

AVAILABLE STEEL MATERIALS

Steel Grade	MEK4	Supplier	AUBERT and DUVAL		
Steel Type	Plastic Mould Steel	Updating Price	<input type="button" value="Check"/>		
Standard and Certificate	DIN 1.8523 (High Wear Resistance Mould Steel)				
State as Delivered and Hardness	Prehardened to HB 370 - 400				
Typical Chemical Composition	Component	C	Cr	Mo	V
	Percent	0.4	3.0	1.0	0.2
Steel Properties	Both high hardness and high toughness, good resistance to wear. Nitriding is an acceptable surface treatment, nitriding produces a hard, abrasion resistant surface up to a hardness of 800 HV.				
Steel Applications	Plastics moulds which can be demanded on high hardness, high toughness and high wear resistance. It can improve the life of mould by nitriding.				
Austenitizing Temperature		Quenching Method			
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C
	Prehardened Condition				

Steel Grade	Moldmax HH (MM40)	Supplier	BRUSH WELLMAN		
Steel Type	Non-Ferrous Metal	Updating Price	<input type="button" value="Check"/>		
Standard and Certificate	-				
State as Delivered and Hardness	Prehardened to HRC 36 - 42				
Typical Chemical Composition	Component	Co + Ni			
	Percent	0.25			
Steel Properties	High strength beryllium copper alloy, very high thermal conductivity, shorten moulding cycle effectively.				
Steel Applications	Best suitable for mould core and insert which require rapid cooling.				
Austenitizing Temperature	-	Quenching Method	-		
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C
	-	-	-	-	-

Steel Grade	NAK55	Supplier	DAIDO			
Steel Type	Plastic Mould Steel	Updating Price	Check			
Standard and Certificate	P21+S Modified, ESR					
State as Delivered and Hardness	Prehardened to HB 370 - 400					
Typical Chemical Composition	Component	C	Si	Ni	Mn	Mo
	Percent	0.15	0.3	3.0	1.5	0.3
Steel Properties	Prehardened type with high hardness, good machinability and weldability.					
Steel Applications	High precision plastic moulds and rubber moulds.					
Austenitizing Temperature			Quenching Method			
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C	
Prehardened Condition						

Steel Grade	NAK80	Supplier	DAIDO		
Steel Type	Plastic Mould Steel	Updating Price	Check		
Standard and Certificate	P21 Modified, VAR				
State as Delivered and Hardness	Prehardened to HB 370 - 400				
Typical Chemical Composition	Improved composition from NAK55				
Steel Properties	Prehardened type with high hardness, good polishability, good EDM machining and weldability.				
Steel Applications	Moulds require high wear resistance and excellent surface finishing, good EDM ability.				
Austenitizing Temperature			Quenching Method		
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C
Prehardened Condition					

Steel Grade	ORVAR 8407	Supplier	ASSAB (UDDEHOLM)				
Steel Type	Hot Working Steel	Updating Price	Check				
Standard and Certificate	H13, MICRODIZED+ESR						
State as Delivered and Hardness	Annealed to HB 185(approx.)						
Typical Chemical Composition	Component	C	Si	Cr	Mn	Mo	V
	Percent	0.38	1.0	5.3	0.4	1.3	0.9
Steel Properties	Hot working tool steel with high toughness and good high temperature strength.						
Steel Applications	Die casting, extrusion, cold hobbing, mould for PA, POM, PS, PE, EP plastics.						
Austenitizing Temperature	1020	Quenching Method	Oil / Air				
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C		
	-	52	52	-			

Steel Grade	P20 HH	Supplier	A FINKL and SONS CO.				
Steel Type	Plastic Mould Steel	Updating Price	Check				
Standard and Certificate	P20 Modified						
State as Delivered and Hardness	Prehardened HB 330 - 370						
Typical Chemical Composition	Component	C	Si	Cr	Ni	Mn	Mo
	Percent	0.33	0.3	1.85	0.6	0.9	0.5
Steel Properties	The chemical composition has been carefully formulated, forged with a minimum of 5-to-1 reduction, wide-die techniques, superior integrating performance.						
Steel Applications	Recommended for plastic moulds that require the polishability of P20 with higher wear resistance and higher hardness, suitable for PA, POM, PS, PE, PP, ABS ... etc. polymer.						
Austenitizing Temperature		Quenching Method					
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C		
Prehardened Condition							

