CES Selector 2009 Release Notes

These Release Notes apply to the following CES Selector editions and to customized CES Selector packages created by adding additional data modules to one of these editions:

- CES Selector (Basic Edition)
- CES Eco Selector
- CES Polymer Selector
- CES Medical Selector
- CES Aero Selector

The Release Notes detail the enhancements in CES Selector 2009 compared with the previous release: CES Selector 2008.

Known Installation Issue

For the vast majority of users CES Selector runs without any problems. However, we have had a few reports of conflicts with Symantec Endpoint Protection (a virus protection software). The problem manifests itself as follows:

- **Vista** - when CES Selector is started, a dialogue box appears saying 'CES Selector has stopped working'. When this dialog is closed, Vista informs the user that Data Execution Prevention has closed CES Selector

- **Windows XP** - when CES Selector is started, an hour glass appears momentarily, but nothing happens and CES Selector fails to start

Both of these issues are caused by a bug in the Symantec Endpoint Protection software and can be resolved by updating Symantec Endpoint Protection to the latest Maintenance Release - MR3 or above, available from Symantec's website. These maintenance releases are patches to their software and are not the same as either the version number – e.g. Version 11, or the frequent virus database updates that occur.

As we do not develop the Symantec Software it is difficult for us to help you install the latest maintenance release and we suggest you contact your company's IT department. Alternatively you can read the instructions given here by Symantec. (They refer to Google Chrome, but the Symantec program is doing the same thing to the CES software.):
http://service1.symantec.com/SUPPORT/ent-security.nsf/docid/2008090310121448

If after upgrading to MR3, or above, and restarting your computer, CES Selector is still not working, please contact support@grantadesign.com for further help with this issue.

What is new in CES Selector 2009?

CES Selector Software

1. New **Guidance Charts** added to limit stages. When setting a limit constraint on a material's property during selection you can now view a bar chart that provides a quick visual indication of the range of values for that property and the 'completeness' of the active dataset – Bar charts are displayed by clicking the icon next to the property min/max entry boxes. They are available for any properties described by numeric data.

Benefits:

- Get guidance on appropriate property values to enter when specifying limit stages
- Reduce the likelihood of specifying unsuitable selection constraints, which can result in the exclusion of all, or no, records
- Identify the amount of data available for a particular property. Useful for large databases, such as IDES Plastics

2. **Attribute notes added to limit stages** – hyperlinked from the property names. As for datasheets, the notes contain: a short summary of the property, information on how the property is determined and, where appropriate, guidelines for material selection

Benefits:
- Check the 'meaning' of properties at the point of entry. For example what does 'limited use' for durability attributes mean
- Avoid specifying inappropriate constraints

3. New capability to **flag / identify Favorite Records** – for example, your company's preferred materials, in a selection project. Add records to favorites list using the 'Add to Favorites' option in the right-click menu of the browse tree. Favorite records are identified with a *star* icon wherever the record name appears in the software (browse tree, results list, graphs, etc). Favorites can be quickly identified on selection charts using the new 'Show Favorites' option on the graph stage toolbar. Favorite lists can be exported, imported, cleared and assigned to a database using the *Favorites* options under *Tools* on the main toolbar

Benefits:
- Quickly and easily see how the performance of particular groups of materials – for example, your company's preferred materials, compare with other candidate materials identified in a selection project. Answer questions such as 'can I use an existing material or should I consider qualifying a new one?'
- Share your favorites list with colleagues.
- Create a library of favorites

4. The capabilities of the **Eco Audit Tool** have been enhanced as follows:

- New capability to specify the recycle content of a material. Choose from, *0% (virgin)*, *typical %*, or add a user-specified quantity by overwriting one of the default options.
- End of life analysis added. Calculates the environmental burden associated with: landfill,

combust for energy recovery, downcycle, recycle, re-engineer and reuse
- Country electricity mix added to use phase. Allows mix to be specified by: region, country or fossil fuel percentage
- New records added for *electrical components*
- Updated summary report. Displays both *energy usage* and *CO2 footprint*
- New eco audit help, launched from the section headers in the product definition dialog, and CES Help, provides full details of the underlying methodology, calculations and data used

Benefits:

- End of life, enables a full audit of environmental impact throughout product life cycle
- Compare end of life strategies and design for end of life (e.g. design for disassembly)
- Account for the wide variation in environmental burden associated with different countries' electricity supplies
- Specify actual recycle contents used in products
- Simplify analysis of products containing electronic sub-assemblies
- Rapidly investigate *what if* scenarios. For example, impact of different end of life options and electricity mixes
- Full transparency of underlying calculations and data

5. New capability to add **Comments** to all selection stages and reports. Click on the *Notes* icon in the stage and report header bars and enter text, comments, notes, etc about the selection stage. These notes are displayed on mouse-over, in the selection project report and are saved in the project file

Benefits:

- Record details about your selection project. For example: why certain constraints were applied, what material/process was finally selected and the reasons why.
- Enables complete documentation of a selection project and improves auditability

6. New indices added to *Performance Index Finder*

- Permeability indices extended to include more load cases
- New index for sphere loaded with external pressure

Benefits:

- Extended coverage of standard design load cases, particularly for packaging applications

7. Other Software enhancements include:

General functionality
- Refresh of main toolbar and addition of new *Tools* button – simplifies access to *Eco Audit Tool*, *Favorites* and *Options* settings
- Custom subset: Added ability to include/exclude all records at the table level
- Selection report 'automatically' updates whenever selection parameters are changed

Datasheets
- Datasheet link buttons only displayed when links are present

Graphs

- Multiple selection of records in results list and labels on graphs, using Shft, Ctrl, Ctrl+A keys and drag box. Enables right-click menu options to be applied to multiple records / labels (e.g. delete labels, reformat labels, recolor records, etc)
- *Copy* added to right-click menu in Selection project results list and Search results – enables selected record names to be copied and pasted into other packages
- Exclude records from active subset directly from charts and results list using the right-click menu (need to switch-on functionality in Tools/Options…/Graph menu)
- *Bring to front* / *Send to back* added to the right-click menu in graphs and results list
- Incremental zoom, on mouse click, added to graph *magnify* tool
- Failed records automatically sent to back on graphs – ensures visibility of all passing records
- Clearer labeling of graph axes with advanced tree selections
- Added ability to label family envelopes, as for material 'bubbles'

Benefits:

- Greater interactivity with graphs and selection results
- Easier access to tools and supporting information (attribute notes, guidance bars, links)
- Clearer presentation of results
- Enhanced usability

Data Modules

MaterialUniverse data

8. **Material prices in the MaterialUniverse data modules** have been updated – 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 give 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

9. **Environmental Data**

- Revised and updated environmental data
- New *Heat of combustion (net)* and *Combustion CO2* attributes added for combustible materials
- End of life attributes (recycle, downcycle, combust for energy recovery and landfill) revised and updated
- New records, containing environmental data only, for *rechargeable batteries*, *liquid crystal displays*, *printed circuit board assemblies* and *handheld electronic devices* – used by eco audit tool
- Environmental data for processing revised and updated
- Attribute notes for environmental attributes revised

Benefits:

- More extensive coverage of eco properties for reference and materials selection exercises
- Provides data for the Eco Audit Tool (available with the Eco Selector)

10. Updated tree structure and metal naming convention

- Revised naming of material families: *'Ceramics and glasses'* folder subdivided into *'non-technical ceramics'* and *'glasses'* folders
- Tree hierarchy for foams revised - now categorized by material type rather than density
- New metal naming convention used. Names are more descriptive, including information such as processing method, heat treatments, and major alloying elements. Leads to metals being grouped by alloy type in search and selection results

Benefits:

- Simplifies browsing, searching and identification of materials in results list
- Enhanced usability

11. New attributes for copper and steel alloys

- New attributes for 'similar grades' and 'standards' for copper alloys. Standards organizations extended from EN (European) to include GOST (Russian), JIS (Japanese) and GB (Chinese) – Data available in the *All attributes* and *metals* layouts
- New *Carbon equivalency* attribute added for steels - available in the '*All attributes'*, '*metals'* and '*stainless steel'* layouts. Indicates the weldability of the material

Benefits:

- Simplifies identification of similar grades and standards for copper alloys
- Carbon equivalency identifies weldability of steel grades.

12. New records for hybrid and coated materials, commonly used in architecture, building and construction:

- Laminated glass
- Low-e glass
- Galvanized steel
- Terne coated stainless steel
- Terne coated steel
- Lead coated copper
- Aluminum-polyethylene sandwich

Benefits:

- Greater coverage of architectural materials

13. New rating scale for durability attributes

- New four point scale introduced for durability attributes: Unacceptable, Limited use, Acceptable, Excellent
- Rating scale for *UV radiation (sunlight)* updated to: Poor, Fair, Good, Excellent

– Updated durability attributes notes, explains durability scale and influence of protective coatings on rating.

