **Functional Data** that is particularly valuable in describing complex materials properties. See item (2).
- Upgrades to the **Tabular Data** capability introduced in GRANTA MI 3.1, enabling better management and display of the critical relationships between data. See items (12) and (17).
- New **Composites Data Schema**. See item (6).
- **User Data Storage**, improving productivity by retaining a user’s key settings. See item (3).
- **Data Updater** capabilities – of particular use in enabling easier updating of Granta reference data. See item (4).
- Improvements to the **Importer** and **Record Manipulator** plug-ins: A series of enhancements to ease the import of the full range of supported data types into the system via the text, Excel, and bulk data importers. See items (18) to (20), (22).
- “Moogle”, an “**MI Google**” **capability** that allows selected data in a GRANTA MI-hosted database to be exposed to Google searches (for publishing applications). See item (7).
- Improvements to the **MI:Optimize** tool (formerly MI:EMO). See item (23).
- Miscellaneous improvements to display, notation, copy-and-paste, etc. (items 8, 13–16)

### Key new features in GRANTA MI 4.1:

- Further improvements to the **Notification** service, including the ability to watch data within a record, and to receive notifications by email. See item (1) below.
- **MI:Eco Audit** tool (Beta version, available on request), providing the ability to model the energy consumption and CO<sub>2</sub> footprint of a product across its life cycle. See item (24).
- Further improvements to the **MI:Optimize** add-on module, including the ability to rank results by a specified attribute. See item (23).
- **Version control for attribute values** within a record enhances traceability, making it much easier to follow the change history of a specific data value. See item (11).
- In **Data Updater**, the ability to view the contents of a patch before applying it. See (4).
- Further improvements to the **Importer** and **Exporter** plug-ins. In particular, support for macro-enabled Excel 2007 (\*.xlsm) files. See items (18 – 21).

## Enhancements to GRANTA MI reference data products:

In the data releases at the time of **GRANTA MI 4.0** (August 2010):

- New reference data for composites – subsequently enhanced in version 4.1. See item (25).
- New reference data for steels. See item (26).
- New reference data for Human Biological Materials. See item (27).

In the data releases at the time of **GRANTA MI 4.1** (December 2010):

- Improved MaterialUniverse data (28).
- Updates to CAMPUS Plastics and IDES Plastics (29).

The table shows which enhancements will be of interest to particular interest groups. Enhancements are in version 4.0 unless noted. The item numbers in brackets refer to the detailed descriptions of features on pages 7-18, below.

Interest group	Relevant features (item # below)	Key benefits
Materials data management community	<ul style="list-style-type: none"> <li>• Notification – enhanced in 4.1 (1)</li> <li>• Tabular data (12), (17)</li> <li>• Functional data (2)</li> <li>• Storage of user sessions (3)</li> <li>• Version control on data – added in 4.1 (11)</li> <li>• Importer and Record Manipulator enhancements (18) to (22)</li> <li>• Other minor enhancements</li> </ul>	<ul style="list-style-type: none"> <li>• Keep track of changing data (including proactive e-mail notification with version 4.1)</li> <li>• More help to identify and understand relationships between data</li> <li>• Better display of the functional data and more accurate data interpolation</li> <li>• More effective tracking of changing data (with version 4.1)</li> <li>• Improved productivity</li> <li>• More flexible data import</li> </ul>
Composite engineers and designers	<ul style="list-style-type: none"> <li>• Composites data schema (6)</li> <li>• Composite Design data (25)</li> </ul>	<ul style="list-style-type: none"> <li>• Enable best practice composites data management</li> <li>• Composites data from the NCAMP and AGATE projects</li> </ul>
Organizations aiming to manage risk associated with restricted substances	<ul style="list-style-type: none"> <li>• Notification (1)</li> <li>• Data updater (3)</li> <li>• Tabular data (12), (17)</li> </ul>	<ul style="list-style-type: none"> <li>• Proactive alerts on changes in the status of a substance, material, or legislation (including e-mail notification with version 4.1)</li> <li>• Easier quarterly updates of the Restricted Substances Data Module</li> <li>• Identify and display key relationships in simple tabular form</li> </ul>

