Material data sheet HOVADUR® K 265

Material designation SCHMELZMETALL **HOVADUR® K 265**

Description of material

HOVADUR® K 265 is a thermally precipitation hardenable copper alloy. In heat treated condition, the alloy combines high hardness and high resistance to heat with good thermal conductivity.
Due to vacuum technology and special processes, clearly better properties compared to standard quality HOVADUR® K 250 can be agreed.

Safety data sheet

SCHMELZMETALL No. 07.02E (Issue 30.07.2002)
Advice
SCHMELZMETALL alloy HOVADUR® K 265 is a modification of the alloy HOVADUR® CCNB eh which is produced according to special processes and heat treatments. Concerning safety aspects, the same information as for HOVADUR® CCNB eh is valid.

Material properties

Chemical composition in % of weight (nominal values)

Co	Ni	Be	Fe	Si	Cu
1.0	1.0	0.5	< 0.2	< 0.2	Remainder

Agreed properties at 20 °C (Condition: hardened)

Hardness Brinell HB		**260–310 *)**
Electrical conductivity	**MS/m**	**min. 28**

***) In case of different opinions, hardness is calculated as the average of 3 randomly located measurings.**

Associated properties at 20 °C (Condition: hardened)

Tensile strength	1)	N/mm^2 (MPa)	750–900
0.2% yield strength	1)	N/mm^2 (MPa)	650–800
Elongation (A5)	1)	%	8– 14

1) Strength values will only be proved if ordered by the customer.

Material information (nominal values)

Elastic modulus	N/mm^2 (MPa)	135,000	
Softening temperature	°C	480	
Specific weight	g/cm^3	8.85	
Thermal conductivity	W/mK	230–250	**(Average 20 °C–300 °C)**
Thermal expansion coefficient	x 10^{-6}/°K	17.2	**(Average 20 °C–300 °C)**
Melting interval	°C	1000–1030	

Processing instructions

Hot forming
HOVADUR® K 265 is not intended for hot forming.
Advice: After a hot forming executed by the customer, the properties of HOVADUR® K 265 will normally no longer be achieved.

Cold forming
In hardened condition, HOVADUR® K 265 is not intended for cold forming.

Heat treatment
A heat treatment of HOVADUR® K 265 is not recommended. In general, it changes the agreed properties which will no longer be achieved afterwards.

Machining
HOVADUR® K 265 is well suitable for machining. We recommend standard hard metal tools with positive cutting geometry.
For drilling, attention must be paid to good removal of chips. Cooling with emulsion is recommended.
In case of dry machining, this has to be done with strong suction. Outgoing air has to be cleaned by a particle filter.
Eroding of HOVADUR® K 265 is possible, but difficult due to its high electrical and thermal conductivity.
Thread moulding is possible to a limited extent. Bigger inside threads should be executed by circular thread milling.
HOVADUR® K 265 is suited for polishing.

Joining
HOVADUR® K 265 is suitable for soft as well as hard soldering. Concerning hard soldering (even at limited time of effect of the temperature), a loss in hardness in the area of heating is to be expected. A very low melting silver brazing should be used and the brazing process itself should be as short as possible. HOVADUR® K 265 is suited for welding. **Attention must be paid to sufficient extraction and filtering of welding fume.** Surfaces may be coated according to all usual procedures without problems.

Application examples

Mechanically highly strained mould parts in mould making for plastic injection. Nozzles and hot channel systems in tools for plastic injection. Parts for tempering systems in mould making for plastic injection and die casting. Thermally high strained parts which are susceptible to fire cracks.
Moulds for non-ferrous metal casting, inserts in steel moulds at spots requiring a faster cooling speed.

Approvals
Our alloy HOVADUR® K 265 is tested and certified as being safe concerning contact with food.