GRANTA EDUPACK

Release Notes

2023 R1

/ Updated, reorganized and improved data ››

Include Medical Devices in your Bioengineering material selection projects, explore updated social and economic data in Nations of the World, and benefit from the latest materials data - including price updates - in MaterialUniverse™.

/ Eco Audit – process, transport and use enhancements ››

Carry out enhanced environmental assessment of products by including environmental data in custom, component-wide, joining and finishing processes. Use expanded and updated information on transportation and country of use to let your students fully explore the environmental impact of transport and product usage.

/ Teach in Portuguese ››

A new translation of the Level 1 and 2 databases, Science Notes, software interface, and more, now enables teaching of introductory courses in Portuguese.

1 What's new?

1.1 Updated, expanded and simulation-ready data

1.1.1 MaterialUniverse™

The core of all databases in EduPack

Updates this release focus on improved coverage of metals and coating processes.

- **10 new records** added, including:
  - Low alloy steel, 24CrMo13-6, quenched & tempered
  - Low alloy steel, 40CrMoV13-9, quenched & tempered
  - Low alloy steel, 16Mo3, normalized
  - Low alloy steel, 10CrMo9-10, normalized & tempered
  - Low alloy steel, 13CrMo4-5, normalized & tempered
  - Low alloy steel, AISI 41L40, annealed
  - Low alloy steel, AISI 5115, annealed
  - Low alloy steel, AISI 5120, annealed
  - Low alloy steel, AISI 52100, annealed
  - Low alloy steel, AISI 8620H, hardened and tempered

- **3 new process records** on thermal spraying surface treatments have been added to ProcessUniverse.

- **New prices** are available for all 4,000+ materials in MaterialUniverse™, generated using Ansys's price model, based on data from the world commodity markets.

- **Risk indices** for critical materials have been updated to reflect the latest changes to the EU and US Critical Materials lists.

- **Export capability** has been removed from all MaterialUniverse™ Level 1 and Level 2 databases. This reflects the growing requirements of the software we export to – e.g. Level 1 databases do not contain all of the attributes required to run a structural simulation. Export is now only available from Level 3 databases, which contain a full range of mechanical, thermal and electrical properties, plus curve data in many records, to support simulation.

1.1.2 Bioengineering Databases now include Medical Devices

Level 2 and Level 3 Bioengineering databases

At this release, the Medical Devices (and FDA Approved Devices) tables which were previously in their own 'Medical Devices' database, have been merged into the Bioengineering Level 2 and Bioengineering Level 3 databases. The Medical Devices standalone database no longer exists.

The General Surgery subset of the Medical Devices tables has been augmented with 10 new generic device records, whilst 20 new FDA approved records have also been added meaning these tables now include:

- 62 generic Medical Device records
    - **10 new records** covering breast implants, nose implants, surgical mesh, forceps, scalpel blade, surgical tray, and endotracheal tube.
- 117 FDA Approved Example records
    - **20 new records** covering approved examples of the same
- Links to Level 3 materials where specific material grades are known.

1.1.3 Sustainability databases

Nations of the World

Level 2 and Level 3 Sustainability databases

A significant update has been made focusing on attributes which are most subject to change, as well as a smaller update to the countries included.

- 34 attributes updated across all nations with the latest available data, including:
    - Social attributes such as corruption index and literacy rate
    - Economic attributes such as GDP, unemployment rate and health expenditure
- 2 new nation records added:
    - South Sudan
    - Cook Islands
- Recent changes to internationally recognised country names reflected:
    - North Macedonia
    - Eswatini
    - Czechia
    - Cabo Verde

Power Systems

Level 3 Sustainability database only

- Table restructure: 'Power System – Carbon' and 'Power System – Nuclear' have been merged into a single table; 'Power Systems – Generation'.
- 6 new attributes added.
- 14 new references added and linked from relevant records.
- New links added to the Elements and Battery Cells tables.