Interest group	Relevant features (item # below)	Key benefits
Managers and materials teams seeking systematic ways to optimize cost and performance	<ul style="list-style-type: none"> <li>• MI:Optimize enhancements (23)</li> </ul>	<ul style="list-style-type: none"> <li>• More designers use it more often; better chance of material strategies becoming embedded in design</li> <li>• Easier to analyze results, scan for 'near misses', fine-tune optimizations – better results, improved quality, lower costs (additional enhancements in version 4.1)</li> </ul>
Reference data users	<ul style="list-style-type: none"> <li>• Data updater (4)</li> <li>• New medical, steels, composites data modules (25–27)</li> <li>• MaterialUniverse updates with version 4.1 – core materials, price, eco data (28)</li> <li>• Updated CAMPUS and IDES Plastics data in version 4.1 (29)</li> </ul>	<ul style="list-style-type: none"> <li>• Update Granta reference data modules with minimal disruption</li> <li>• New data for lightweight materials, steels, human biological materials, composites</li> <li>• Updates to generic materials data and plastics data in version 4.1</li> </ul>
Materials information publishers	<ul style="list-style-type: none"> <li>• Data updater (3)</li> <li>• “Moogler” (7)</li> <li>• Publishing enhancements (15)</li> </ul>	<ul style="list-style-type: none"> <li>• Update data with minimal disruption</li> <li>• Attract more users to your resource with a new search capability</li> <li>• Web browsing of data is more attractive and easier</li> </ul>
Steel users and producers	<ul style="list-style-type: none"> <li>• New steels data (26)</li> </ul>	<ul style="list-style-type: none"> <li>• Access respected steels data from Stahldat and MI-21</li> <li>• Integrate reference data with materials data management</li> </ul>
Medical device manufacturers	<ul style="list-style-type: none"> <li>• New Human Biological Materials data (27)</li> </ul>	<ul style="list-style-type: none"> <li>• A new data resource providing mechanical property data on bones</li> <li>• Integrated with GRANTA MI's existing tools for in-house materials data management</li> </ul>
Materials experts and designers minimizing environmental impact	<ul style="list-style-type: none"> <li>• New MI:Eco Audit in version 4.1 (Beta release) (24)</li> </ul>	<ul style="list-style-type: none"> <li>• A new add-on module enabling rapid estimation of the environmental impact (energy use and CO<sub>2</sub> footprint) of a product</li> </ul>

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's New? – Detailed Descriptions

This section details all enhancements in GRANTA MI versions 4 releases, compared with version 3 releases. Changes are in version 4.0 unless identified as GRANTA MI 4.1 items.

### GRANTA MI system

#### 1. Notification of changes to records:

MI:Viewer allows users to be notified when changes are made to records they are interested in. Users are able to mark records, folders, and tables as objects they wish to 'watch'.

- Changes to watched objects are reported via a personalized notification page in MI:Viewer.
- A Watch List page shows the records of interest being watched.
- Records can be added to the watch list from the Contents tree and other MI:Viewer pages.

**Note:** In GRANTA MI 4.0, Notification is part of the MI:Service Layer, and

- requires the MI:Service Layer to be installed on the same computer as MI:Viewer.
- must be enabled as a service in the MI:Viewer Configuration tool.
- requires access to the User Data Store database in order to store watch lists.

*In GRANTA MI 4.1:*

- Users can subscribe to receive notifications via email.
- Watch for changes to data within a record – watch specific attributes.
- Easier access to notification page and watch list via a new button in the toolbar.
- In the MI:Server Configuration tool, Administrators can configure users' email notification options and view users' watch lists.

**Note:** In GRANTA MI 4.1, Notification is no longer part of the MI:Service Layer. The requirements noted above no longer apply.

*Benefits:*

- Keep track of changing data – e.g., get a notification if new design allowables are generated for your key materials.
- For restricted substances, ensure proactive alerts to the appropriate staff on any changes in the status of a substance, material, or legislation (proactive risk management).

## 2. Improvements in management and display of functional data:

- Interpolation for grid data can now span 'holes'. If there are missing data points around the point of interest, the next nearest points are used in the interpolation, and the missing points are ignored.
- New interpolation method: Cubic spline.
- Improvements to display of functional data in MI:Viewer.
- When editing functional data in MI:Viewer, column headings are now included inside the editable area. Columns have also changed order.

### *Benefits:*

- Functional data is crucial to describing many key materials properties – you can now display and edit this data more effectively, and you have improved options for data interpolation using these functions.

## 3. User Data Storage:

User Data Storage is the ability for users to store web session data in a persistent manner.

