

Material Title: DSM 1.2.13

Teamcenter Reference ID:								
Mat-001450/01								
Material Short Name:								
1.2311								
Material Group:								
Steel DSM 1.2.13								
Characteristics:								
Machinable, Suitable For Polishing, Hot Working Steel, High Dimensional Stability, Very Good Suitability For Scarring, Excellent Spark Erosion Behaviour								
Applications:								
Linings, Pressure Casting Dies, Internal Hig-Pressure Tools, Plastic Moulds, Frames For Plastic Moulds, Recipients For Extrusion Presses, Forging Dies, Extrusion Press Tools, Tool Steel								
Chemical Composition:								
Si_min [%]	Si_max [%]	Fe_min [%]	Fe_max [%]	Mn_min [%]	Mn_max [%]	C_min [%]	C_max [%]	P_min [%]
0.2	0.4	95	95	1.3	1.6	0.35	0.45	0
P_max [%]	S_min [%]	S_max [%]	Cr_min [%]	Cr_max [%]	Mo_min [%]	Mo_max [%]		
0.35	0	0.35	1.8	2.1	0.15	0.25		
Properties:								
Typical Density (g/cm3)		Typical Young's modulus (MPa)		Yield Stress YS Min (MPa)		Tensile Strength TS Min (MPa)		Min Elongation (%)
7.80		213000						
Shear Modulus (GPa)		Poissons Ratio		Typical Specific Heat Capacity (J/kg°C)		Typical Thermal Conductivity (W/(mK))		Typical Thermal Expansion (10 ⁻⁶ /K)
83000		0.29		449		48.00		12.90
Material Safety:								
No Hazardous Element Declared								
No Hazardous Element Declared								
Approved Standards:								
Material Number	Country	Material Name	Product				Standard's Name	Edition
1.2311	DE	40CrMnMo7	Tool Steel				DIN EN ISO 4957	2018-11
1.2311	US	P20	Tool Steel				ASTM A681	2022-08
1.2311	CN	3Cr2Mo	Tool Steel				GB/T 1299	2014-12
1.2311	JP	SCM4	Tool Steel				JIS G4404	2022-05
1.2311	ISO	40CrMnMo7	Tool Steel				ISO 683-1	2016

Issue	01	02	03	04	05	06	07	08
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