Steel Grade	P20 LQ	Supplier	A FINKL and SONS CO.				
Steel Type	Plastic Mould Steel	Updating Price	<input type="button" value="Check"/>				
Standard and Certificate	P20 (Lens Quality)						
State as Delivered and Hardness	Prehardened to HB 330 - 370						
Typical Chemical Composition	Component	C	Si	Cr	Ni	Mn	Mo
	Percent	0.33	0.45	1.80	0.45	0.8	0.5
Steel Properties	Produced by the patented Double Vacuum Process(VAD+VAR), the optimum combination of cleanliness, refined structure, strength and isotropic properties. It is favorable to polish.						
Steel Applications	Best suitable for plastics and other materials requiring moulding exhibiting excellent polishability such as lenses and high quality optical moulds and dies, but not suitable for acid plastic.						
Austenitizing Temperature			Quenching Method				
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C		
	Prehardened Condition						

Steel Grade	POLMAX	Supplier	ASSAB(UDDE HOLM)				
Steel Type	Plastic Mould Steel	Updating Price	<input type="button" value="Check"/>				
Standard and Certificate	420(ESR+VAR Optical Grade)						
State as Delivered and Hardness	Annealed to HB 200						
Typical Chemical Composition	Component	C	Si	Cr	Mn	V	
	Percent	0.38	0.9	13.6	0.5	0.3	
Steel Properties							
Steel Applications	High corrosion resistance, especially suitable for high quality moulds for Lens, Optical Products, compact discs and medical applications.						
Austenitizing Temperature	1025	Quenching Method		oil / air			
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C		
	54	53	-	-			

Steel Grade	PORCERAX II PM-35	Supplier	SINTO				
Steel Type	Plastic Mould Steel	Updating Price	Check				
Standard and Certificate	Sintering Powder Metallurgical Tool Steel						
State as Delivered and Hardness	Prehardened to HV 350 - 400/400 - 450						
Typical Chemical Composition	Component	C	Si	Cr	Ni	Mn	Mo
	Percent	0.012	0.07	16.5	1.2	0.17	1.9
Steel Properties	High quality prehardened type permeable tool steel with high corrosion resistance, high machinability and EDM machinability (Supplied with 7 and 20µm holes)						
Steel Applications	Moulds for high quality plastic or diecasting parts with thin wall or intricate structure. Remedy for quality and productivity problems due to gas trapping during injection moulding.						
Austenitizing Temperature			Quenching Method				
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C		
	Prehardened Condition						

Steel Grade	PX5	Supplier	DAIDO				
Steel Type	Plastic Mould Steel	Updating Price	Check				
Standard and Certificate	P20 Modified						
State as Delivered and Hardness	Prehardened to HB 209-330						
Typical Chemical Composition	Patent Pending						
Steel Properties							
Steel Applications	Prehardened type, good machinability and weldability						
Austenitizing Temperature			Quenching Method				
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C		

Steel Grade	PX88	Supplier	DAIDO		
Steel Type	Plastic Mould Steel	Updating Price	<input type="button" value="Check"/>		
Standard and Certificate	P20 Modified				
State as Delivered and Hardness	Prehardened to HB 280 - 310				
Typical Chemical Composition	Patent pending				
Steel Properties	Good weldability, special alloying composition to reduce sensitivity due to weld crack.				
Steel Applications	Long production run plastic mould with good surface finishing.				
Austenitizing Temperature		Quenching Method			
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C
Prehardened Condition					

Steel Grade	RAMAX 168	Supplier	ASSAB(UDDEHOLM)		
Steel Type	Plastic Mould Steel	Updating Price	<input type="button" value="Check"/>		
Standard and Certificate	420 +S				
State as Delivered and Hardness	Prehardened to HB 330 - 360				
Typical Chemical Composition	Component	C	Si	Cr	Mn
	Percent	0.38	0.35	16.7	1.35
Steel Properties	Free machinability, excellent corrosion resistance.				
Steel Applications	Long life and high corrosion resistance mould base, also suitable for mould inserts and clamp requiring high machinability and corrosion resistance, but the surface finish is so so, for example rubber mould.				
Austenitizing Temperature		Quenching Method			
Tempering Temperature and Hardness Cross Reference	180°C	225°C	300°C	570°C	610°C
Prehardened Condition					

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