- Store record lists used in MI:Viewer.
  - The existing record list is stored automatically, users need take no extra actions.
  - A different list is stored for each database.
  - Each user has their own record lists.
- The information is stored in a 'User Data Store' database, configured from the MI:Viewer Configuration application. Only one user data store is required per GRANTA MI instance.

### *Benefits:*

- Improved productivity for regular users – the system remembers your key settings.

## 4. Data Updater – changes to **management of databases** in the GRANTA MI system:

The MI:Server Configuration application now has the following capabilities:

- Ability to upgrade the database schema so that it matches the current software version.
- Ability to update a database, that is, update the data content of individual records

### *In GRANTA MI 4.1:*

- Where a database is updated using a patch, the contents of the patch can be viewed in the MI:Server Configuration Tool before the patch is applied to the database.

*Benefits:*

- Granta reference data modules can now be updated quickly and easily, without disrupting links and analyses created using the existing version (enabling, for example, a smooth quarterly update process for the Restricted Substances Data Module).
- It is easier to make incremental changes to GRANTA MI databases without disrupting other aspects of the database setup, links, etc.

**5. FEA export:**

The following capabilities can be set in an FEA exporter configuration file:

- Ability to suppress export of access control information for a table.
- Ability to export full parameter details on a per-data basis.

The following additions have been made to exported data in the Initial XML:

- Metadata is distinguished as such.
- Tabular data is exported.

*In GRANTA MI 4.1:*

- Attribute version information is exported.

*Benefits:*

- More flexibility in exporting data for use in FEA software.

**6. Composites data schema**

- A new database schema, developed with members of the Material Data Management Consortium (MDMC), is now available, supporting efficient storage of both in-house composites data and new composites reference data (see item 22). In future releases, this will be augmented with composites data analysis tools – it is available today for customers with an interest in composites data. Contact Granta for details.

*Benefits:*

- Best practice composites data management, based on MDMC member experience.

**7. “Moogle” – a new “MI Google” capability for publishing applications**

- Selected data in a database on the Internet can be exposed to Google searches.
- Links can be provided from the search results to other data in the database, with access to those links being restricted to subscribers.

*Benefits:*

- Publishers can attract more interest in their information resources via Google searches. If you wish to take advantage of this capability, please contact Granta.

**8. Scientific/Engineering Notation:**

- Ability to use Greek letters and symbols in attribute names, datasheets, and charts.

*Benefits:*

- Improved support for standard scientific / engineering notation and formulae.

**9. Licensing Details:**

In the MI:Server Configuration application:

- Expiry date of the current license is displayed.
- License key can be updated (provided the current license is in date).

*Benefits:*

- Helps you to manage your GRANTA MI license and ensure that you stay up-to-date.

**10. Other changes to the MI:Server Configuration application:**

- Ability to set a startup delay, to avoid the MI:Service starting before its configuration database is available after a computer reboot.
- Improved logging.

*Benefits:*

- Improved productivity in the administration of a GRANTA MI installation.

**11. Version Control for attribute values:**

*In GRANTA MI 4.1:*

- The Version Control functionality, which captures previous versions of data and the associated change history, now applies at the level of data attributes – previously version numbers were only assigned at the record level.
- An explicit version number is given to every item of data on a data record – the user can easily track back through previous versions of the record, see where that version number changed, and thus identify where the data was altered and see previous values.

*Benefits:*

- Enhanced traceability - it is much easier to follow the change history of a specific data value.

## GRANTA MI:Viewer

### 12. Tabular data in MI:Viewer:

Tabular data, introduced in GRANTA MI 3.1, is an important new feature that allows relationships between data in different GRANTA MI records to be established, information about the nature of that relationship to be captured, and the display of this information in a simple tabular format on the relevant datasheets.

In GRANTA MI 4.0, this new feature is extended – Tabular data can be edited.

- Existing rows can be edited.
- New rows can be added.
- Rows can be deleted.

*Benefits:*

- More help for identifying and understanding relationships between data – tools to capture data on these relationships and present them in tabular form.
- This is particularly helpful for restricted substance applications – for example, in order to generate a table within a materials record showing which substances that material are impacted by which regulations, and how.

### 13. Copying graphs for use in other applications:

- Copy and paste of graphs will include the key.
- 'Copy Chart To Clipboard' tool is available when the mouse hovers over the graph.

*Benefits:*

- Improved support for reports and presentations using graph data.

