

JMatPro® capabilities			Al alloys	Mg alloys	Cast irons	General steels	Stainless steels	Ni alloys	Co alloys	Ti alloys	Zr alloys	Solier alloys	Copper alloys
Phases	Temperature/Concentration stepping	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Isopleth	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Metastable phases	✓	✓										
Physical properties	Standard physical properties*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Stacking fault energy				✓	✓	✓	✓					
	Gamma/Gamma' mismatch							✓					
	Magnetic permeability					✓							
	Phases and physical properties	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Solidification	Back diffusion / Secondary dendrite arm spacing	✓	✓		✓	✓	✓	✓	✓	✓	✓		
	Cooling curve	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
	Cast strength	✓	✓	✓	✓								
	Homogenisation	✓	✓		✓	✓	✓	✓	✓	✓	✓		
	O F H T5 T6 heat treatment strength	✓											
Mechanical properties**	Room temp. strength/hardness	✓			✓	✓	✓				✓		
	High temp. strength/hardness	✓	✓(cast)		✓	✓	✓	✓					✓
	Flow stress curves & rupture strength	✓	✓		✓	✓	✓	✓	✓				✓
	Creep and rupture life					✓	✓	✓	✓				
	Jominy hardenability / Grossmann critical Ø				✓								
	Cast Strength	✓	✓	✓	✓								
	Fatigue tool				✓	✓	✓	✓	✓	✓	✓		
	Forming limit diagram	✓	✓		✓	✓	✓	✓	✓	✓	✓		
	Processing map	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓
	Fracture toughness	✓			✓						✓		
	TTT/CCT diagram	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	TTA diagram					✓							
	Re-austenisation phases and properties					✓							
Phase transformations	Plasticity coefficients					✓							
	Isothermal transformations	✓	✓		✓	✓	✓	✓	✓	✓	✓		
	Energy changes				✓	✓	✓	✓			✓		
	Cooling transformations					✓					✓	✓	
	Martensite formation					✓	✓				✓		
	Stress induced martensite					✓	✓						
	Quenching and welding data					✓							
	Simultaneous carbide precipitation and strength					✓	✓						
	Temp.-time-precipitation of M(C,N), MN, AlN					✓	✓						
	Tempering hardness and properties					✓							
	Gamma'/Gamma" coarsening							✓					
	Hot Rolling grain size/recrystallization/rolling force					✓							
	Evolution of microstructure & strength							✓					
Data export	Forming simulation data	✓	✓		✓	✓	✓	✓	✓	✓			✓
	Welding and heat treatment simulation data					✓							
	Solidification simulation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other	Carburisation					✓	✓						
	C diffusion in weld					✓							
	Dissimilar metal welds	✓						✓		✓			
	Pitting resistance						✓						

* Specific heat - enthalpy - density - molar volume - thermal expansion coefficient - thermal conductivity - electrical conductivity/resistivity - surface tension - liquid viscosity/diffusivity- Poisson's ratio- Young's/shear/bulk modulus. These properties can be calculated during/after heat treatment or during solidification for the whole temperature range including in the liquid phase. When relevant, properties are given for each phase. ** Proof stress, tensile stress and hardness are calculated at any temperature up to the melting point. *** Data export is done both to specific formats used by third-party simulation software and to neutral ASCII files.