EDRO™

INNOVATIVE TOOLING SOLUTIONS

MATERIALS | MOLD BASES | PVD COATINGS | ADDITIVE

PRODUCT LINE CARD

BÖHLER RoyAlloy® MOLDMAX® MOLD ALLOYS

STOCKS AVAILABLE IN FLATS AND ROUNDS: Saw cutting and machining to customer's exact requirements.
IN HOUSE SERVICES: Precision machining, gun drilling, rotary and surface grinding, PVD/DLC coatings, heat treatment services, metallurgical services.

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BÖHLER RoyAlloy® MOLDMAX® MOLD ALLOYS

MATERIAL NAME	AISI/DIN EQUIVALENT	DELIVERED CONDITION	ACHIEVABLE HARDNESS	APPLICATION
PREHARDENED STAINLESS STEELS				
RoyAlloy®	Mod 400 series DIN 1.2095	Prehardened HRC 29-34	-	Patented 400 series free machining stainless holder block steel. Used when excellent machinability, stability, flatness, and corrosion resistance are required. Commonly used for mold bases, plastic extrusion dies, rubber molds, and general machinery and industrial applications
EDRO400®	Mod 400 series	Prehardened HRC 38-42	-	Modified 400 series ESR stainless steel used when excellent polishability, superior corrosion resistance, and uniform hardness are required. Commonly used for plastic injection molding inserts, plastic extrusion tooling, and rubber molds.
UltraChem®	Mod 15-5	Prehardened HRC 38-42	-	Modified 15-5 stainless steel used when highest corrosion resistance, excellent compression strength and toughness are required. Commonly used for plastic injection molding inserts, plastic extrusion tooling, and rubber molds.
BÖHLER M303	Mod 1.2316	Prehardened HRC ~40	-	Stainless steel with excellent toughness, corrosion, and wear resistance with improved machinabilty and polishabilty. Used in molds with chemically aggressive plastics, e.g. household appliances, extrusion tools, fittings.
STAINLESS STEELS				
BÖHLER M310 ISOPLAST®	420 ESR	Annealed HB 225	HRC 48-52	Premium modified 420 ESR results in high polish, good machinabilty, and high wear resistance. Used in optical products and general inserts for injection molds.
BÖHLER M333 ISOPLAST®	Special ESR	Annealed HB 220	HRC 48-50	A modified 420 stainless steel made with pressurized ESR with exceptional toughness, high thermal conductivity and highest polishability. Used in plastic injection molding inserts.
BÖHLER M340 ISOPLAST®	440B ESR 1.4112	Annealed HB 260	HRC 53-58	Modified 440B ESR stainless steel with excellent wear resistance and corrosion resistance. Also has good machinability, dimensional stability, and polishability. Used in plastics injection molds for inserts, profiling, and nozzles.
BÖHLER M368 MICROCLEAN®	Special PM	Annealed HB 260	HRC 48-55	New generation stainless steel produced with powder metallurgy resulting in high wear resistance, high toughness, excellent grindability, and good polishability. Used in Mold inserts with chemically aggressive plastics, knives for food-processing industry, and molds for the electronics industry.
BÖHLER M390 MICROCLEAN®	Special PM	Annealed HB 280	HRC 56-62	New generation stainless steel produced with powder metallurgy resulting in the highest wear resistance, high toughness, excellent grindability, good polishability. Used in Mold inserts with chemically aggressive plastics, knives for food-processing industry, and molds