### 14. Bookmarking:

- Ability for users without administrative privileges to generate a bookmark link, for a datasheet or search.

*Benefits:*

- Users can bookmark a favorite search.

## 15. Improvements to support material information publishing:

- Text data can be displayed with formatting.
  - Long text data may be formatted as 'plain text', or as 'Markdown'. Plain text is treated as it always has been. Markdown text can use HTML formatting e.g. lists.
    - For information on Markdown (a text to HTML conversion tool), see <http://daringfireball.net/projects/markdown/syntax>

### *Benefits:*

- Text information on the datasheet more readable – of particular value to publishers using GRANTA MI to support information resources with significant quantities of textual information.

## 16. Miscellaneous improvements:

Other improvements to the MI:Viewer application include:

- Contents
  - Ability to change subset available from the subset node.
- Datasheets
  - Datasheet is reloaded automatically after changing the subset.
  - Associated records for tabular data can be displayed on a datasheet, in a similar manner to linked records.
  - The overbar indicating the precision of a number is only displayed when needed.
- Report
  - Attributes can be removed from the compare report.
  - Record list can be ordered by record name.

### *In GRANTA MI 4.1:*

- Search
  - Results from a combined Search and Select operation can be ranked by any of the selection criteria.
  - A Pass/Fail report can be generated for a search.

### *Benefits:*

- Browse changes make GRANTA MI more intuitive to use.

## GRANTA MI:Admin

### 17. Improvements to **Tabular** attributes:

- Tabular data, introduced in GRANTA MI 3.1, is an important new feature that allows relationships between data in different GRANTA MI records to be established, information about the nature of that relationship to be captured, and the display of this information in a simple tabular format on the relevant datasheets. New in 4.0...
- Ability to edit the linking attribute to another table.
- A tabular attribute can be set to be searchable. Searching is currently restricted to:
  - Reporting whether or not data exists in the tabular attribute.
  - Searching 'Linked attribute' and 'Linked column' columns, if the underlying attribute is searchable.
- Associated records for a tabular attribute can be added to a layout, in a similar manner to linked records.
  - Forward and reverse directions are available.
  - Records can come from two 'hops' away.

#### *Benefits:*

- More help for identifying and understanding relationships between data – tools to capture data on these relationships and present them in tabular form.
- This is particularly helpful for restricted substance applications – for example, in order to generate a table within a materials record showing which substances containing that material are impacted by which regulations, and how.

## GRANTA MI:Toolbox

### 18. Text Importer plug-in improvements:

- Change to the template schema: an attribute has been added to the 'Text' element to return the value(s) from a group of items if 'all', 'any', or the 'first' item yields a value.

For example, a part number could be in one of five different formats. An item is constructed to match each format, but only one is expected to give a value in one instance.

#### *In GRANTA MI 4.1:*

- Deletion of existing data: an input file can be marked up to indicate that a data value already in the database should be deleted.

#### *Benefits:*

- Improved support for long text attributes.

**19. Excel Importer plug-in improvements:**

- Ability to append new series of functional data to existing data.
- Ability to append new rows of tabular data to existing data.
- For float functional data, the interpolation method and scale type for a parameter can be set on a per-data basis.
- Records can be imported with a tree structure.
- Access control permissions for the record can be set during an import, provided the user performing the import has the requisite permissions to do so.
- Excel 2007 (\*.xlsx) files can be imported.

*In GRANTA MI 4.1:*

- Deletion of existing data: an input file can be marked up to indicate that a data value already in the database should be deleted.
- Macro-enabled Excel 2007 (\*.xlsm) files can be imported.

*Benefits:*

- Easier and less disruptive to add information to existing data sets.
- Improved support for functional data.
- Improved support for access control.

**20. Bulk Data Importer plug-in improvements:***In GRANTA MI 4.1:*

- Macro-enabled Excel 2007 (\*.xlsm) files can be imported.

**21. Excel Exporter plug-in improvements:**

- Naming scheme for the exported worksheets.

*In GRANTA MI 4.1:*

- Macro-enabled Excel 2007 (\*.xlsm) files can be exported.

*Benefits:*

- Improved usability.

## 22. Record Manipulator plug-in improvements:

- Ability to move and copy records on the tree.
- Ability to delete records in non-version controlled tables.
- Ability to withdraw and revert records in version controlled tables.

### *Benefits:*

- Improves ability to quickly change properties for multiple records.

