



GRANTA SELECTOR

# Release Notes

## 2021 R2

### **/ Easily incorporate materials selection and simulation with Ansys >>**

Export key materials performance data into [Ansys Discovery](#), enabling early-stage design, simulation and exploration of new component designs. Our [Ansys Workbench exporter](#) has also been updated to support improved curve data export and compatibility with *LS-Dyna*.

### **/ The latest data for aerospace and beyond >>**

Access the latest data covering technical, environmental and economic materials performance. Upgrades include significant updates to core data, particularly [environmental performance](#) and the [Advanced Materials – Aero](#) and [Advanced Materials – Medical](#) data bundles.

### **/ Improved battery module selection >>**

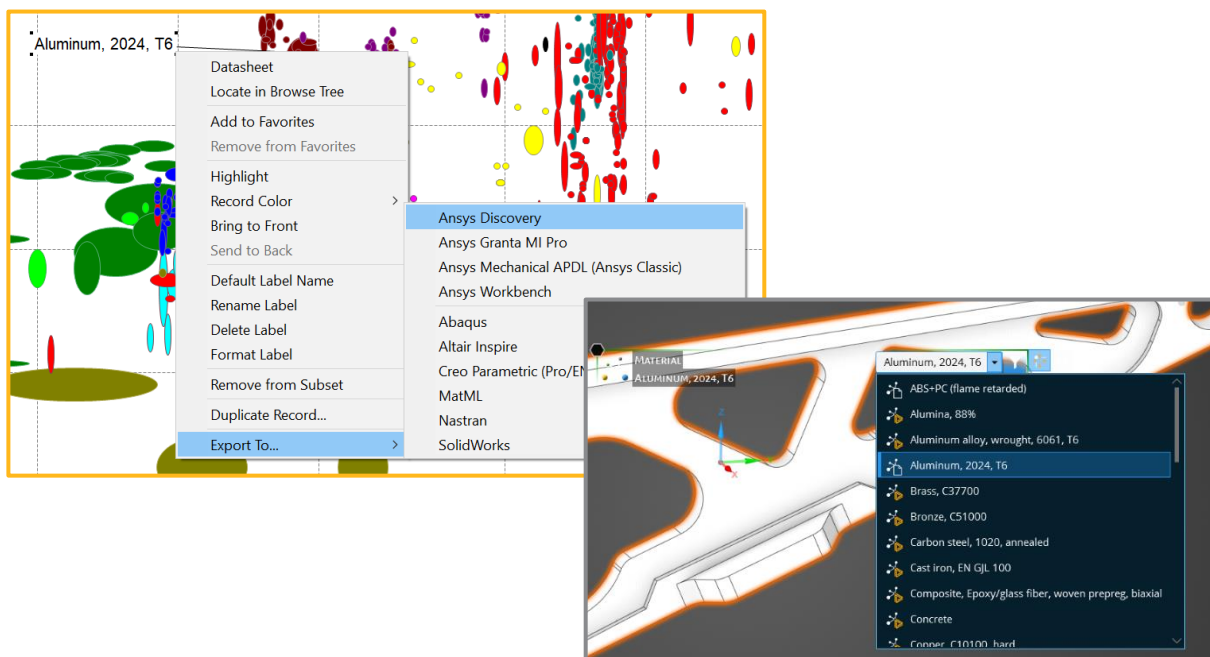
More [attributes are now available for selection](#) for Modules and Packs created using the Battery Designer tool, and [more Design Notes have been added](#) to the accompanying Battery Cells data table.

# 1 Detailed Descriptions

## 1.1 Incorporate materials into your simulations with Ansys

### 1.1.1 New exporter for *Ansys Discovery*

*Ansys Granta Selector* users can now export key materials properties into *Ansys Discovery*. Exported materials cards can easily be added to your Local and Shared libraries, and are then accessible via *Discovery's* list of available materials for all simulation projects.