- Records merged where redundancy was identified:
    - Hydropower dam records combined
    - Geothermal power records combined

1.1.4 Introduction of Portuguese as a supported language

Nível 1 and Nível 2 databases, user interface and Science Notes

EduPack now supports teaching in Portuguese:

- Standard Level 1 and 2 databases, plus Science Notes, have been translated into Portuguese.
- A Portuguese user interface is now available.

This translation has been carried out in collaboration with Júlio César Dutra and Jacqueline Matsuda Augustini, at Centro Universitário da FEI, in Brazil.

1.1.5 Global Polymers

Included in the Level 3 Polymer database

Global Polymers Plastics

- The Plastics data table has been updated with the latest records and data from UL Prospector. This includes several new polymer datasheets and updates to existing datasheets, bringing the total number of grades to over 105,800.
- New data has been included from Producers including:
    - Sabic:
        - LNP™ LUBRICOMP™ Compound.
        - Updated data in HU1000, PW1000, 1000F, 1000R, 1000P, 1000P100, 1000P200, HU1010, 1010F, 1010R, 1010M, 1010TC, AUT200M, AUT200AR, 1010P, 1010P200, HU2300, PW2300, 2300F and 2300R.
    - Kuraray:
        - Genestar™ G1300A-M41 | PA9T has been renamed to Genestar™ G1300A | PA9T.
- New non-linear data has been included for certain datasheets for the following attributes:
    - Specific Volume vs. Temperature
    - Viscosity vs. Shear Rate
    - Tensile Modulus vs. Temperature
    - Tensile Stress vs. Strain
    - True Stress vs. Strain
    - Secant Modulus vs. Strain
    - Shear Modulus vs. Temperature, Dynamic
    - Shear Stress vs. Shear Rate
    - Creep Modulus vs. Time
    - Tensile Fatigue

- Isothermal Stress vs. Strain (TPE)

1.1.6 MMPDS-17

Included in the Level 3 Aerospace database

The latest version of the Metallic Materials Properties Development & Standardization (MMPDS) Handbook. MMPDS-17 includes:

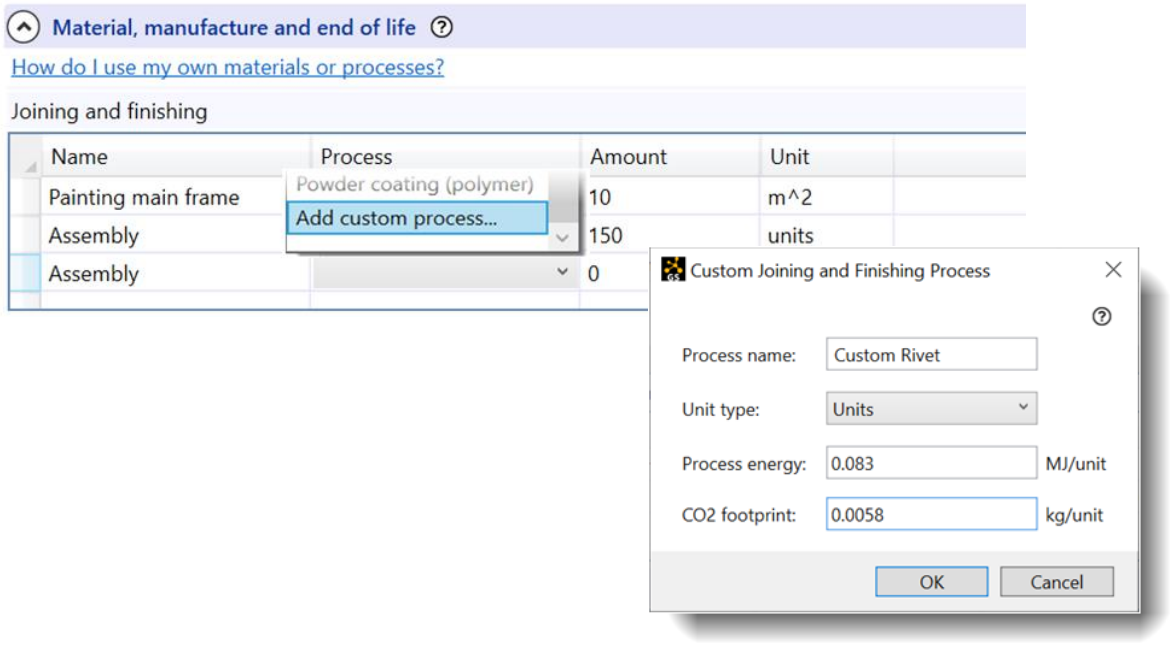
- New data for 2196, 7050, 7055 and 7160 aluminum alloys.
- Changes and clarifications of Ramberg-Osgood data for many stress-strain figures.
- All the latest changes and updates to the MMPDS dataset, including new/updated thermal data, strength and moduli.

