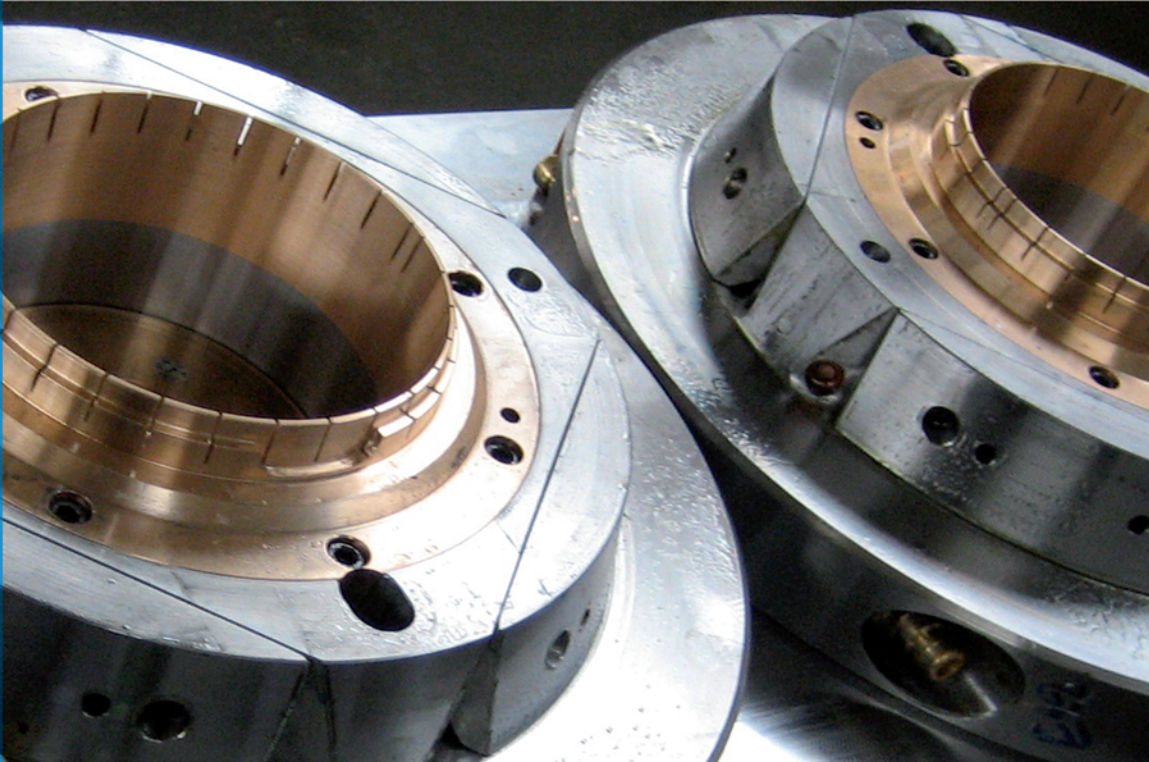


TOOL ALLOYS DATASHEET

# FormaPlast™

*for plastic*



THERMAL CONDUCTIVITY  
HARDNESS  
STRENGTH  
WEAR RESISTANCE  
CORROSION RESISTANCE

**RS Alloys**  
Steel & Copper

FORMAPLAST PLASTIC



**FORMAPLAST** the range of copper alloys distributed by RS ACCIAI, that combines characteristics of thermal conductivity, hardness, corrosion and galling resistance.

Formaplast alloys allow shorter cycle times, improved final part dimensional control and simplified cooling channels.

Adhesive wear resistance avoids galling in the moving mold parts and reduces the abrasive plastics effect on the figure during the injection phase.

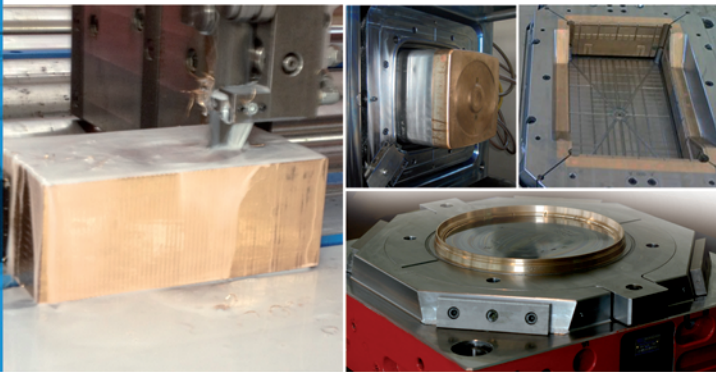
The excellent corrosion resistance makes the alloys suitable for use with corrosive plastic and avoids annoying clogging of the cooling channels.

- **HIGH THERMAL CONDUCTIVITY**
- **HARDNESS AND STRENGTH**
- **WEAR RESISTANCE**
- **ANTI GALLING**
- **CORROSION RESISTANCE**
- **MACHINABILITY**
- **HIGH POLISHABILITY**

Rigorous production standards ensure high isotropy, homogeneous grain structures and absence of microporosity or inclusions, providing good machinability, and the ability to obtain highly polished surfaces and/or photoengraving.