Benefits:

- Greater clarity on the meaning of durability ratings
- Simplifies setting of durability constraints in selection projects

14. **New and revised polymer data** in the MaterialUniverse.

– New *'Polymer type full name'* attribute
– Revised and updated tradenames and *typical uses* information
– Minor restructuring of polymer folder structure in the MaterialUniverse
    o Polyphthalamide (PPA) listed under PA(Polyamide/Nylon)
    o Copolyesters, Tritan now listed under one folder

Benefits:

- Simplified browsing, searching and selection of polymers

15. **New polymer records**, especially relevant to medical devices and CES Medical Selector Edition. 38 new grades and 6 new polymer classes (COP, PA-MXD6, PC+PPC, PEI+PCE, PEEK-modified, PEKK) added. New grades include:

– COP (general purpose)
– COP (medium heat)
– COP (high heat)
– COP (high hardness)
– COP (impact grade)
– PC/PPC (Unfilled)
– Polyarylamide (20% glass fiber, wear grade)
– Polyarylamide (30% carbon fiber)
– Polyarylamide (30% glass fiber)
– Polyarylamide (50% glass fiber)
– Polyarylamide (50% glass fiber, flame retarded)
– Polyarylamide (50% glass fiber, toughened)
– Polyarylamide (60% glass fiber)
– Polyarylamide (mineral filled)
– PEEK-modified (unfilled)
– PEEK-modified (30% glass fiber)
– PEEK-modified (40% glass fiber)
– PEEK-modified (30% carbon fiber)
– PEEK-modified (wear grade)
– PEEK-modified (wear grade, high load)
– PEI/PCE (general purpose)
– PEI/PCE (impact grade)
– PEI/PCE (20% glass fiber)
– PEI/PCE (20% glass fiber, impact grade)
– PEI/PCE (30% glass fiber)
– PEI/PCE (30% glass fiber, impact grade)
– PEI/PCE (50% glass fiber and mineral)
– PEKK (unfilled, amorphous)
– PEKK (unfilled, semi-crystalline)

- PEKK (30% glass fiber)
- PEKK (40% glass fiber)
- PEKK (30% carbon fiber)
- PEKK (40% carbon fiber)
- Copolyester (Tritan-type)
- PVC (semi-rigid, molding and extrusion)
- Silicone (VMQ, heat cured, low hardness)
- TPU (ether, aromatic, Shore D75)
- TPU (ether, aromatic, Shore A70)

Benefits:

- Comprehensive coverage of medical plastics and elastomers

CES Polymer Selector

16. **Updated CAMPUS data module. -** The CAMPUS ® Plastics data module has been updated with the latest CAMPUS ISO comparable standards information.

    - New Information on approx. 5,800 resins from 21 leading vendors

17. **Updated IDES Plastics data module** – the Granta IDES Plastics database has been updated with the latest information. Around 10% increase in number of grades and update to manufacturer details to account for mergers and acquisitions in polymer manufacturing

    - Approx. 77,000 datasheets for specific resin grades
    - Approx. 725 suppliers worldwide
    - Approx. 61,900 ASTM and 30,600 ISO datasheets
    - Hyperlinks to ASTM datasheets on IDES website

Benefits:

- Provides access to the latest CAMPUS and IDES data

CES Aero Selector

18. **MMPDS updated to version MMPDS-04:** the MMPDS data module has been updated to version MMPDS-04 CN1 and includes the latest data and the following additional features:

    - Five new materials: Ferrium S53 high alloy steel, 2050, 6156 and 7056 aluminum alloys and Toughmet 3 copper alloy
    - Updates to design and graphical data

Benefits:

- Access to the latest MMPDS-04 (Change Note 1) data
- Access to data for a wider range of materials

Feedback

The expert staff at Granta Design can provide advice on database design issues, and can provide a consulting service to help with major database development projects. Granta Design would welcome your feedback on any improvements you would like to see in the CES system, its data or documentation.

Please, send your ideas by using the ‘Feature Request’ button on the main toolbar.

Alternatively, email: support@grantadesign.com