1.2 Process, transport and use enhancements in Eco Audit

1.2.1 Add custom Joining and Finishing processes to Eco Audit projects

Available in the Enhanced Eco Audit in Advanced Level 3 databases

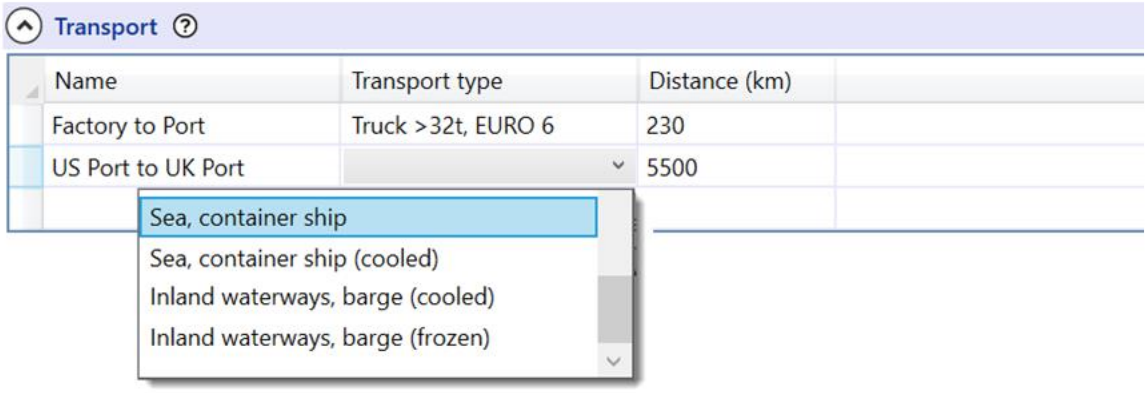
You can now add custom joining and finishing processes to Eco Audit - for example, in-house processes - for more accurate estimates of energy usage and CO_2 footprint. Custom processes are added to the Eco Audit product itself and are applied to the entire product, independent of the materials present.



1.2.2 Transport methods

Available in Eco Audit in all databases

The number of available transport methods in the Transport section of Eco Audit has been significantly expanded. Over 50 options are now available, with energy consumption and CO_2 footprint data available for each. Transport methods include road, rail, sea and air and cover all standard classes of vehicles, including options for both refrigerated and non-refrigerated vehicles.