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MATERIAL NAME	AISI/DIN EQUIVALENT	DELIVERED CONDITION	ACHIEVABLE HARDNESS	APPLICATION
PREHARDENED NON STAINLESS STEELS				
P1FM®	Mod 4130	Prehardened HRC 28-32	-	Modified 4130 steel used when excellent machinability, stability, flatness, are required. Commonly used for mold bases, plastic extrusion dies, and rubber molds.
P20	P20 1.2312 (1.2738)	Prehardened HRC 30-34	-	Modified P20 which results in uniform high strength with optimal mechanical properties with high toughness, polishability, and machinability. Used in large molds for plastic processing.
BÖHLER M261	Special	Prehardened HRC 38-42	-	Precipitation hardening steel featuring excellent machinabilty with great compressive strength and wear resistance. Used in compression molds, hot runners, and molds for O-ring seals.
BÖHLER M268 VMR®	P20 + Ni 1.2738	Prehardened HRC 38-42	-	Vacuum remelted steel with uniform high strength and toughess with excellent thermal conductivity and polishability. Used in plastics mold when highest polishability and fatigue strength are required.
NON STAINLESS STEELS				
BÖHLER W302 ISOBLOC®	H13 ESR 1.2344	Annealed HB 205	HRC 46-52	Premium H13 ESR tool steel with excellent toughness and polishability. Used in hot work tools and dies, extrusion tooling, die casting equipment, and plastic molds.
BÖHLER W360 ISOBLOC®	Special	Annealed HB 205	HRC 51-58	Hot work tool steel with high hardness and outstanding toughness, used for special applications in die casting and the plastic processing sector such as core pins or high wear gating areas.
BÖHLER W350 ISOBLOC®	Mod H11	Annealed HB 205	HRC 50-54	Premium remelted hot work tool steel with excellent toughness, high heat checking resistance, and heat treatment response. Best used for larger dies to maintain very high toughness levels through out the core.
BÖHLER W720 VMR®	Marage 300 1.2709	Annealed HRC 32	HRC 51-55	Ultra-high strength maraging steel with high tensile strength, toughness, and full hardening. Used in tools for hydrostatic presses, cold extrusion tools, die casting tools for aluminum and zinc alloys, and cold pilger mandrels.
BÖHLER W403 VMR®	1.2367 VMR	Annealed HB 205	HRC 52-54	Vacuum remelted hot work tool steel with high temper resistance and therefore maximum resistance to heat checking. For molds requiring excellent toughness and compressive strength.
BÖHLER K320 ISODUR®	S7 ESR 1.2355 1.2357	Annealed HB 200	HRC 52-58	Modified S7 ESR shock-resistant grade with high toughness, good wear resistance, excellent polishability, and consistent heat treating. Used for plastic injection molding, compression and transfer molds, slides, ejector pins, and core pins.
BÖHLER K340 ISODUR®	Special ESR	Annealed 235 HB	HRC 57 – 63	BÖHLER K340 ISODUR is an 8% chromium steel produced using the electro-slag remelting (ESR) method. K340 is characterized by outstanding toughness, excellent compressive strength, and very good dimensional stability. K340 is commonly used in cutting, blanking, and cold forming applications or any application where D2 tool steel is failing.
BÖHLER K294 MICROCLEAN®	A11 PM	Annealed HB 280	HRC 63-65	Powder-metallurgical produced cold work tool steel with extremely high wear resistance, good toughness and high compressive strength.

ADDITIVE MANUFACTURING POWDERS

BÖHLER W360 AMPO	BÖHLER W722 AMPO	BÖHLER L625 AMPO	BÖHLER L718 AMPO	BÖHLER M789 AMPO	BÖHLER N700 AMPO
Special	Marage 300 1.2709	Ni-base alloy 2.4856	Ni-base alloy 2.4688	Stainless Steel Special	Stainless Steel 17-4 1.4542

Material Name	Delivered Condition	Application
MOLDMAX COPPER ALLOYS		
MoldMAX HH™	Prehardened HRC 40	This copper alloy has a hardness and strength comparable with standard tool steels but its thermal conductivity is four to six times higher. MoldMAX™ HH is used for injection mold cores and cavities and blow mold pinch-offs.
MoldMAX LH™	Prehardened HRC 30	MoldMAX™ LH (Low Hard) is a premium copper mold alloy that provides hardness and strength comparable with standard AISI P-20 tool steel and a thermal conductivity five-times higher. MoldMAX™ LH is used for injection mold cores and cavities where moderate hardness and high toughness and conductivity are required.
Protherm™	Prehardened HRC 20	PROtherm™ is a high conductivity copper mold alloy with good strength. PROtherm™ is used in blow mold, injection mold cores and cavities and hot runners. The alloy provides excellent toughness, and the highest conductivity of any alloy with tensile strength in excess of 100,000 psi.
MoldMAX XL™	Prehardened HRC 30	MoldMAX™ XL is a high strength copper mold alloy that contains no beryllium and is available in sections as large as 12" thick. The alloy's hardness is comparable with AISI P-20 tool steel, but its thermal conductivity is two to three times higher. MoldMAX™ XL is used as injection mold cores and cavities. The alloy provides excellent toughness, wear resistance and surface finishes.
MoldMAX V™	Prehardened HRC 28	MoldMAX™ V is a high conductivity, moderately high strength, copper nickel silicon chromium alloy with no beryllium. Applications include injection mold and blow mold cores and cavities.
ALUMINUM ALLOYS		
ACP 5080P	Prehardened HB 73	Aluminum 5083 CT&J is precision surface machined on top and bottom with tight tolerances. It is used when high machinability, corrosion resistance, and thermal conductivity are required. Used commonly in plastic injection molding, and plastic extrusion tooling. Available in plates from 0.25" to 4.00".
ACP 5080R	Prehardened HB 73	Aluminum 5083 is used when high machinability, corrosion resistance, and thermal conductivity are required. Used commonly in plastic injection molding, and plastic extrusion tooling. Available in plates from 4" to 40".
6061-T651	Prehardened HB 95	Aluminum 6061 is used in aluminum tooling when high machinability and thermal conductivity are required. Used commonly in plastic injection molding and plastic blow molding.
7075-T651	Prehardened HB 150	Aluminum 7075 is used in aluminum tooling when higher strength and high machinability are required. Used commonly in plastic injection molding and plastic blow molding.
QC-10™	Prehardened HB 160	QC-10 aluminum is used for aluminum tooling requiring the highest strength and longest tool life. QC-10 is most commonly used in plastic injection molding, plastic blow molding, and plastic extrusion tooling.

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