## GRANTA MI:Optimize (formerly MI:Enterprise Materials Optimizer)

### 23. Upgrades to the MI:Optimize tool

- Redesigned selection 'wizard' makes it easier to specify requirements:
  - When setting an objective, changing one item will not reset the other choices.
  - The EMO administrator can define default settings.
  - The Step 4 page is only accessible when additional settings are required.
- Improvements to the Pass/fail report:
  - Pagination.
  - Show/hide the numerical data 'behind' the pass or fail result.
  - Pass/fail report can be copied to the clipboard/exported to Excel. The report includes the underlying numerical data.

### *In GRANTA MI 4.1:*

- Ranking of results: optimization results can be ordered by any of the attributes specified in the Critical Requirements step.
- Improvements to the user interface:
  - Each stage of the optimization process now has a descriptive name.
  - The project summary is displayed in the left-hand pane, and updates automatically for each stage of the process.
  - The results list is displayed in the left-hand pane, and can be updated at any time.
- The project summary and results list can be printed.
- Optimization and search projects now have different file extensions, to minimize the risk of confusion:
  - Optimize file extension: .emo.gmi
  - Search file extension: .search.gmi

*Benefits:*

- More designers will use these tools more often; better chance of your material strategies becoming embedded in the design process.
- Easier to analyze results, scan for 'near misses', and fine-tune optimizations – better results, improved quality, lower costs.

## GRANTA MI:Eco Audit

### 24. New Eco Audit tool (Beta version, on request):

*In GRANTA MI 4.1:*

The Eco Audit tool provides the foundation for designers to address environmental sustainability objectives. This Beta functionality provides an assessment of the energy consumption and CO<sub>2</sub> footprint of a product across its life cycle. Importantly, the tool can be used during the early stages of the product development process – before costs have been committed and environmental impacts 'locked in' to the design. The Eco Audit tool includes the following functionality:

- Generate a report of the energy consumption and CO<sub>2</sub> footprint of the product across the material, manufacturing, transport, use and end-of-life life cycle phases.
- Graphical output allows the user to quickly identify the dominant life cycle phase for energy consumption and CO<sub>2</sub> footprint.
- BoM Generator Excel plug-in – allows the user to input the Bill of Materials along with the simple product information required to run the Eco Audit report.
- Available as a custom report within the MI:Viewer environment.

**Benefits:**

- Quick and simple assessment method enables the user to identify opportunities for reducing environment impacts and costs during the early stages of product development.
- Unlike full Life Cycle Assessment (LCA) tools, the Eco Audit tool has been designed specifically for use by designers and engineers and requires no previous LCA experience.

To gain access to the Beta version of the Eco Audit tool, please speak to your Granta sales representative. We would welcome any comments you have on this tool.

## Related Data Product Enhancements

The following new data product releases provide additional value to GRANTA MI customers – contact Granta Design for more details.

### 25. Composite Design data module – version 1

- Selected data from the AGATE Project.
- Selected data from the NCAMP Project.

#### *Benefits:*

- Valuable composites data, integrated in a single database, available in the same system as tools to manage your corporate composites data.

### 26. Steels data

- New Stahldat data module providing steels data from Germany's Stahlinstitut.
- New MI-21 steels data from the Metals Information for the 21st Century (MI-21) project.

#### *Benefits:*

- Steels data, integrated in a single database, available in the same system as tools to manage your corporate materials data.

### 27. Human Biological Materials data module

- A new database, created by Granta. This first release provides mechanical data on specific bones.

#### *Benefits:*

- Provides data that is useful for modeling during medical device design.

### 28. Materials & Process Universe data

#### *With GRANTA MI 4.1*

- 117 new “core materials”: 86 honeycombs (Al, Nomex, GRFP, impregnated paper, stainless steel, PC, PP, PEI), 24 foams (PET, PEI, PU, SAN), 7 natural materials (end-grain balsa, cork-board) – Subset includes all commonly used core materials.
- 10 new SMC/BMC records – covers a wider range of grades.
- Revised & updated eco data – addition of all standard composite manufacturing processes, new Eco-indicator 99 values (added alongside Eco-indicator 95 values).
- Routine data updates: price, CAMPUS Plastics, IDES Plastics, MoldFlow, eco processes.

- New 'Material form attribute' – enables filtering based on material form (e.g. long fiber composites, unidirectional composites, wires, etc).

