

Material	Unit	Brass	Stainless steel	Zinc die-casting
Material abbreviation		CuZn39Pb3	X8CrNiS18-9	GDZnAl4Cu1
Further names			1.4305	ZP0410
for article series (examples)		50.6xx M 10.xx15 MxxMxx 50.2xx M	50.6xx ES 1010xxMxxES 50.2xx ES	21.6xxM 21.7xxM
Basic characteristics				
Halogen-free		yes	yes	yes
Phosphorus-free		yes	yes	yes
Silicone free		yes	yes	yes
Physical characteristics				
Density	g/cm ³	8,45	7,9	6,7
Moisture absorption at +23°C	%	0	0	0
Linear shrinkage	%	n.i.	n.i.	0,6 - 1,1
Thermal characteristics				
Flammability to UL94		(not inflammable)	(not inflammable)	(not inflammable)
UL test number		not UL-tested	not UL-tested	not UL-tested
min. continuous operating temperature	static °C			
	dynamic °C			
max. continuous operating temperature	°C			
Melting point	°C	895	ca. 1450	380
Heat conductivity	W/mK	117	n.i.	110
Mechanical characteristics				
Tensile modulus	GPa	ca. 96	200	85
Impact at 23 °C	kJ/m ²	n.i.	n.i.	n.i.
Impact, notched, at 23 °C	kJ/m ²	ca. 200	n.i.	n.i.
Hardness		n.i.	n.i.	n.i.
Electrical characteristics				
Spezific electrical resistance	Ω x mm ² /m	0,066	0,73	n.i.
Resistance				
Weather		1 - 2	1 - 2	2
UV		1 - 2	1 - 2	1 - 2
Ozone		1 - 2	1 - 2	n.i.
Ozone 20 ppm in air		1 - 2	1 - 2	n.i.
Ozon 1 ppm in water		1 - 2	1 - 2	n.i.
Ageing		1 - 2	1 - 2	2 - 3
Acetone (2%)		2	1	n.i.
Ethanol (40 Vol.)		1	1	1 - 2
Ammonia (20% by weight)		2 / X	2 / n.i.	n.i.
Benzole		1	1	2
Petrol Normal/ Super fuel to DIN		1	1	1 - 2
Brake fluid (Hydraulan-BASF)		n.i.	1 - 2	n.i.
Steam (Sterilization DIN 58946)		2 - 3	1 - 2	n.i.
Diesel fuel to DIN		2	1	n.i.
Crude oil / fuel oil / mineral oil		2	1	1 - 2
Faeces		n.i.	1 - 2	n.i.
Gear oil, mild alloy		2	1 - 2	2
Hydraulic oil (mineral oil based)		2	1 - 2	2
Potassium hydroxide solution		3	1 - 2	2
Kerosene		n.i.	n.i.	n.i.
Carbon dioxide		3	1	n.i.
Paints		1	1	1
Solvents		1	1	1 - 2
Stove enamelling (150°C)		1	1	1
Glue		2	1	n.i.
Air, atmospheric		1	1	1
Air, containing oil vapour		2	1	1
Seawater		3	2	3
Methanol		1	1	n.i.
Sodium chloride (aqueous)		3	3	2 - 3
Oil (vegetable, etheric)		2	1 - 2	n.i.
Petroleum		2	1	n.i.
Phosphoric acid (50%)		X	2	X
Nitric acid (40%)		X	2	X
Hydrochloric acid (38%)		X	3	X
Sulphuric acid (30%)		X	X	X
Soap solution		2	2	2
Silicon oils and greases		2	2	n.i.
Terpentine (oil)		2	2	n.i.
Transformer oil		n.i.	2	n.i.
Drinking water		1	1	1
Detergent solution (heavy-duty) (20°C/80°C)		n.i.	2	2

Key for resistance ratings:

1 = very good resistance 3 = mean/ conditional resistance n.i. = no information
 2 = good resistance X = not resistant Z.e. = determine precise composition

The values provided here are guideline values only, based on our current state of knowledge and cannot be used as the basis for any legally binding assurance of certain characteristics or concrete cases of application. To ascertain the concrete suitability of a particular product, a test of the finished part under the specific application conditions is necessary.