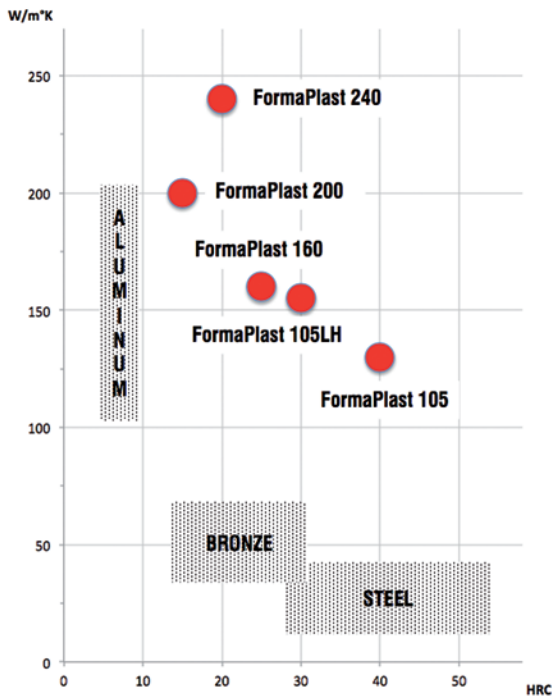
The alloys are produced by an American company, the world's leading supplier of high-performance copper alloys.

The same rigorous production standards and programs required for high-tech applications (aerospace, energy, offshore, electronics) are also used in creation of these mold alloys, providing high quality and available technical support.



		Hardness HRC (HRB)	Thermal conductivity (20°C) W/m·K	Specific heat (100°C) J/kg·K	Elongation A %	Tensile strength Rm Mpa	Yield strength Rp0,2 Mpa	Modulus of Elasticity E Gpa	Density g/cm <sup>3</sup>	Coefficient of expansion ppm/°C
<b>105</b>	Be 1,6-2,0 Co 0,2-0,3 Cu balance	40 (370)	130 (105)	440	5	1170	1000	130	8,4	17,5
<b>105LH</b>	Be 1,6-2,0 Co 0,2-0,3 Cu balance	30 (290)	155 (130)	440	15	965	760	131	8,4	17,5
<b>160</b>	Ni 6,5-7,5 Si 1,5-2,5 Cr 0,6-1,2 Cu balance	24-30 * (250-290)	160	410	7	860	725	130	8,7	17,5
<b>200</b>	Ni 1,8-3,0 Si 0,4-0,8 Cr 0,1-0,8 Cu balance	~15 (170)	200	398	14	655	520	130	8,8	17,5
<b>240</b>	Be 0,2-0,6 Ni 1,4-2,2 Co 0,8-1,3 Cu balance	24 (250)	240	420	10-15	780	700	135	8,8	17

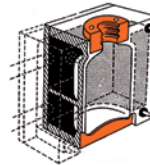
\* The hardness decreases in relation to the thickness



## Formaplast 160

copper alloy with an excellent combination of thermal conductivity, hardness and mechanical strength.

With a thermal conductivity similar to aluminum and good resistance to abrasive wear (due to the presence of hard silicate particles present in its matrix), it is particularly suitable for cutting inserts in blow molds. Moreover, unlike copper-beryllium, 160 reduces the unpleasant effect of galvanic corrosion



*160 Watt!  
Resilience*

Typically used for inserts in blow molds, injection molds and in plastics processing.

## Formaplast 105

*105 Watt  
40 Rockwell!*

a copper alloy with two percent of Beryllium normally used in injection molds, which ensures the best combination of thermal conductivity and hardness.

The features make it ideal for a wide variety of inserts in injection molds, especially when high hardness (closure) or a high polish (lens) is required.

## Formaplast 105 LH

*130 Watt  
Toughness*

is a low hardness variation of 105, it has higher thermal conductivity but a lower hardness. It is used for inserts or integral molds with complex geometries particularly subject to fatigue.

## Formaplast 200

*200 Watt  
Machinability*

copper alloy with high thermal conductivity but with low hardness.

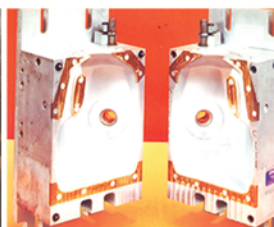
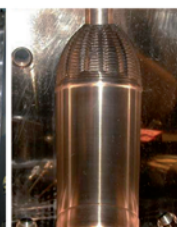
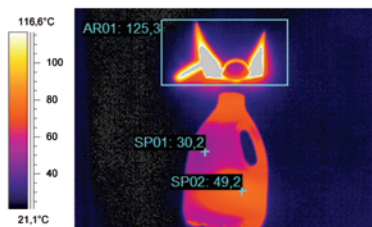
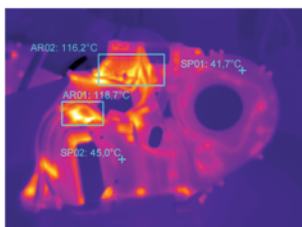
It is indicated for plastic molds of medium-large size, when it is preferable to have high workability at low cost.

## Formaplast 240

*240 Watt  
Electr. cond.*

Copper alloy with one percent of Beryllium with high thermal and electrical conductivity.

It is particularly suitable for nozzles and hot runners.

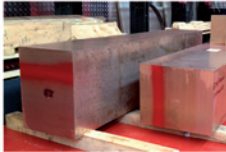






## WAREHOUSE

copper alloys stock, cut to size parts, delivery and technical-commercial support on the whole European territory.



## FormAl™

aluminium bronzes for sliding parts, rolls, bushings and cold forming.



## PM STEELS (powder metallurgical)

for highly stressed tools, wear resistance, toughness, corrosion resistance, maraging steels.



## HEAT TREATMENTS

vacuum, hardening, tempering, annealing, normalizing, stress relieving, solubilizations, aging, cryogenic.



**RS Alloys**  
**Steel & Copper**

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