*Benefits:*

- Updated generic materials reference data aids comparison of materials properties and selection of materials.
- New information resource on materials for lightweight design (sandwich panels, etc.).

## **29. CAMPUS Plastics and IDES Plastics data**

*With GRANTA MI 4.1*

- The CAMPUS ® Plastics data module has been updated with the latest CAMPUS ISO comparable standards information. New information on approx. 5,300 resins from 19 leading vendors.
- Updated IDES Plastics data module – the Granta IDES Plastics database has been updated with the latest information. Around 2-3% increase in number of grades, and update to manufacturer details to account for mergers and acquisitions in polymer manufacturing.
  - Approx. 79,000 datasheets for specific resin grades.
  - Approx. 725 suppliers worldwide.
  - Approx. 63,700 ASTM and 32,000 ISO datasheets.
  - Hyperlinks to ASTM datasheets on IDES website.

*Benefits:*

- Provides access to the latest CAMPUS and IDES data.
- Simplifies the identification of specific commercial grades and suppliers for polymers.

## Upgrading from GRANTA MI 3.x or GRANTA MI 4.0

### Custom files

It is strongly recommended that you back up any custom files (e.g. FEA export templates, custom home pages) to a different directory before performing the GRANTA MI software upgrade.

### Search projects

- GRANTA MI 3.x search projects will not be available for use in MI:Viewer 4.1.
- GRANTA MI 4.0 search projects can be used with MI:Viewer 4.1.

### Databases

- It is strongly recommended that you back up your existing databases before performing the upgrade.
- If you are upgrading GRANTA MI 3.x or GRANTA MI 4.0 standard databases (e.g. 'MI Starter Database') that do not contain any additional customer information that must be retained, Granta recommends that you use the new GRANTA MI 4.1 versions of these databases instead.

#### *Installing Databases*

The distribution of databases was changed with the release of GRANTA MI 3.0. We now supply databases as SQL Server 2005 backup files with an associated .dbinfo file. If you have SQL Server and MI Server on the same physical server, you can use the .dbinfo file to install the database through the MI:Server Configuration application.

You will still need administrative access to SQL Server to be able to restore the backup through this route. If the SQL Server is on a separate server, please get your DBA to restore the backup file and map a SQL user with datareader, datawriter permissions to this database so you can make a connection from MI:Server.

#### *Upgrading Databases*

Previously, database upgrades were carried out using the installation manager. The upgrade scripts have now been incorporated into the MI:Server Configuration application.

After the software upgrade, the databases will have a status of "Must Upgrade". To upgrade the database, click on the database entry in the list, then either right-click and choose "Upgrade Schema", or click on the "Upgrade Schema" button at the bottom of the screen.

When a new database is added that has a previous schema version, the software will automatically prompt you to upgrade. As previously, you will need to run the upgrade as a SQL user with sufficient privileges to modify the schema in SQL Server (such as the sa user).

## Reconfiguring audit logging after a software upgrade

In your existing installation, changes may have been made to the log4net configuration file `C:\Program Files\Granta\GRANTA MI\Server\config\log4net.config`

- to switch on audit logging.
- to change the location of the audit log files.

Upgrading GRANTA MI overwrites the `log4net.config` file, so any changes made to switch on audit logging or modify the location of the audit log files will have to be repeated after the upgrade.

## New security groups

Due to User Access Control (UAC) in Windows Vista, Windows 7 and Server 2008, a new installation using `BUILTIN\Administrators` no longer works unless the user is the actual Administrator on the computer (being in the administrators group is not sufficient). This is because the GRANTA MI application is unable to query the `BUILTIN\Administrators` group. To avoid being locked out of the software after it has been installed, a GRANTA MI 4.0 or 4.1 installation creates the following groups and assign them to the four MI security roles:

- `COMPUTERNAME\MI_READ`
- `COMPUTERNAME\MI_WRITE`
- `COMPUTERNAME\MI_GRANT`
- `COMPUTERNAME\MI_ADMIN`

If the software detects that these groups are already present, then it will use the existing groups.

## Notifications (upgrading from GRANTA MI 4.0 to 4.1 only)

Users' watch lists and notifications will not be preserved when a database is upgraded from GRANTA MI 4.0 to 4.1. Users will need to reconfigure their notification settings manually.

**Note:** this applies to the upgrade from version 4.0 to 4.1 only. Future releases of GRANTA MI will preserve notification settings and data across database upgrades.