wieland

DuroPlast® AB

Technical Datasheet

Short Name	CW307G	**Chemical**	Al	Fe	Ni	Mn	Pb	Cu
Code	CuAl10Ni5Fe4	**Composition**	10	4	5	max. 1.0	max. 0.05	balance
Material-No.(old)	2.0966	**(Reference values in %)**						

Material Properties	DuroPlast® AB is an aluminum multi-alloy bronze with elevated nickel and iron content. It offers a balanced strength, good wear and corrosion resistance and good hisotropy.
Applications	- plastic injection tools: core and cavity inserts or full cores - suitable for high corrosive polymers - wear plates high strength and low coefficient of friction is required - suitable for food industry molds

Mechanical Properties (precipitation hardened)	Conditions		aged
	Hardness	HB	180 – 210
	Tensile strength	N/mm^2	680 – 740
	Yield strength	N/mm^2	320 – 400
	Elongation L = 5 D	%	min. 8
	Modulus of elasticity	kN/mm^2	117 – 120

Physical Properties (precipitation hardened)	Coefficient of thermal expansion 0 – 320°C (273 – 573 K)	$\frac{1}{K}$	$17.0 \cdot 10^{-6}$
	Thermal conductivity 20 °C (293 K)	$\frac{W}{m \cdot K}$	50
	Density	g/cm^3	7.45

Products	Rods, Plates
Wieland DuroPlast® Materials	DuroPlast® is Wieland's advanced material solution for applications requiring exceptional hardness, thermal conductivity and durability. Our materials are designed for precision mold-making and high-performance components across multiple industries in the plastic market.

Key Benefits	- High hardness and wear resistance	→ Suitable for medium/ long production series
	- Excellent thermal conductivity	→ Reduce moulds cycle time improves plastic parts quality
	- Superior toughness/ ductility	→ Reduce risks of moulds premature failures
	- Excellent corrosion resistance	→ Reduce the moulds maintenance costs

Wieland Copper Alloys for Plastic Tooling				
Product Name	Hardness	Thermal Conductivity (W/mK)	Tensile Strength (N/mm2)	Elongation L=5D
DuroPlast® HH CuBe2	36 - 42 HRC	110 (20°C)	1150 - 1350	min. 5
DuroPlast® HA CuCo1Ni1Be	240 - 260 HB	210 (20°C)	700 - 900 (*)	min 5 - min 10 (*)
DuroPlast® SC CuNi7Si2Cr	240 - 260 HB	160 (20°C)	700 - 900	min.5
DuroPlast® NCS CuNi2Si (+Cr)	190 - 240 HB	160 (20°C)	min. 650	min.5
DuroPlast® AB CuAl10Ni5Fe4	180 - 210 HB	50 (20°)	680 - 740	min.8

** depending on the thickness*

Wieland No-Copper Based Alloys for Plastic Tooling					
Product Name	Hardness	Thermal Conductivity (W/mK °)	Tensile strength (N/mm2)	Elongation L=5D	
DuroPlast® TZM	200 - 250 HV	130 (20°C)	750 - 900	min. 6	
		Chemical Composition			
Ti	Zr	C	Mo		
0,50%	0,08%	0,03%	Rest		
Applications:	Gate Inserts, Spure Bushings, Core Pins (Thin-Wall Sections), Parts Exposed to High Temperature				
DuroPlast® 7075	150 HB	130-160 (20°C)	440-560 (*)	min. 6	
		Chemical Composition			
Si	Fe	Mg	Cr	Zn	Al
0,40%	0,50%	2,90%	0,28%	6,10%	Rest
Applications:	Blow Molding Molds, Prototypes Plastic Injection Molds, Thermoforming Tools				

** depending on the thickness*

Product Name	Hardness	Thermal Conductivity	Heat Resistance	Corrosion Resistance	Machinability
DuroPlast® HH					
DuroPlast® HA					
DuroPlast® SC					
DuroPlast® NCS					
DuroPlast® AB					
DuroPlast® TZM					
DuroPlast® 7075					

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