



MATERIALS | MOLD BASES | PVD COATINGS | ADDITIVE

PRODUCT LINE CARD

RoyAlloy[®]

MOLDMAX[®]
MOLD ALLOYS

STOCKS AVAILABLE IN FLATS AND ROUNDS: Saw cutting and machining to customer's exact requirements.

SERVICES: Precision machining, gun drilling, rotary and surface grinding, PVD/DLC coatings, heat treatment services, metallurgical services.

EDRO400[™], Ultrachem[™], P1FM[™], and RoyAlloy[™] are registered trademarks.

RoyAlloy[™] US Patents 11,318,640, 6,358,334 and 6,045,633. EDRO400[™] US Patent 8,557,059.

PREHARDENED STAINLESS STEELS

Material Name	AISI/DIN Equivalent	Delivered Condition	Achievable Hardness	Application
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.
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.

STAINLESS STEELS

Material Name	AISI/DIN Equivalent	Delivered Condition	Achievable Hardness	Application
420 ESR	420 ESR	Annealed HB 225	HRC 48-52	Modified 420 ESR results in high polish, good machinability, and high wear resistance. Used in optical products and general inserts for injection molds.
17-4 Stainless Steel	17-4 PH	AGE Hardened	HRC 33-44	17-4 Stainless Steel is a precipitation hardening stainless steel. 17-4 Stainless Steel is used in plastics processing and extrusion where a combination of high corrosion resistance and wear is necessary.
PM Plus	Modified PM-420 Mod	Annealed	HRC 56-60	Plastic extrusion tooling, injection mold inserts, injection mold components, high wear stainless applications

PREHARDENED NON STAINLESS STEELS

Material Name	AISI/DIN Equivalent	Delivered Condition	Achievable Hardness	Application
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 MQ	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 machinability with great compressive strength and wear resistance. Used in compression molds, hot runners, and molds for O-ring seals.
4140 MOD PRE-HARD	Special	Prehardened HB 290-330	-	For use in holder plates, backing plates, cavity and ejector plates. Great for plastic/vinyl extrusion dies, unpolished inserts and dies.

NON STAINLESS STEELS

Material Name	AISI/DIN Equivalent	Delivered Condition	Achievable Hardness	Application
H13 ESR	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.
10V	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.
S7MQ	AISI S7	Annealed HB 260	HRC 55-60	Versatile impact-resistant tool steel offering good toughness and wear resistance, capable of polishing to mold quality standards for use in plastic injection molding.

MOLDMAX COPPER ALLOYS

Material Name	Delivered Condition	Application
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

Material Name	Delivered Condition	Application
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.

A36, A2, D2, M2, DRILL ROD, FLAT GROUND STOCK
Further Grades and Alloys available upon request

RoyAlloy®

MOLDMAX®
MOLD ALLOYS

PRODUCTS AND SERVICES



MATERIALS & MACHINING SERVICES

We offer a wide range of quality tool steels, aluminum and copper products as well as machining services for your tooling requirements.



CUSTOM MOLD BASES

Complete manufacture of high precision custom mold bases, designed to provide precision alignment and long lasting performance.



PVD/DLC COATINGS

Our partner eifeler offers thin film PVD/DLC coatings to improve the quality, functionality, efficiency and durability of tools, specialized parts and mold components.



ADDITIVE

From powder to parts, Our partner voestalpine offers high quality powders for your 3D metal printing needs, as well as complete additive manufacturing solutions.



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