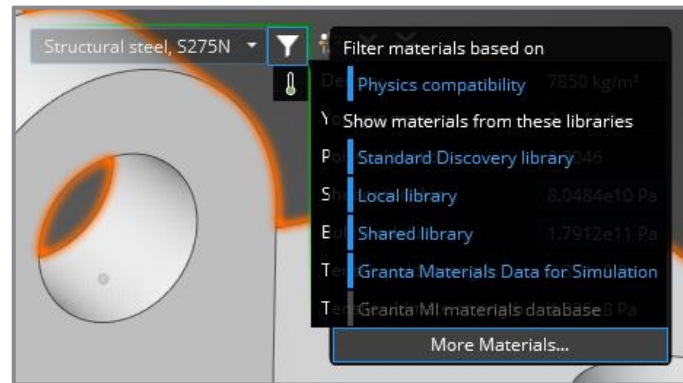


#### Benefits:

- Intelligently choose suitable materials for an application based on technical, environmental and economic requirements and explore the performance of these materials in *Ansys Discovery*
- Access to key performance data for all *MaterialUniverse* records in *Ansys Discovery*

### 1.1.2 Launch *Granta Selector* from within *Ansys Discovery*

Facilitate a natural workflow for materials selection within design projects and launch *Granta Selector* from within *Ansys Discovery* using the **More Materials** button.

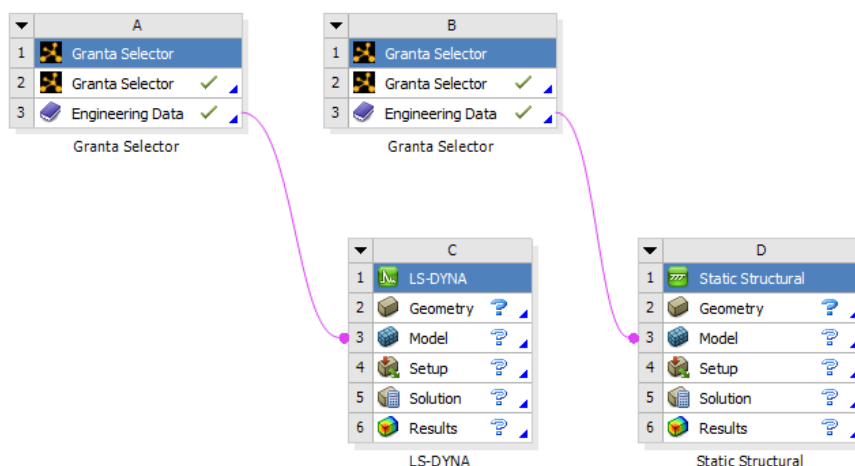


#### Benefits:

- User-friendly link between *Ansys Discovery* and *Ansys Granta Selector* allows you to easily carry out materials selection based on early-stage simulation results, or try out new materials.

### 1.1.3 Improved data export for *Ansys Workbench* and *LS-Dyna*

*Granta Selector* can now export relevant simulation-ready data directly into the *LS-Dyna* Engineering Data component in *Ansys Workbench*. There are also minor updates to export of temperature-dependent curve data from attributes that contain multiple temperature-dependent curves.



#### Benefits:

- Select, compare and export the right data to support simulation through *Ansys Workbench* – connect to *Ansys Mechanical*, *LS-Dyna* and more.

## 1.2 Improvements to the Battery Designer tool

### 1.2.1 More Module and Pack attributes available in Selection Stages

The Battery Designer tool and the datasheets it produces have been enhanced. Synthesized multi-cell battery modules and packs have several calculated attributes that are now fully selectable, for easier comparison between different module and/or pack designs. These include, but are not limited to, estimated *Discharge Time*, *Max internal temperature reached* and *Actual C-rate*.

#### Battery Module/Pack properties

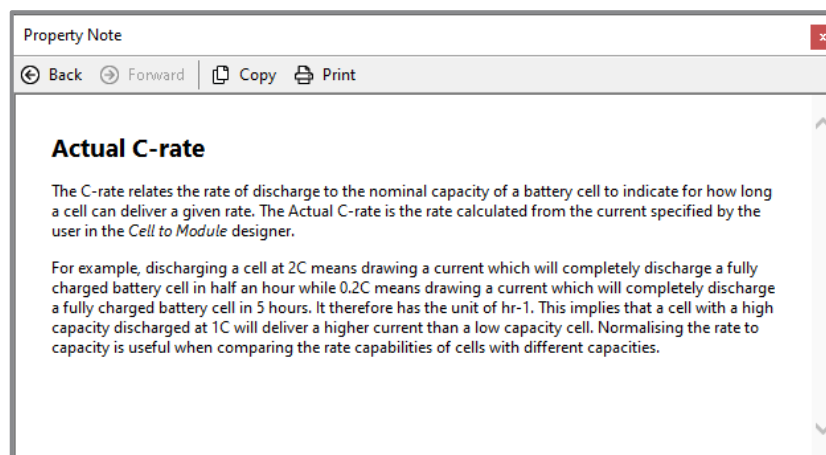
Actual C-Rate	0.53	C
Actual discharge current	7	A
Discharge Time	95.2	min
Max discharge power	242	W
Max internal temperature reached	40	°C
Percentage of max rate	22	%

#### Benefits:

- Assess the link between battery module design and performance
- Rapidly iterate multiple design configurations
- Enhanced equivalent comparison between different cells and module or pack designs

### 1.2.2 Design Notes for all attributes in the *Battery Cells* table

New Design Notes have been added to the *Battery Cells* table to cover all attributes, for quick reference and understanding of the meaning of each attribute.



