

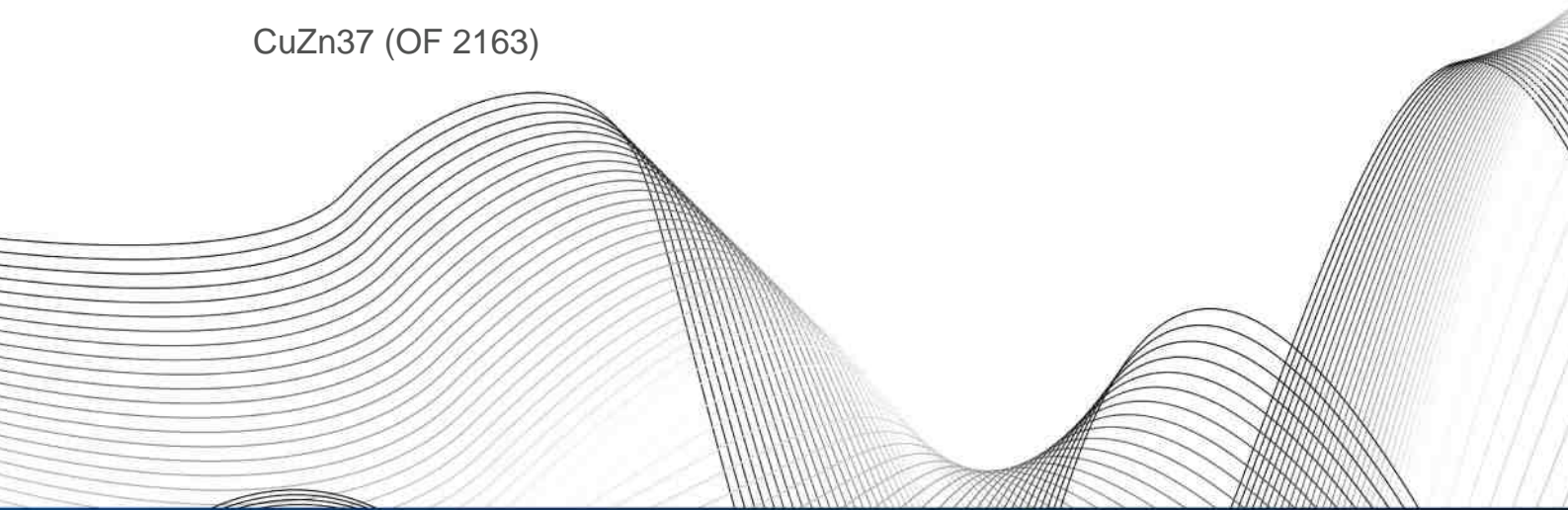


OTTO FUCHS
Dülken GmbH & Co. KG



Copper and Copper Alloys

CuZn37 (OF 2163)





	Cu	Zn	Pb	Sn	Fe	Mn	Ni	Al	Si	As	Co	Cr	Others
min.	62.0	Rem.	-	-	-	-	-	-	-	-	-	-	-
max.	64.0	-	0.1	0.1	0.1	-	0.2	0.05	-	-	-	-	0.1

Applications

Due to its excellent cold formability CuZn37 is used for parts which are produced by means of deep drawing, pushing, compression, rolling, stamping and bending.

Examples of application:

Tubes
Profiles
Deep drawn parts
Fasteners

Physical properties

At room temperature

Density	8.4	g/cm ³
Electrical conductivity	15.5	MS/m
	26.7	% I.A.C.S
Heat conductivity	121	W/(m*K)
Heat capacity	377	J/(kg*K)
Coefficient of thermal expansion	20.2	10 ⁻⁶ /K
Young's modulus	110	GPa
Melting range	900-920	°C

Microstructures

CuZn37 provides homogeneous microstructures consisting of α -phase. Depending on the cooling conditions of the forming processes some remnants of b-phase may be present in the microstructures.



Consignment and measurements

Strength conditions

Spec./ DIN EN	Condition	Yield strength R _{p0.2} [MPa]	Tensile strength R _m [MPa]	Elongation at break A [%]	Brinell- Hardness HBW 2.5/62.5
12163	M	**	**	**	**
12165					
12167					
12449					
12163	R290	≤230	≥290	≥45	/
12167		≤230	≥290	≥45	/
12449	R300	≤220	≥300	≥45	/
12163	R370	≥240	≥370	≥14	/
12167		≥240	≥370	≥14	/
12449		≥200	≥370	≥25	/
12449	R440	≥320	≥440	≥10	/
12167	R460	≥330	≥460	/	/
12167	H050	/	/	/	50-100
12449	H060	/	/	/	55-85
12163	H070	/	/	/	70-110
12165		/	/	/	70-170
12167	H085	/	/	/	85-130
12449		/	/	/	80-115
12163	H105	/	/	/	105-145
12167		/	/	/	105-145
12449	H115	/	/	/	≥110