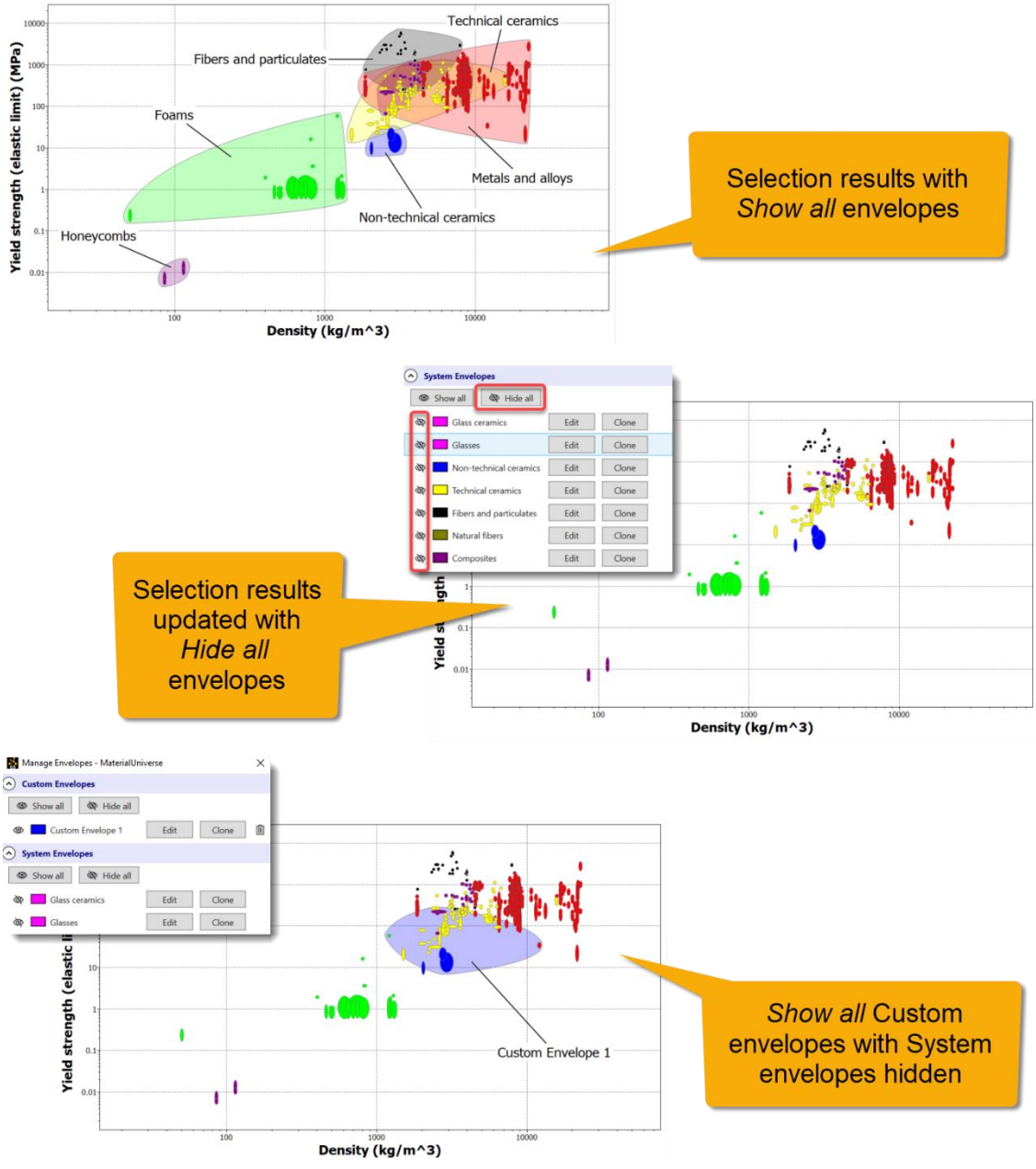
1.2.3 Country of Use

Available in Eco Audit in all databases

The list of countries in the Country of use section has been expanded. The environmental impact values for product use associated with each country have been assessed and updated where appropriate, based on current environmental data.

1.3 Improved custom material family envelopes in Chart Stages

The user experience for managing material family envelopes has been enhanced, permitting the user to hide or show all envelopes, as well as improving the interface for creating and deleting envelopes.



2 Feedback

We welcome 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 or email granta-support@ansys.com.

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