#### Benefits:

- Improved documentation and understanding of relevant attributes for battery cells, modules and packs

## 1.3 Latest updates to core and specialist data

### 1.3.1 MaterialUniverse

*MaterialUniverse is part of the Basic Materials bundle (always available with Ansys Granta Selector)*

In addition to new Design Notes in the *Battery Cells* table, the following improvements and updates have been made for this release:

- Extensive updates of embodied energy and carbon footprint data, incorporating the latest values from version 3.7.1 of *ecoinvent*. The updated attributes are:
  - *Embodied energy, primary production (virgin grade)*
  - *CO2 footprint, primary production (virgin grade)*
  - *Embodied energy, primary production (typical grade)*
  - *CO2 footprint, primary production (typical grade)*
- True plastic stress-strain added to 25 polymer records, providing greater support for non-linear simulation of polymers. Includes several grades of ABS, PA, PC, PE HD, PEEK, POM and TPU.
- Widespread review of data has resulted in several minor updates:
  - Several high-temperature true plastic stress-strain curves have been updated, and high temperature curves for the following records have been removed:
    - *Aluminum alloy, wrought, 2014, T6 (149°C, 232°C and 316°C)*
    - *Aluminum alloy, wrought, 2024, T3 (232°C, 316°C and 427°C)*
    - *Aluminum alloy, wrought, 2024, T6 (232°C)*
  - Updated thermal expansion coefficient values
  - True plastic stress-strain curves for *Stainless steel, austenitic, AISI 316, annealed* now extend until elongation at maximum strength only (at all temperatures)
  - True plastic stress-strain curves removed for *Nickel alloy, Haynes C263* and *Brass, C46400*

#### Benefits:

- Access the latest version of this unique dataset that covers technical, economic, and environmental properties for over 4,000 materials.
- Up to date environmental data for all materials enabling better selection for sustainability and use with Eco Audit functionality.

### 1.3.2 MMPDS-15

*MMPDS-15 is part of the Advanced Materials – Metals bundle*

This release of the *Advanced Materials – Metals* data bundle incorporates the latest version of the *Metallic Materials Properties Development and Standardization (MMPDS) Handbook*, including:

- Eight new 2043 and 42 new 7075 aluminum alloy records
- Removal of 6151 aluminum alloy (1 record) and AM 355 stainless steel SCT850 temper (2 records)
- All the latest changes and updates to the *MMPDS* dataset, including new or updated thermal data, strength and moduli.

**Benefits:**

- Access to the latest version of *MMPDS*, providing certified materials data for aircraft and aerospace vehicle applications.

### 1.3.3 ASM Medical Materials

*ASM Medical Materials is part of the Advanced Materials – Medical data bundle, an online subscription accessible through links in relevant MaterialUniverse records*

*ASM Medical Materials* brings to your desktop a comprehensive and authoritative set of mechanical, physical, biological response and drug compatibility properties for the materials and coatings used in medical devices. The latest update has:

- 497 new records added for devices approved according to FDA Emergency Use Authorization (EUA) directives, linked to EUA records providing more details about emergency guidance issued by the FDA
- New Emergency Guidance folder, helping customers to identify guidance and publications related to tackling the COVID-19 pandemic from the US Food and Drug Administration (FDA), UK Medicines and Healthcare products Regulatory Agency (MHRA), Australian Government: Therapeutic Goods Administration (TGA) and Health Canada
- Updates to the database with the latest FDA approved devices (510(k) and PMA) with links to associated materials, coatings and drugs. Includes new producers, recalls and guidance documents.

**Benefits:**

- Access the latest information on FDA-approved medical devices, including links to the materials, coatings and drugs used in their construction.

## 2 Feedback

Ansys welcomes your feedback on any improvements you would like to see in the *Granta Selector* system, its data, or documentation.

Please [send us your suggestions at ansys.com/materials](https://ansys.com/materials) or email [support@grantadesign.com](mailto:support@grantadesign.com).

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