

MATERIAL TYPE <i>Tipo de Material</i>	TRADITIONAL MIM NAME <i>Denominación clásica</i>	STANDARD NAME ISO 22068:2012	STANDARD NAME ASTM B 883-10 MPIF 35-2007	CHEMICAL COMPOSITION <i>Composición Química</i>							MECHANICAL PROPERTIES (as sintered) <i>Propiedades mecánicas (Sinterizado)</i>			
				%C	%Ni	%Cr	%Mo	%Si	%Mn	OTHERS	Rm (N/mm2)	RO,2 (N/mm2)	E %	HARDNESS HB
LOW ALLOY STEELS <i>Aceros baja aleación</i> Iron-Nickel <i>Hierro-Níquel</i>	FN08(00) FN08	MIM-Fe8Ni-210 MIM-Fe8NiC-300 MIM-Fe8NiC-500 MIM-Fe8NiC-700H MIM-Fe8NiC-1100H	MIM-2700	<0,1 0,4-0,8 0,45/0,65	6,5-8,5 6,5-8,5 better carbon control MIMECRISA process		<0,5 <0,5			<1,0 <1,0	>380 >900	>210 >500	>20 >5	123 HV10 >280
	4605	MIM-4605-170 MIM-4605-1310H	MIM-4605 MIM-4605-HT	0,4-0,6	1,5-2,5		0,2-0,5	<1,0	<0,2	<1,0	>380	>170	>11	150 HV10
LOW ALLOY STEELS <i>Aceros baja aleación</i> Cr-Mo Alloys <i>Aleaciones Cr-Mo</i>	MIM-42CrMo4	MIM-4140-400 MIM-4140-600H MIM-4140-1200H	MIM-4140	0,35-0,5 0,3-0,5		0,9-1,2 0,8-1,2	0,15-0,3 0,2-0,3	<0,4 <0,6	<0,9 <1,0	<1,0	>700	>400	>3	210 HV10
	MIM-8740		8750	0,45-0,55	0,5-0,8	0,4-0,6	0,25-0,4	0,3-0,55	<0,1		>860	>530	>8	190-210 HV10
	MIM-4340	MIM-4340-500 MIM-4340-750H MIM-4340-1300H	4340	0,35-0,5	1,4-2	0,7-1,4	0,2-0,3	<0,4	<0,8		>700	>500	>7	200-250 HV10
	MIM-8620	21NiCrMo2	8620	0,18-0,23	0,4-0,7	0,4-0,6	0,15-0,25	<0,2	<0,2		>650	>400	>3	190-230 HV10
TOOL STEELS <i>Aceros herramienta</i>	MIM-100Cr6	MIM-52100	52100	0,85-1,05		1,35-1,65		<0,35	<0,45		>900	>500	>5	230-290 HV10
	MIM-M2	1. 3343	M2	0,78-1,05		3,75-4,5	4,5-5,5	0,2-0,45	0,15-0,4	%V 1,75-2,2 %W 5,5-6,75	>1200	>800	>1	(≥50 HRC)
SOFT MAGNETIC	4605(00) FN50 FeSi3 430L	MIM-Fe2Ni-20 MIM-Fe50Ni-200 MIM-Fe3Si-55 MIM-430-10	MIM-2200 MIM-Fe50%Ni MIM-Fe-3%Si MIM-430L	<0,1 <0,05 <0,05 <0,05	1,5-2,5 49-51			<1 <1 2,5-3,5 <1			290 455 530 415	125 160 390 240	40 30 24 25	(45 HRB) (50 HRB) (80 HRB) (65 HRB)
STAINLESS STEELS <i>Aceros inoxidables</i>														
Ferritic	MIM-430L	MIM-430-210 1. 4016 / X6Cr17	MIM-430L	<0,08		16-18		<1	<1.5		>350	>210	>20	115 HV10
Martensitic	MIM-420	MIM-420-850H 1. 4028 / X30Cr14/	420	0,15-0,4 0,25-0,45		12-14		<1	<1					
Precipitation Hardening	17-4PH	MIM-17-4PH-650 MIM-17-4PH-700H MIM-17-4PH-1000H	MIM-17-4 PH	<0,07	3-5	15-17,5		<1	<1	%Cu 3,0/5,0 %Nb 0,15/0,45	>800 (>900)	>650 (>700)	>3	(30-35 HRC)
Austenitic No Magnetic Fine Surface Simple geometry	316L 304	MIM-316L-140 MIM-304	MIM-316L	<0,03 <0,03	10-14 8-10,5	16-18,5 18-20	2-3	<1 <1	<2 <2	<1	>450 (>500) >630	>140 (>180) >170	>40 (>50) >60	120 HV10 130 HV10
HEAT RESISTANT <i>Refractario</i>	310N / 310NbC	1. 4841/ X15CrNiSi 25 21	310NbC	0,2/0,5	19/22	24/26		0,75/1,75	<1.5	%Nb 1,2/1,5 %N < 1	>550 >750	>200 >400	>35 >10	>150 HV10 >230 HV10
SUPERALLOYS <i>In development</i>	IN 713C	AMS 5391		0,08/020	base	12,0/14,0	3,8/5,2	<0,50	<0,25	%Fe<2,5 %Al 5,5/6,5 %Ti0,5/1,0 %Nb 1,8/2,9				>300 HV10