DIN EN 12163:
Bars, general purpose

DIN EN 12164:
Bars for machining

DIN EN 12165:
Pre-material for forging

DIN EN 12167:
Profiles, rectangular bars

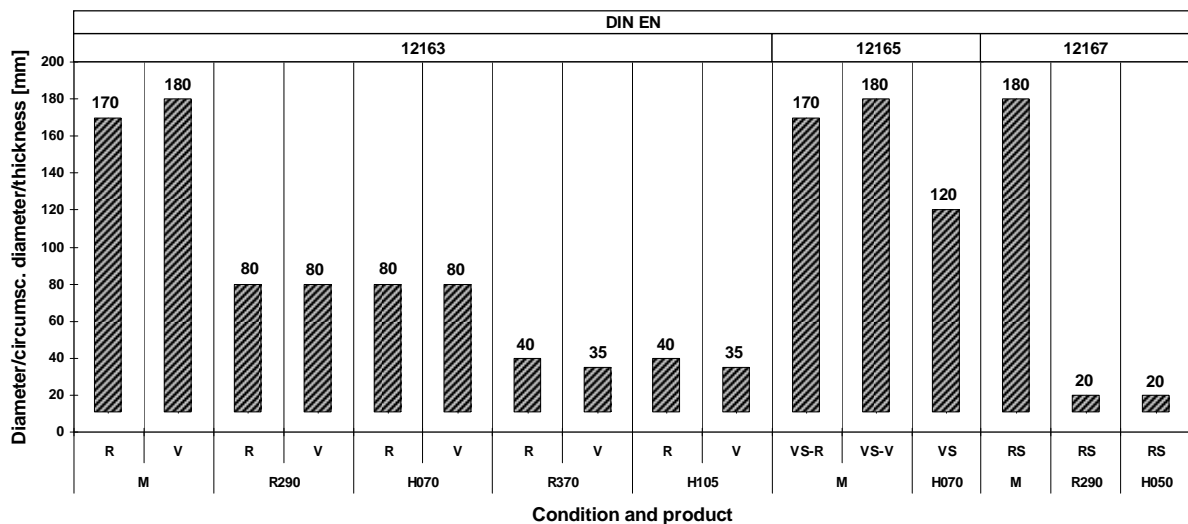
DIN EN 12168:
Hollow bars for machining

DIN EN 12449:
Seamless tubes

DIN EN 12420:
Forgings

** Condition M = without specified mechanical properties-as manufactured
/ No requirements in standard or not applicable

Specified dimensions for bars, pre-material for forging and forgings

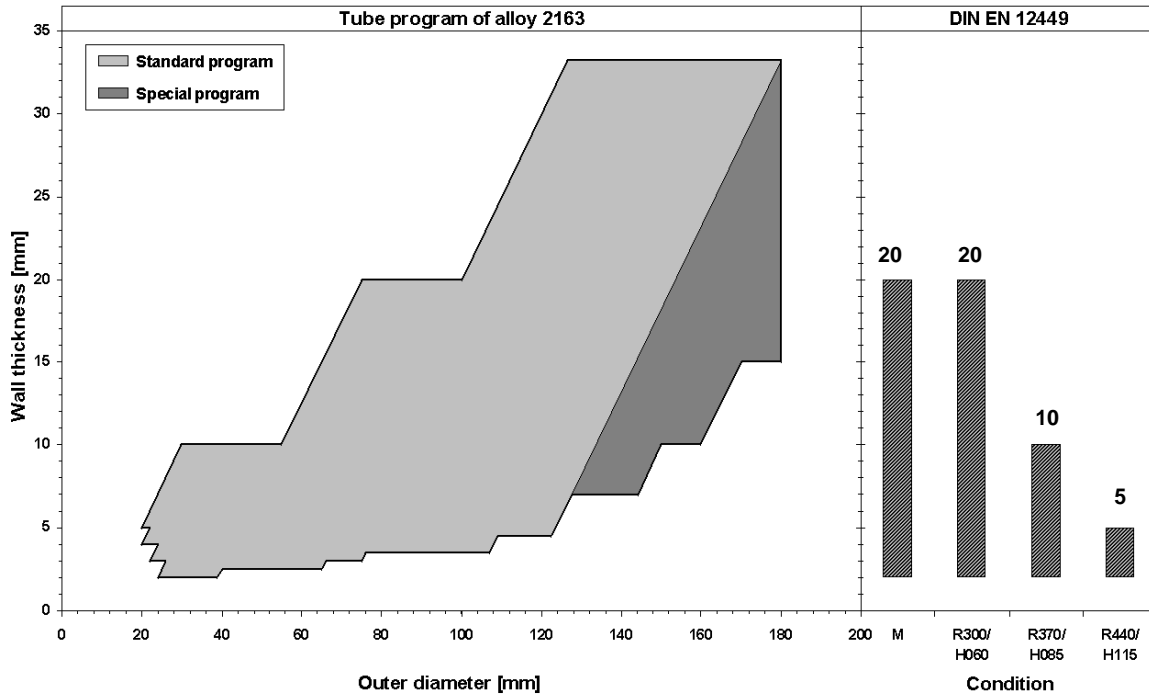


R/V Rod/polygonal bar
VS-R/V Pre-material for forging round/polygonal
RS Rectangular bar



Profiles and rectangular bars can be delivered up to 180 mm in extruded and up to 130 mm in cold drawn condition. Pre-material for forging and forgings is dependent upon each individual case.

Specified dimensions for hollow bars and round tubes



Further dimensions for hollow bars and round tubes are available on request.

Other consignments

Rods and tubes in other strength and hardness conditions, and dimensions are available on request.

Processing		Heat treatment	
Shaping		Soft annealing	450-650°C
Machinability (CuZn39Pb3=100%)	average (35)	Stress relieving	200-300°C
Cold working	very good	Special notes and remarks	
Hot working	good		
Hot working temperature	750-870°C	There is a risk of stress corrosion cracking (SCC) in case of concurrent presence of mechanical stress and corrosive media (in particular ammoniac atmosphere).	
Connecting			
Resistance welding	good		
Shielded welding	average		
Brazing	very good		
Soldering	very good		
Surface treatment			
Mechanical polishing	very good		
Electrolytic polishing	good		
Galvanisation	very good		
Tin coating	very good		

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