JMatPro
PRACTICAL SOFTWARE FOR MATERIALS PROPERTIES

API VERSION 10.0.5 – May 2026
API VERSION 10 – January 2026

JMatPro® version 10.0.5, May 2026

- Improved robustness of backtracking procedure in Scheil-Gulliver calculations to handle steps where the calculation of phases fails to converge.

JMatPro® version 10, January 2026

- Extended back diffusion calculations in the Solver and Solidification modules to consider user-defined cooling profiles.
- Extended the calculation of room-temperature matrix mechanical properties in Coldfire for magnesium and copper alloys.
- Extended Mechanical module for cast magnesium alloys, including the calculation of room-temperature and high-temperature strength, as well as flow stress curves.
- Extended Mechanical module for copper alloys, including the calculation of high-temperature strength and flow stress curves.
- Extended high-temperature strength and flow stress calculations in the Mechanical module for titanium alloys in the tempered condition.
- Extended the calculation of tempered hardness to consider general steels of quenched microstructure.
- Added time to the output of back diffusion calculations in the Solver and Solidification modules.
- Added the option of toggling phase boundaries search in Solidification calculations using the quench from equilibrium model, via the Solver function jmpSetPhaseBoundariesSearch().
- Added function to define the casting cooling rate used in Mechanical calculations for cast aluminium and magnesium alloys.
- Improved robustness of Scheil-Gulliver calculations with and without back diffusion.
- Improved Solidification and Cooling calculations for general steels and titanium alloys.
- Improved high-temperature strength calculations for aluminium alloys.
- Updated the thermodynamic and properties databases to match those included in JMatPro v16.0.
- Added Ta and B to stainless steels.
- Added Co and S to copper alloys.
- Added BN, M3B2, MB2_C32, CR2B, FE2B, and FE3B phases to stainless steel thermodynamic database.
- Added CO_HCP, CO_FCC, and CU2S phases to Cu thermodynamic database.
- Adjusted physical properties databases.
- Fixed possible failure in Cooling calculations when setting multiple constant

cooling rates.
- Fixed possible issue in Cooling calculations for general steels with user-defined cooling profiles.
- Fixed possible issue in Cooling calculations for fully martensitic titanium alloys.
- Fixed possible issue in the high-temperature strength of tempered general steels with lean compositions.
- Fixed possible issues in strength calculations for aluminium alloys.
- Fixed possible failure in creep calculations for nickel alloys and addressed inconsistency issues with rupture calculations.
- Fixed possible failure in Heat Treatment calculations for nickel and nickel-iron based superalloys.
- Fixed small inconsistencies in TTT calculations for general steels.
- Fixed small renormalisation issues for titanium and copper alloys when secondary phases are present.