MATERIAL TYPE Tipo de Material	HEAT TREAT. Trat. Térmico	MECHANICAL PROPERTIES (Heat treated) Prop. Mecánicas (+Tratamiento Térmico)				DENSITY densidad (g/cm3)	MOLD FACTOR Factor de molde	MAGNETIC PROPERTIES Propiedades Magnéticas	
		Rm (N/mm2)	RO,2 (N/mm2)	E %	HV10 (HRC)			PERMEABILITY	IND.MAG. FIELD
LOW ALLOY STEELS Aceros baja aleación Iron-Nickel Hierro-Níquel	Case Harden Soft annealed Full annealed Full Harden Full Harden Full Harden	>380 Core >750 >550 (> 500) >800 (>1050) >1250 >1300	>500 >300 >700 (>900) >1100 >1100	>5 >6 (>15) >5 >3 >2	>600 Case <250 <180 (35 HRC) (40 HRC) (50 HRC) Max (50-55 HRC)	>7,55 (7,5)	1,216 1,216		
	Full harden	>1480	>1310	<1	48 HRC	>7,50	1,216		
LOW ALLOY STEELS Aceros baja aleación Cr-Mo Alloys Aleaciones Cr-Mo	Normalized Full Harden Full Harden Full Harden	>700 >750 >1300 >1380	>400 >600 >1200 > 1070	>3 (>6) >3 >2 >3	>210 (<180) (25 HRC) (50 HRC) (46 HRc)	>7,50	1,216		
	Normalized Full harden Full harden Full harden	>860 >1050 >1450 >1800	>530 >950 >1300 >1650	>8 >5 >3 >3	< 200 HV10 30HRC 40 HRC 45-50 HRC	> 7,50	1,216		
	Full Harden Full Harden	>900 >1600	>750 >1300	>3 >2	25 HRC 48 HRC	>7,50	1,216		
	Normalized Case harden	>650 >800 Core	>400	>3	190-230 HV10 >750 Case	>7,45	1,216		
	Harden Harden				(60-62 HRC) (>65 HRC)	>7,50 >7,95	1,216 1,167		
TOOL STEELS Aceros herramienta									
SOFT MAGNETIC						>7,5 >7,7 >7,45 >7,50	1,216 1,216 1,216 1,216	>2000 u >20000 u >6000 u >1000 u	B25 >14 kG B25 >13 kG B25 >14 kG B25 >11 kG
STAINLESS STEELS Aceros inoxidables									
Ferritic						>7,5	1,216		
Martensitic	Harden	>1000	>850	>2	50-55 HRC	>7,3	1,216		
Precipitation Hardening	Sinter H1150 H900	>850 >1200	>700 >1000	>5 >2 (>4)	30-35 HRC 40-45 HRC	7,5 (>7,6)	1,216 1,167		
Austenitic No Magnetic Fine Surface Simple geometry						>7,70	1,167		
HEAT RESISTANT Refractario	Sinter Ar Sinter N2					>7,65 >7,7	1,167 1,167		
SUPERALLOYS Ni base						>7,78	1,151		

BLUE: ISO 22068.

BLACK: Other Technologies Equivalent Standards.

RED: American Standards/Datos en rojo corresponden con norma ASTM ó MPIF americana.

GREEN: MIMCRISA own results not yet international standardized/
Datos en verde corresponden con resultados garantizados por MIMCRISA aún no estandarizados oficialmente.

Other materials as: Titanium, 1.4435, superalloys, etc.

WE ARE OPEN TO DEVELOP NEW MATERIALS ON DEMAND.

Review June 2021